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A Comprehensive Guide for parents and students joining medical college for MBBS/BDS degrees

WHY SHOULD I BECOME A DOCTOR?

(First Edition)

By

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SOON AVAILABLE AT THE LEADING BOOKSTALLS OF THE COUNTRY

Further information: Managing Editor, Ophthalmology Update
Amblyopia, commonly referred to as “The Lazy Eye” is a disorder characterized by an impaired vision in an eye that otherwise appears normal, or the visual loss is out of proportion to the associated structural abnormalities of the eye. It has been estimated to affect 1-5% of the general population which means that it is responsible for more visual loss in children and young adults than all the other causes put together. According to the Visual Acuity Impairment Survey sponsored by the National Eye Institute (NEI, USA), amblyopia was shown to be the leading cause of monocular visual loss in adults aged 20-70 years or older.

Only children can get amblyopia as it is believed to result from disuse or inadequate foveal stimulation during the critical periods of human visual acuity development. During these time periods, vision can be affected by various mechanisms to cause or reverse amblyopia. The development of visual acuity from the 6/60 range to 6/6 occurs from birth to the age of 3-5 years. The period of the highest risk of deprivation amblyopia is from a few months age to 7 or 8 years. If it is not treated during this period, it can cause permanent loss of vision.

The decrease in vision results when one or both eyes send a blurry image to the brain. The brain then “learns” to see only a blurred image from that eye resulting in visual loss in that eye. Even when correcting glasses are used later in life, it cannot interpret the clear image that is being projected by the glasses. However, the brain can be “re-trained” to see that clear image and then only the vision may improve.

Why a blurred image is communicated to the brain? This occurs when either the visual impulses are poorly transmitted through a healthy optic nerve to the brain for a continuous period of time resulting in “Stimulus Deprivation Amblyopia” as seen in complete congenital ptosis, corneal opacity, congenital cataract or the brain “turns off” the visual processing of one eye to prevent double-vision as in strabismus where two dissimilar images are projected to the brain, “Strabismic Amblyopia” or in gross anisometropia, “Anisometropic Amblyopia”, seen with astigmatism of 1D or more, myopia of 5D or more and hypermetropia of more than 1.5 D.

Diagnosis of the presence of amblyopia and its cause is very important to plan its treatment. A patient may present with strabismus or poor vision in one eye. In a non-verbal child, poor vision in one eye can be gauged if the child protests covering the good eye, the other eye may be amblyopic or if there is a fixation preference where the child looks at the torch light with one eye only (the good eye) and the other eye is strabismic (it does not take up fixation). Amblyopia therapy is a 3 stepped approach:

1. As a first step, the cause is treated i.e. ptosis blocking the visual axis, or congenital cataract.
2. Then the refractive glasses are given. In the presence of strabismus, the refractive error is fully corrected i.e. myopia, hypermetropia and astigmatism are fully corrected. Without the strabismus, the cylindrical error is fully corrected as it gives clarity of form of vision while the myopic and hypermetropic correction is given after a subjective refraction. The correcting glasses are worn constantly for 6 weeks. This corrects about 20-30% of the amblyopia.
3. After constant spectacle wear for one month to six weeks, active therapy for the remainder of visual loss is started. This involves occlusion of the good eye combined with active use of the bad eye. Many people recommend part-time occlusion therapy. In our recent study, we found out that with full-time occlusion of the good eye for 8 - 10 weeks, 100% restoration of visual acuity along with improvement in stereopsis is achieved. On the other hand, only a partial visual recovery has been achieved in all the studies published to date. It is important to understand the cause of this difference in results. The visual pathway comprises of 3 neurons: the bipolar cells (first-order neurons) receive visual impulses from rods and cones and transmit them...
to the retinal ganglion cells (second-order neurons). The ganglion cell axons constitute the optic nerve fibers which cross in the optic chiasma and terminate in the lateral geniculate body. The fibers of LGB constitute the optic radiation and terminate in the neurons of occipital lobe for visual processing. Histological studies on kittens showed shrinkage of LGB neurons in the amblyopic eye. The nerve cells in this three neural pathway are not dead (apoptosed) but only shrunk; they can be made to work again by active stimulation while removing the inhibitory influence of the good eye over the amblyopic eye. Only with full-time occlusion therapy, this inhibitory influence of the good eye is removed, the neuronal connections start functioning without any interference from the good eye and achieve their full potential in a short time (2-3 months). With part-time occlusion therapy, these connections and neural transmission from the amblyopic eye is inhibited once the good eye is allowed to see as soon as the eye patch is removed. Hence visual recovery with part-time occlusion therapy is partial and takes a much longer time (6-9 months).

To achieve a full visual potential in an amblyopic eye, its active use is mandatory. This is achieved by reading books of a larger print initially and then shifting to smaller prints as visual improvement occurs, playing computer games on cell-phones, coloring, drawing. For all these activities, counselling and motivation of parents as well as the patient is very important. Compliance is the main hindrance in improvement of vision by full-time occlusion therapy. Hence visual recovery with part-time occlusion therapy is partial and takes a much longer time (6-9 months).

REFERENCES

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Increased Risk of Co-Morbid Systemic Disease in Branch Retinal Vein Occlusion

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ABSTRACT

Aim: To investigate relationship between branch retinal vein occlusion (BRVO) and co-morbidity represented as a kidney disease.

Methods: The study was a clinic based case-control study of 158 patients with a clinical presentation of BRVO and 500 controls, all aged 31 years and older. Excluded from case and control group were persons with severe myopia, vaso-proliferative retinopathy, and intermediate or posterior intraocular inflammatory disease. At the baseline examination urine samples were tested and proteinuria was defined. A commercially available statistical software package was used for tabulations and statistical analyses.

Results: We found that kidney disease was significantly more common among our cases than controls. After adjusting for age and sex kidney disease was significantly associated with BRVO. In multivariate analysis, kidney disease (odds ratio OR=34.25, 95% confidence interval CI: 4.42-727.44 ) remained independently significant risk factor for BRVO. Likely explanations for an elevated prevalence of kidney disease in BRVO cases is that kidney disease may cause renal origin arterial hypertension, which is significantly associated with BRVO.

Conclusions: The results from this case-control study provide important evidence of a link between kidney disease and BRVO and suggest that kidney disease affects ocular circulation. Our data also support the potential value of medical treatment of underlying medical condition in preventing occurrence of BRVO.

Key words: Retinal vein, branch retinal vein occlusion, risk factors, systemic co-morbidity

INTRODUCTION

Branch retinal vein occlusion (BRVO) is the most common retinal vascular disorder after diabetic retinopathy and is a significant cause of visual handicap. BRVO is more common than central retinal vein occlusion, with a 5-year incidence in 0.6% of the general population, compared with a 0.2%; 5-year incidence of central retinal vein occlusion (CRVO). The 9-year cumulative incidence of BRVO was 2.7% for BRVO and 0.3% for CRVO in a General Japanese Population. BRVO can affect approximately four to five people per 1,000 of the population.

The first case of branch retinal vein occlusion was reported by Leber in 1877.

The pathogenesis of retinal vein occlusion is multifactorial while BRVO may be due to a combination of three primary mechanisms:

i. compression of the vein at the arteriovenous (A/V) crossing,
ii. degenerative changes of the vessel wall, and
iii. abnormal hematological factors.

Koyanagi in 1928 first reported the association between BRVO and A/V crossing, and now it is established that mechanical narrowing of the venous lumen at these intersections plays a role in the pathogenesis of BRVO. Systemic hypertension, hyperlipidemia, diabetes mellitus, atherosclerosis, and smoking are reported to be more common in patients with BRVO.

Sclerosis of the retinal artery which is associated with these systemic disorders may result in further compression of the vein, when the increased rigidity of arterial wall and contraction of the adventitial sheath shared by artery and vein occur. Mechanical obstruction of the vein through the rigid artery in the A/V crossing may result in turbulent blood flow producing damage to venous endothelium and intima media and the sequence of events leading to occlusion of the vein. Some studies have revealed an association between BRVO and hyperviscosity due to high hematocrit, thrombophilia and hypercoagulation, thrombocyte aggregation. Higher blood viscosity increases under conditions of low blood flow and erythrocyte aggregation. It is thus very important to identify systemic risk factors of the branch retinal vein occlusion to develop preventive measures for the disease. The aim of this study was to investigate relationship between branch retinal vein occlusion (BRVO) and co-morbidity represented as a kidney disease.

MATERIALS AND METHODS

The study was a clinic based case-control study of 158 patients with a clinical presentation of BRVO and 500 controls, all aged 31 years and older. Signs of BRVO included characteristic clinical features with...
flame-shaped, dot and blot hemorrhage, soft and hard exudates, retinal edema, and dilated, tortuous vein in a segmental distribution. The diagnosis is based on clinical examination under slit lamp and fundoscopy in artificial mydriasis. Excluded from case and control group were persons with severe myopia, vasoproliferative retinopathy, and intermediate or posterior intraocular inflammatory disease. At the baseline examination urine samples were tested and proteinuria was defined. We considered the following risk factors for BRVO: age, sex, hypertension, systolic blood pressure, diastolic blood pressure, diabetes, chronic kidney disease. Age, systolic blood pressure, diastolic blood pressure, were treated as continuous variables and the others as categorical variables. Each categorical variable was coded as either 1 or 0, depending on the presence or absence of the factor, respectively. A commercially available statistical software package was used for tabulations and statistical analyses.

RESULTS
A total of 158 patients with BRVO and 500 controls were included in the study. All cases and controls were white (European origin). Sex distribution among BRVO cases and controls was male 49.5% and 61.1%; female 50.5 and 38.9% respectively. The most common diagnoses among controls (n=500) were as follows:

i. corneal disorders 46%;
ii. cataract 29%;
iii. refractive error 22%.

Several risk factors were significantly associated with BRVO in the screening analyses. We calculated odds ratios to assess the magnitude of these associations, grouping the values for each characteristic. Patients 70 years and older represent the selected population with less likelihood of active vascular event, compared with the 61- to 70-year-old group in our population, average life expectancy varies between 50 and 60 years.

The mean values of systolic and diastolic blood pressures and the frequencies of hypertension and kidney disease were higher in subjects with BRVO than values in subjects without BRVO. After adjusting for age and sex, higher diastolic blood pressure (per 10 mm Hg) (OR, 1.55; 95% CI, 1.16 to 2.05) was significant risk factors for the development of BRVO. In the hypertensive group, higher diastolic blood pressure and kidney disease significantly increased the risk of BRVO, We found that kidney disease was significantly more common among our cases than controls. After adjusting for age and sex kidney disease was significantly associated with BRVO. In multivariate analysis, kidney disease (odds ratio OR=34.25, 95% confidence interval CI: 4.42-727.44 ) remained independently significant risk factor for BRVO.

DISCUSSION

In this clinic-based case-control study we identified that kidney disease was significantly more common among our cases than controls. Increased risk was found with systemic hypertension also. The present study found that higher diastolic blood pressure was significantly associated with BRVO and that higher systolic blood pressure was also associated with RVO. Likely explanations for an elevated prevalence of kidney disease in BRVO cases is that kidney disease may cause renal origin arterial hypertension, which is significantly associated with BRVO. Although the etiology and pathogenesis of BRVO are largely unknown, the consistent association with elevated blood pressure found in this study is in accordance with the findings from many other studies confirming the blood pressure-related nature of the disease. We found that a kidney disease was associated with BRVO, independent of age, sex. Previously only three population-based cohort studies have reported on the association between renal dysfunction and retinal vein occlusion (RVO), and the results have been inconsistent. In the Blue Mountains Eye Study, the serum creatinine level was not associated with the development of RVO in a 10-year follow-up period.1

On the other hand, higher serum creatinine levels constituted a significant risk factor for RVO over 15 years of follow-up in the Beaver Dam Eye Study; persons with elevated creatinine levels (≥1.4 mg/dL) were shown to have a 60% higher risk of RVO.2 In our study, kidney disease increased the risk of developing BRVO by 2.2-fold even after adjustment for other confounding factors. These discrepancies in the association between renal dysfunction and RVO may be partly due to differences in study populations, or study methods. One possible reason is that serum creatinine was used as a measure of renal function in both the Blue Mountains Eye Study and the Beaver Dam Eye Study thus, an association in low-risk general populations may be less detectable when serum creatinine is used. After all, our findings provide important evidence of a link between kidney disease and BRVO and suggest that it affects ocular circulation.

Renal dysfunction and RVO are both closely related to hypertension.22 This fact indicates concomitant damage in the retinal and renal vasculature by hypertension. In this study, however, chronic kidney disease (CKD) was an independent risk factor for the development of RVO, even after adjustment for age, sex, and diastolic blood pressure. Similar results were presented by Arakawa et al.4 We also demonstrated that the risk of BRVO is higher in subjects with than that in subjects without kidney disease in both the non-hypertension and the hypertension groups. These findings suggest that kidney disease was an independent risk factor for
the development of BRVO regardless of hypertension status, and that hypertension is not the key factor connecting kidney disease and BRVO. It is well recognized that renal arteriosclerosis and glomerular sclerosis are closely related to systemic atherosclerosis, with the severity of coronary arteriosclerosis. Based on these findings, it is speculated that CKD is a strong risk factor for systemic arteriosclerosis, including renal arteriosclerosis, and that retinal sclerotic arteriolar walls may compress the underlying veins at arteriovenous crossings, leading to reduced blood flow, which in turn could facilitate the development of a thrombus and downstream venous occlusion and thereby of RVO.

**CONCLUSION**

The results from this case-control study provide important evidence of a link between kidney disease and BRVO and suggest that kidney disease affects ocular circulation. Our data also support the potential value of medical treatment of underlying medical condition in preventing occurrence of BRVO.

**REFERENCES**

ABSTRACT:
Aim: The objective of our study is to compare the surgical outcome of different techniques of surgery in patients with esotropia.

Methods: It was an observational case-series, conducted from January 2007 to December 2012. Patients were selected using non-probability purposive sampling. Patients having primary esotropia (deviation 15-75 PD) were included in the study. After informed written consent the patients were selected from the squint clinic of Al-Ibrahim Eye Hospital, Karachi. All the patients underwent detailed ophthalmic examination and underwent either bi medial rectus recession or unilateral medial rectus recession or unilateral medial rectus recession along with lateral rectus resection procedures. Patients were re-evaluated at one week, one month and two months post operatively. Final outcome was considered at the end of two months at which achievement of ≤10 PD of exotropia was considered as a success. Analysis was done using SPSS version 20.0.

Results: In this study, 272 patients were included. Out of these, 130 (47.8%) were male, while rest of the 142 (52.2%) were female. Mean deviation after surgery was 9.73 prism diopters (±12.03). Surgical success as described as residual deviation of less than 10 prism diopters was seen in 202 (74.3%) of the patients, while residual refraction of greater than 10 prism diopters was noted in 44 (16.2%) of the patients. Remaining 26 (9.6%) of the patients had residual refraction of greater than 20 prism diopters and were advised second surgery. The patients, who underwent bi medial rectus recession, 36 (85.71%) had successful surgery with no residual refraction. Similarly, 18 (90%) and 148 (70.47%) had successful surgery with less than 10 prism diopters of residual refraction after unilateral medial rectus recession and unilateral medial rectus recession combined with lateral rectus resection respectively.

Conclusion: Unilateral medial rectus recession, bi medial rectus recession and unilateral medial rectus recession with lateral rectus resection, no matter which procedure is adopted for surgical correction of different forms of esotropias, almost similar success results in terms of residual angle and no of successful surgeries.

Key Words: Esotropia, Surgery, Deviation

INTRODUCTION
Squint is an ocular condition of deviation or misalignment of both or single eye. Its prevalence among children is 2-4 % inward deviation of eyes is called esodeviation which accounts for over half of total ocular deviations. Many causes of esodeviation have been reported including anatomical causes, neurological causes, genetic and accommodative. Amblyopia is among the consequences if esodeviation is not corrected earlier in life. Constant squints have been reported as a main cause of amblyopia by many authors. Early treatment of Amblyopia is very important to prevent permanent impairment in visual acuity it has been recommended by many authors that early surgical correction of esodeviation can prevent or treat amblyopia. Thus specific surgical procedure is needed for perfect surgical alignment of the eyes.

Multiple surgical procedures are used by different surgeons. All have variable success rates. Mostly constant esotropia surgical treatment is based on weakening the medial rectus muscles to avert ultimate loss of cortical shyness of hyperactive convergence. This principle is used for bilateral and unilateral recession of the medial rectus muscles. Similarly another approach is also used in which simultaneous lateral rectus muscle resection is also performed along with unilateral medial rectus recession. Different surgical success rates have been reported by different authors using all these techniques. To our knowledge, no such study has been done in our local setup. The rationale of this study is that we wanted to identify the best technique which should be used in future in our local settings.

The objective of our study is to compare the surgical outcome of different techniques of surgery in patients with constant esotropia.

METHODODOLOGY
It was an observational case-series, conducted from January 2007 to December 2012, at Al Ibrahim Eye Hospital, Karachi. Patients were selected using non-probability purposive sampling. Ethical approval was taken from the ethical committee of Isra Postgraduate Institute of Ophthalmology. Patients having primary esotropia (deviation 15-75 PD) were included in the study, while, patients with history of previous extraocular muscle surgery, paralytic esotropia and any other ocular disease such as congenital cataract, retinal detachment and any other cause of sensory visual deprivation were excluded from the study. After informed written consent the patients were selected from
the squint clinic of Al-Ibrahim Eye Hospital, Karachi, diagnosed and reconfirmed by the consultant ophthalmologist. All the patients underwent detailed ophthalmic examination including best corrected visual acuity (BCVA), cycloplegic refraction, fundoscopy and squint assessment including measurement of squint using prism cover technique. Patients with constant esotropia underwent either bi medial rectus recession or unilateral medial rectus recession or unilateral medial rectus recession along with lateral rectus resection procedures. Surgery was done under local anesthesia in adults but children were operated under general anesthesia.

Patients were re-evaluated at one week, one month and two months post operatively. Final outcome was considered at the end of two months at which achievement of ≤10 PD of exotropia was considered as a success. Data was entered on a preformed proforma. Analysis was done using SPSS version 20.0. Qualitative data such as gender and success were presented by their frequencies along with percentages. The continuous variables such as age and degree of esotropia in prism diopters before and after surgery was presented as mean ±SD. Stratification was done with regards to age, gender, degree of esotropia (in prism diopter) and the types of surgical procedure adopted. Chi square test will be used for the analysis of the data. P value of less than 0.05 will be considered as significant.

RESULTS

In this study, 272 patients were included. Out of these, 130 (47.8%) were male, while rest of the 142 (52.2%) were female. Mean age of the patients was 12.19 years (±8.813), with minimum age of 1 year and maximum age of 43 years. Most of the patients 216 (79.4%) had constant esotropias. Essential /infantile esotropia was present in 32 (11.8%) of the patients. Partially accommodative esotropia was present in 24 (8.8%) of patients. Mean angle of deviation was 53.71 prism diopters (±17.18). Minimum angle of deviation was 20 prism diopters while the maximum angle was 90 prism diopters. Out of these 272 patients, 210 (77.2%) of patients underwent medial rectus recession and lateral rectus resection in a one eye. Bilateral medial rectus recession was done in 42 (15.4 %) of patients and unilateral medial rectus recession was done in 20 (7.4%) of patients. Mean deviation after surgery was 9.73 prism diopters (±12.03). Minimum deviation after surgery was 10 prism diopters while maximum deviation after surgery was 60 prism diopters. Mean deviations with respect to surgical treatments are shown in table-1. Surgical success as described as residual deviation of less than 10 prism diopters was seen in 202 (74.3%) of the patients, while residual refraction of greater than 10 prism diopters was noted in 44 (16.2%) of the patients. Remaining 26(9.6%) of the patients had residual refraction of greater than 20 prism diopters and were advised sec-

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DISCUSSION

There has been extreme variability of individual response to esotropia extra-ocular muscle surgery. Although, comparison of the effectiveness to different surgical techniques is very difficult in statistical analysis. Nevertheless, the comparison of effectiveness among the surgical techniques fails to show any significant statistically significant differences. Although bimedial rectus recession has been slightly superior over residual deviation compared to the other techniques. Many other researchers reported similar results separately in their studies. one such study was done by Willshaw et al, showed in forty-six children bilateral medial rectus recession to correct large angle esotropia successfully.1 Grint et al showed success of unilateral medial rectus recession for moderate angle esotropias. In this study, sixteen patients with moderate angle esotropia of 30 to 35 prism diopters were treated with a unilateral medial rectus muscle recession of 6 or 6.5 mm, thirteen of sixteen patients (80%) were straight postoperatively or had 12 prism diopters or less of esotropia.2

In another study, they compared different surgical procedures for the treatment of children or adults with esotropia. They also showed the success of medial rectus recession procedures either performed unilaterally or bilaterally.3 Similarly, successful results have been shown when simultaneous medial rectus recession is performed along with lateral rectus resection.4 Like any other study our study also had many limitations. One of the main limitation was that it was performed in a single center thus patients belonging to single ethnic background were included.

CONCLUSION

Unilateral medial rectus recession, bi medial rectus recession and unilateral medial rectus recession with lateral rectus resection, no matter which procedure is adopted for surgical correction of constant esotropia, almost similar success results in terms of residual angle and number of successful surgeries.

REFERENCES

A Study of Disease Pattern in Oculoplasty Department of a Tertiary Care Hospital, in KPK

Mohammad Idris FCPS1, Muhammad Junaid Sethi FCPS, FRCS2, Mohammad Alam FCPS3, Sadia Ayaz MBBS4, Zubair ullah FCPS5

ABSTRACT

Objective: To evaluate the pattern of eyelid diseases as observed in oculoplasty OPD for surgical management in a tertiary care hospital of KPK.

Material and Methods: A prospective study of interventional case series was carried out at Department of Ophthalmology, Govt Lady Reading Hospital, Peshawar from July 2011 to Jan 2013. We studied 450 cases from the outdoor department for surgical management. Nonprobability convenience sampling technique was used. Data was collected on special proforma and was analyzed with the help of SPSS Version16.

Results: The study comprised 450 cases of eyelid trauma, age ranged between 01 to 40 years (Mean = 25 years). About 47.2% patients were between age of 21 and 40 years. The most common cause of eyelid lesion presented was eyelid trauma (36.2%). Tumors (23.3%), chronic dacryocystitis (12%), ptosis (14%), entropion (8.6%) and ectropion (4.2%).

Conclusion: Commonest presentation of eyelid lesion in our setup is eyelid trauma. Benign tumors are common than malignant and have better cosmetic outcome. Late presentation is common in malignant tumors. Good outcome was seen in young patients. Lid trauma and malignant eyelid tumors need special care while operating for surgical reconstruction because these are the challenging disorders to be repaired as early as possible.

Key words: eyelid diseases, surgical outcome, eyelid trauma.

INTRODUCTION

There are different oculoplastic conditions we commonly deal with, i.e., trauma, tumors, blephroptosis, blocked nasolacrimal duct, entropion and ectropion are the key conditions visiting oculoplasty OPD. There are different causes of eyelid trauma, road traffic accidents (RTA) are the most frequent cause; other causes include domestic violence, accidental fall and sports like activities. Bomb blast injuries (BBI) though rare but comparatively more common in our part of the world. Our unit is one of easy approachable and an important center to receive maximum trauma cases. Injuries of the eye lid ranges from simple lacerations to complex trauma involving lid margin, lacrimal apparatus and orbital bone and intra-orbital structures admitted for surgical reconstruction.

Blephroptosis of the upper eyelid is also a commonest condition among patients presenting for oculoplastic surgery. Although there are many types of ptosis, the two most frequent clinical cases are simple congenital ptosis in young patients and senile ptosis in older patients. The examination is important part of the diagnosis to distinguish these from other more frequent types of ptosis, such as neurogenic, myogenic and post-traumatic. The latter cases may require specific therapeutic strategies which can usually be corrected surgically.

In the orbital region the variety of tumors is so vast that even an expert oculoplastic surgeon may be deceived. The various tumors may be classified as benign, precancerous and malignant. Approximately 5-10% of all skin cancers occur in the eyelids and basal cell carcinoma being the commonest malignant eyelid tumor, followed by squamous cell carcinoma, sebaceous gland carcinoma and malignant melanoma. Malignant neoplasms represent the leading cause of plastic reconstruction in orbital region, followed by cicatricial retraction, post-traumatic loss of tissue, congenital colobomas.

Common cause of epiphora is blocked nasolacrimal duct. External dacryocystorhinostomy (DCR) is considered the gold standard for the treatment of lacrimal duct stenoses. Ectropion, entropion and trichiasis eyelid pathologies are characterized by common symptoms (redness, excessive tearing and irritation of the eye) and by altered balance of the anterior and posterior lamellae of the eyelids. They involve more frequently the inferior eyelid and the therapy is mainly surgical.

METHODOLODY

Objective: To evaluate pattern of eyelid diseases in oculoplasty OPD for surgical management in a tertiary care hospital of KPK.
**Study Design:** prospective, interventional case series.

**Place and duration:** The study was conducted at the Department of Ophthalmology, Govt Lady Reading Hospital, Peshawar from July 2011 to Jan 2013.

**Sampling Technique:** Convenience (non-probability sampling).

**Sample size:** 450 patients having eyelid lesions presented to us for surgical management.

**Data Collection Procedures:** Patients were selected from the Ophthalmology Out Patients Department of the Govt Lady Reading Hospital, Peshawar according to selection criteria. Patients were admitted to the Ophthalmology Department of the hospital. Diagnosis was based on history and routine ophthalmic examination. Detail assessment of eyelid as well as of face, neck and intraocular structures were made. Written consent of all the patients included in the study was taken after fully explaining the procedure and purpose of the study to the patients.

**Follow-ups:** Patients had a follow-up on day one, at 4 month, 6 months and then last follow up at 1 year after surgery.

**Data analysis:** The data were analyzed by software SPSS (version 10.0). Frequencies and percentages were calculated for the type of lesion, gender and age distribution.

**RESULTS**

We evaluated 450 patients, admitted for surgery from the oculoplasty OPD for surgical management, from July 2011 to Jan 2013. Most of our patients were female with the exception of trauma and blephroptosis, which were more common in male (table 1). Age was divided into three main groups in years for ease of description. Majority of the patients were adult. 165 (36.66%) patients were in the age ranging from 1 to 20 years. 105 (23.35%) followed by trauma (37.2%) and blephroptosis. Ectropion were seen in 19(4.2%) cases and common cause was senile lid laxity. We received 09 (2%) cases of entropion.

<table>
<thead>
<tr>
<th>Type of Oculoplasty Disease</th>
<th>N</th>
<th>Gender</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma</td>
<td>163</td>
<td>Male</td>
<td>107</td>
<td>65.6</td>
</tr>
<tr>
<td>Tumors</td>
<td>105</td>
<td>Male</td>
<td>51</td>
<td>48.5</td>
</tr>
<tr>
<td>blephroptosis</td>
<td>63</td>
<td>Female</td>
<td>21</td>
<td>67.7</td>
</tr>
<tr>
<td>CDC</td>
<td>54</td>
<td>Male</td>
<td>22</td>
<td>40.7</td>
</tr>
<tr>
<td>Entropion</td>
<td>39</td>
<td>Male</td>
<td>19</td>
<td>48.7</td>
</tr>
<tr>
<td>Ectropion</td>
<td>19</td>
<td>Male</td>
<td>07</td>
<td>36.8</td>
</tr>
<tr>
<td>Empty socket</td>
<td>09</td>
<td>Male</td>
<td>03</td>
<td>33.3</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Oculoplasty is an important and specialized field of ophthalmology. Gautam P et al reported ocular tumors as commonest reasons for admission for surgery (39.3%) followed by trauma (37.2%). In our study; trauma was the commonest reason for surgery of patients visiting oculoplasty OPD. Due to increasing incidence of trauma and different sorts of violence, lid injuries are on the rise among the trauma cases of eyelids, RTA are commonest reason for admission in hospital.
for repair and reconstruction of defects, most of these injuries are accompanied with face involvement. Other important causes of eyelid trauma are violence sports and BBI. BBI are common in our part of the world.

Tumors were the second most important indication for admission for surgery. Benign tumors of the eyelids are common than malignant ones, its prognosis and surgical cosmetic outcome was better. Commonest tumor in this regard was lid dermoid. Others include cyst and chalazion. Among malignant tumors, basal cell carcinoma (BCC) was the commonest tumor and we received most of the BCCs at quite advanced stages. Men and women are equally affected. In our study malignancy was more in female patients. Most of such patients were belonging to far off areas of our province, the surgical and cosmetic results of these tumors were unsatisfactory. Those involving the medial canthus have the poor prognosis and the results of surgery. One patient died due to very advanced squamous cell carcinoma who presented with proptosis. Patients presented with epiphora were mostly patients around 40 and above. We did sac wash and mostly we found these patients had blocked nasolacrimal duct. Blepharoptosis patients were mostly young as commonest cause of ptosis is congenital. In our study congenital ptosis was the most common cause followed by traumatic blepharoptosis. We admitted entropion for surgical correction and most common presenting was older age group. According to different studies, it is common in old age also, in our study, entropion was mostly because of orbicularis override. For entropion repair, and we did Weiss and Quickert procedure, according to clinical assessment. Recurrence rate was less with Quickert procedure. Ectropion was seen and commonest type was cicatrizing. Senile ectropion was due to laxity of lower lid retractors. We received 09 cases of empty socket which were mostly operated for secondary ball implant and conformer was placed to form fornix. Commonest reason for empty socket was traumatic globe rupture. Results of surgery were mostly good.

CONCLUSION

Commonest presentation of eyelid disease in our setup is eyelid trauma. Benign tumors are common than malignant and have better cosmetic outcome. Late presentation is common in malignant tumors. Good outcome was seen in young patients. Lid trauma and malignant lid tumors need special care while operating for surgical reconstruction because they are challenging cases. Trauma cases should be repaired as early as possible. Early referral and timely repair offer the best results and to educate the masses regarding preventive measures are the best means to reduce its incidence.

REFERENCES

14. Knani L, Romdhane O, Ben Rayana N, Majhoub H, Ben Hadj Hamida F.
17. Eyelid benign and malignant tumors: issues in classification, excision and reconstruction.
INTRODUCTION

Watering and discharge due to blockage in the distal part of the nasolacrimal apparatus is the major indication of external DCR. This procedure was first performed by Adei Toti and is still the gold standard against which other methods are compared.\(^1\)\(^,\)\(^2\)

The idea of anastomosis of the flaps of the lacrimal sac and nasal mucosa was first introduced by Dupuy Dutemps, Bourguet’s and Ohm’s.\(^3\)\(^,\)\(^4\) Iliff’s suggestion of placing a rubber catheter into the sac\(^5\) and Older’s suggestion of using a silicon tube\(^6\). Success rate of DCR has been found to be 90%.\(^7\) 10% of cases however, still fail with persistent excessive tearing and inability to irrigate\(^8\). The two commonest causes of DCR failure are obstruction of the common canaliculus and closure of the osteotomy site.\(^7\) Anti-proliferative agents like MMC are used to prevent fibrous tissue growth and scarring. This overall decreases the failure rate of DCR.\(^9\) Success rates achieved with the adjunctive use of MMC in various studies are 95.5%, 95% and 97.7%\(^7,\)\(^9\) and those with silicon tube are 83% and 97.5%.\(^10,\)\(^11\) The aim of this study is to compare the surgical outcome of both these procedures.

MATERIAL AND METHODS

The study was carried out in Eye A Ward Ophthalmology Department Khyber Teaching Hospital, Peshawar from 1\(^\text{st}\) January 2011 to 30\(^\text{th}\) June 2012. Patients were followed post-operatively from July 2012 to December 2012. 100 patients of both gender and belonging to any age group presenting to the OPD with complaints of watering / epiphora and fulfilling the inclusion criteria were subjected to the planned ocular examination and investigation.

Inclusion criteria was complete NLD obstruction and chronic Dacryocystitis. The patients were randomly divided into 2 groups, each group consisting of 50 patients.

Exclusion criteria included failed DCR, children less than 10 years of age, acute on chronic dacryocystitis, and patients who were unable to follow up for six months. A specific performa was maintained for all the registered patients to assess the post-operative results. The patients were evaluated pre-operatively via history and examination. A detailed history regarding watering, swelling near the medial canthus, mucopurulent discharge was obtained. History of hypertension and any blood disorder were also taken. Ocular as well as nasal examination was done in all patients. Ocular examination was done to assess for Entropion, Ectropion,
Trichiasis or Blepharitis, Punctal malposition, stenosis, agenesis or accessory puncta, canalicularitis, conjunctivitis, keratitis or any fistulae near medial canthus. Regurgitation test was performed and reflux of mucus or mucopurulent material through the canalicular and puncta was noted. Nasal cavity was examined in all patients to exclude any nasal disease and patients with nasal problem were referred to otolaryngologist for treatment before performing DCR surgery. Preoperatively patients were investigated for any bleeding diatheses via blood complete picture, blood sugar levels, bleeding and clotting time, HBsAg and anti-HCV.

**Surgical Technique:** DCR was performed under local or general anesthesia as per patient’s need or request. Informed written consent was taken after thorough explanation of the procedure, its risks and benefits to the patient. The nasal mucosa was anesthesized and vasoconstricted by packing the respective nasal cavity of all patients with ribbon gauze soaked in 4% xylocaine and adrenaline (1:100,000). After anesthesia and draping, a vertical straight skin incision 8 mm away from the medial canthus was made to expose the anterior lacrimal crest. Four traction sutures with 4/0 silk were made through the skin to expose the area of surgery. The periosteum over the anterior lacrimal crest was elevated towards the bridge of the nose for about 5 – 6 mm. The lacrimal fossa was exposed. The suture between the lacrimal bone and frontal process of maxilla lying in the posterior half of fossa was identified and broken. An oval osteotomy, approximately 12 x 10 mm in size, with smooth edges and round corners, was created. Small anterior and larger posterior flaps of sac were made. An H-shaped incision was made in the nasal mucosa forming a larger anterior and smaller posterior flap.

In the DCR with MMC group, a piece of gauze soaked with 0.2 mg/ml MMC. It was then placed over the anastomosed posterior flaps and osteotomy site for 5 minutes and washed with normal saline thoroughly. Meanwhile the anterior nasal and lacrimal sac flaps were anastomosed with 2 interrupted 6/0 vicryl sutures on short ½ circle needles. Traction sutures were then removed and the bridge of flaps sutured to the muscle layer with 1-2 suture of 6/0 vicryl to avoid collapse of bridge.

The periosteum with orbicularis oculi and skin wounds were closed in separate layers with interrupted 6/0 sutures. Steps for DCR with intubation were identical to the DCR with MMC up to the point of fashioning of the mucosal flaps. A fine silicon tube attached to malleable metal bodkins was then introduced through both upper and lower canalliculi and brought out through DCR skin incision. After passing through the punctum, the tube ends were passed into the nose and out through the nostril. The tube loops were then tied together and left in the nasal cavity near the external nostril without fixing it to the nasal wall. Pressure bandage and nasal packing with gauze soaked in antibiotic ointment was done in all patients to control bleeding post-operatively. Post-operatively all patients were kept in ward for 24 hours. The nasal pack and bandage were removed on the following day. Skin sutures were removed after one week. All patients were kept on oral broad-spectrum systemic antibiotics, non-steroidal anti-inflammatory medicines for one week to prevent post-operative soft tissue infection. They were also kept on topical moxifloxacin eye drops, QID for one month and polymyxin B, bacitracin eye ointment, OD for local application over the wound.

**Follow-up Protocol:** Follow-up was maintained for 6 months for the evaluation of abnormal overflow of tears and the patency of the lacrimal drainage system by syringing. After discharging from the ward, 1st follow up was done after one week, and then at 1st, 3rd and 6th month post-operatively. Skin sutures were removed on first postoperative week. Outcome of the surgery was measured on the basis of these subjective and objective findings. The surgery was considered successful if the patient had no tearing or significant improvement in tearing in a patient with patent lacrimal drainage system at the last follow-up. Patients having persistent epiphora with non-patent LDS were classified as failed DCR. At the end of follow-up period of 6 months results of DCR with MMC and DCR with intubation were compiled and compared with national and international results.

**RESULTS**

A total of 100 patients of nasolacrimal duct obstruction were included in our study. Patients were equally and randomly divided into two groups. In group A, patients were treated with Mitomycin C and in-group B, patients were treated with intubations. Age distribution of the patients is presented in Figure I. The average age of the patients was 30.68 ± 5.6 Years.

Out of 100 cases, 41 (41%) were male and 59 (59%) were female as presented in Table II. Proportion of gender difference was also not significant between groups (p = 0.214). Out of 50 patients in group A, 46 (92%) patients remained symptom free whereas, 4 (8%) showed failed syringing with positive regurgitation test at the end of 6 months. However, out of 50 patients in-group B, 44 (88%) patients remained symptom free and 6 (12%) showed failed syringing with positive regurgitation test at the end of 6 months was shown in Figure No, III. The rate of surgical outcome was not statistically significant between the groups.
DISCUSSION

As compared to other procedures, external DCR is the gold standard procedure for relief of NLD obstruction.\(^2\) Success rate of DCR has been found to be 90%\(^1\). However, 10% of cases still failed with persistent excessive tearing and inability to irrigate the lacrimal drainage system.\(^7\) The two commonest causes of DCR failure are obstruction of the common canaliculus and closure of the osteotomy site.\(^15\)\(^-\)\(^17\) Fibrous tissue growth, scarring and granulation tissue formation during the healing process decrease the created surface area of the osteotomy site, leading to surgical failure.\(^7\) Thus, if we can reduce fibrous proliferation at the osteotomy site and at the anastomosed flaps, the success rate of DCRs may become much higher.\(^7\) In our study the overall success rate of DCR with MMC and intubations was 90% while 10% of cases still failed with persistent excessive tearing and inability to irrigate. The assessment criteria included symptomatic relief of epiphora and syringing at 1 st day, 1st week and then at 3rd and 6th month.

In our study we attained a success rate of 92% and a failure rate of 8% in the DCR with intubation group. 46 patients were labeled as successful on the basis of absence of epiphora confirmed by positive syringing. Four patients however revealed persistent epiphora confirmed by failed syringing. Various other studies have previously been conducted to assess the surgical outcome of DCR with silicon tube. Zaman M et al showed a success rate of 97.5%,\(^10\) whereas, Ilff reported 90%\(^2\) and Tarbat and Custer reported 95% success results.\(^12\) In a comparative study Hussain et al reported 94.7% success results in intubated series.\(^18\) Similarly Advani et al reported a success rate of 95% in intubated cases.\(^19\) A study by Y M Delaney and R Khooshabeh showed that patent DCR system to irrigation and a positive dye test was achieved in 90% of procedures.\(^20\) Nawaz et al were successful by 93.33%.\(^11\) The DCR with MMC group showed a success rate of 88% and failure rate of 12%. 44 patients remained symptom free. This was confirmed on syringing. Six patients however revealed persistence of epiphora confirmed on failed syringing. From amongst the various studies previously conducted to assess the surgical outcome of DCR with MMC, Shu L Liao et al showed 95.5% success rate,\(^7\) Yildirim C et al gave a success rate of 95% and Rahman A et al achieved a success rate of 97.77%\(^8\).\(^9\) Kao et al showed 100% success with MMC in maintaining patency and a larger osteotomy site.\(^7\) You in 2001, Roozitalab in 2004 and Akhund in 2005 applied Mitomycin-C over the anastomosed flaps and achieved a success rate of 100%, 90.5% and 99%; respectively.\(^21\)\(^-\)\(^22\) Mitomycin C, an anticancer agent isolated from Streptomyces caespitosus, has the ability to significantly suppress fibrosis and vascular growth. Application of MMC over the osteotomy site and the flaps reduces the fibrous adhesion between the osteotomy site and the nasal septum as well as inhibits scarring around the opening of the common canaliculus.\(^7\) In our study most of the patients fell between 40-50 years of age. In the study by Zaman et al the majority of patients were between 41 and 60 years\(^10\) whereas, that in the study by Rahman A et al were between 41 and 50 years of age.\(^9\) This shows that the commonest age group to suffer from NLDB range between 30 and 60 years of age.

In our study there were 59 (59%) females and 41 (41%) males. It is known that chronic dacryocystitis most commonly affects the women of post-menopausal age.\(^23\) This female predominance is possibly due to the narrow lumens of bony lacrimal canal and NLD in women, osteoporosis, hormonal changes and a heightened immune response.\(^24\) In the study by Zaman et al there were 62% females,\(^10\) by Rahman A et al there were 76% females,\(^7\) by Nawaz et al. there were 85% females,\(^11\) by Ali A et al. there were 79% females.\(^25\) We found from our study that both silicon tube and MMC are equal in yielding successful results with DCR. The difference...
in the results achieved is not statistically significant for surgical outcome as well as for gender and thereby, both the adjuncts namely MMC and Silicon tube can be advised to patients undergoing DCR. However, the use of MMC is cost and time effective and the patient does not have to come for removal of the tube, neither does the patient have to suffer any irritation from the tube. This study is the first of its type, to compare the surgical outcome of the two adjuncts used in DCR, namely, MMC and Silicone tube. We suggest that further studies be done to confirm these results.

CONCLUSION

Our study showed that there is no significant difference between the success results achieved with these two comparative studies. Therefore, both the adjuncts can be used with DCR. However, MMC is more cost and time effective. The surgical outcome is totally depend on surgeon experience.

REFERENCES

Morphological Appearance of Retinal Breaks associated with or without Rhexomatogenous Retinal Detachments presenting in Ophthalmology Department of Hayatabad Medical Complex, Peshawar

Afzal Qadir1, Umer Khan2, Lal Mohammad3, Muhammad Kashif Kamran4

ABSTRACT
Objective: To evaluate the morphological appearance of retinal breaks associated with or without rhegmatogenous retinal detachments in our population.

Material and Method: This observational study was conducted at the teaching hospital Khyber institute of Ophthalmic Medical Sciences Hayatabad Medical Complex, Peshawar Khyber Pakhtoonkhwa from January 2012 to December 2012. A total number of 227 eyes were diagnosed as retinal breaks with or without rhegmatogenous retinal detachments. Retinal diagrams were drawn in all these cases. Detail history of ocular and systemic diseases, age, gender, and duration of symptoms were noted. Detailed ocular and systemic examinations were performed, anterior and posterior segment with direct and indirect ophthalmoscope. To record the type, size, location and number of breaks, visual acuity, intraocular pressure, refraction, predisposing factors was recorded.

Results: The most common type of breaks was horse shoe shape tears with vitreous traction (52.0%) followed by retinal holes (25.0%), dialysis (15.0%) and giant retinal tears (05.0%) of cases were observed. The most commonly located tear was superior-temporal in (65.0%) of cases, followed by superior-nasal in (20.0%) of the eyes. Age ranges from 20 to 80 years. 80.0% of the cases were male. Bilateral rhegmatogenous retinal detachments were observed only with 2.0% of cases. No other identifiable risk factor for retinal detachment was found in 25% of cases.

Conclusion: The horse shoe shape tears and retinal holes were the most common types of retinal breaks in our setup and the common location of the break was superior-temporal. This will help us in the management of vitreo-retinal surgery.

Key words: Retinal breaks, tear, holes, retinal detachment, retinal degeneration, dialysis, giant retinal tear.

INTRODUCTION
Retinal break or breaks development is closely related to changes in the fibrillar structure of the aging vitreous culminating in posterior vitreous detachment with regions of persistent and tangential vitreoretinal traction predisposing to retinal tear formation leading to retinal detachment. Rhegmatogenous retinal detachment is common in all forms of retinal detachments and potentially blinding condition.1 A complex interplay of factors such as weakening of vitreoretinal adhesion, posterior migration of the vitreous base, and molecular changes at the vitreoretinal interface are important in predisposing to focal areas of vitreoretinal traction precipitating rhegmatogenous retinal detachment. Once formed, the passage of liquefied vitreous through a retinal break may overwhelm normal neurosensory-retinal pigment epithelium adhesion perpetuating and extending detachment and causing visual loss. Such condition usually occurs after trauma, after intra-ocular surgery, in patients with myopia or with peripheral degenerative changes especially in lattice degenerative, and acute posterior vitreous detachment.2,3 And some time we found retinal break without identifiable risk factors. Clear media is necessary for the examination to diagnose and for the treatment purpose. Corneal opacity and lens status, aphakia and pseudophakia are known risk factors for developing retinal detachment.4 Surgical approach also depends upon the status of the lens. An epidemiological study suggests that heavy manual lifting at work may also lead to develop retinal detachment.5

Retinal detachment is an ophtalmic emergency. Presenting with sign and symptoms of floaters, photopsia and field loss. Retinal detachment depends upon the type, size and location of the break or breaks, whereas the visual acuity outcome depends upon the macular involvement and duration of the retinal detachment. Better Visual prognosis and physiological outcomes are also expected if anatomy is restored within six weeks of the retinal detachment. Delay in the surgical interventions is due to unawareness of the patients, delay in access to the vitreo-retinal facilities, patients overload over the department, less number of specialized surgeon in the field of vitro-retina. Due to pre retinal, intra-retinal, and sub-retinal proliferation lead to fibrosis known as proliferative vitro-retinopathy (PVR).

The purpose of this study is to look for morphological appearance of the break or breaks, which will help us in the management of retinal detachment.

METHOD AND MATERIAL
227 eyes with retinal break were selected in this
Morphological Appearance of Retinal Breaks associated with or without Rhegmatogenous study. All patients were attended at the department of vitreo-retina Khyber Institute of Ophthalmic Medical Sciences, Hayatabad Medical Complex, Peshawar. Inclusion criteria involved all eyes with retinal breaks, within the age group of 20 – 80 years of age. Those patients who had past history of retinal detachment surgery and media opacity were excluded from the study. All patients were properly examined with documentation and detailed history of ocular and systemic diseases and the previous management were taken into account. Speciallily predisposing factors (history of previous intraocular surgery, trauma, family history of retinal detachment, detachment in the fellow eye, previous use of glasses, myopic degeneration) lens status (phakia, pseudophakic or aphakic) history of YAG laser capsulotomy, age, gender, profession and duration of sign and symptoms (floaters, flashes of light, field loss). Detailed examination of the anterior and with well dilated pupil, posterior segment examination with indentation was performed with help of Schepen binocular indirect ophthalmoscopy in smaller magnification which gives better overall view of the fundus to obtain stereoscopic view showing sharper contrast between features such like holes and hemorrhage. Greater magnification was obtained with slit lamp biomicroscopy or direct ophthalmoscope where doubtful lesions were discovered. The types and numbers break or breaks were noted (opercule, horse-shoe shape tear hole, perforated lattice, retinal dialysis or giant retinal tear) position or location of the break was noted (anterior to the equator, equatorial, posterior to the equator) with quadrant and size of the break. Retinal detachment was analyzed with respect to macular status (macula off/on) extent (number of quadrant involved) location (which quadrant were involved) and to draw the retinal diagram. Visual acuity, intraocular pressure, refraction were recorded. Data was entered in statistical package for social sciences (SPSS) version 15.

RESULTS
Total no of patients were 227. 182 (80.17%) of cases were male. Age ranges from 20 to 80 years (Figure-1). Sixty-three (27.75%) patients had presented with retinal break or breaks without retinal detachment. Thirty-five (15.41%) of patients had unilateral retinal break or breaks without retinal detachment. Twenty-eight (12.0%) of patients had bilateral retinal break or breaks without retinal detachment. One-hundred and sixty-four (72.24%) patients presented with retinal break or breaks with retinal detachment (Table-1). The most common type of breaks was horse shoe shape tears with vitreous traction in 118 (52.0%) of cases followed by retinal holes in 57 (25.0%) of patients, dialysis in 34 (15.0%) cases and giant retinal tears in 11 (5.0%) cases were observed (Table-2). The most commonly located tear was superior-temporal in 148 (65.0%), followed by superior-nasal in 45 (20.0%) patients. Twenty-three (10.0%) patients had inferio-nasal and 11 (5.0%) patients had inferio-temporal retinal break or breaks (Table-3). Bilateral rhegmatogenous retinal detachments were observed only with 6 (2.60%) of cases. No identifiable risk factor was found in 57 (25.0%) cases. Ninety eight (43.0%) patients had single retinal break and 152 (67.0%) patients had two or more than two retinal breaks. Most of the patient had equatorial retinal breaks followed by pre-equatorial breaks.

The most common risk factor in patient with rhegmatogenous retinal detachment was trauma followed by intraocular surgeries, refractive error (high myopia), peripheral lattice degeneration and posterior vitreous detachment (PVD). Patients were presented within 24 hours to six months after trauma. Common presentation was at first month after trauma.

Table-1: Breaks and retinal detachment

<table>
<thead>
<tr>
<th>Breaks and Retinal detachment</th>
<th>Numbers of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaks without RD</td>
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<tr>
<td>unilateral</td>
<td>35 (15.41)</td>
</tr>
<tr>
<td>bilateral</td>
<td>28 (12)</td>
</tr>
<tr>
<td>Breaks with RD</td>
<td>164 (72.24)</td>
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Table-2: Types of Break

<table>
<thead>
<tr>
<th>Types of Breaks</th>
<th>Numbers of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse shoe shape</td>
<td>118 (52)</td>
</tr>
<tr>
<td>Retinal holes</td>
<td>57 (25)</td>
</tr>
<tr>
<td>Retinal Dialysis</td>
<td>34 (15)</td>
</tr>
<tr>
<td>Giant retinal tears</td>
<td>11 (5)</td>
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Table-3: Location of Break

<table>
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</tr>
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<tbody>
<tr>
<td>Superio- temporal</td>
<td>148 (65)</td>
</tr>
<tr>
<td>Superio-nasal</td>
<td>45 (20)</td>
</tr>
<tr>
<td>Inferio-temporal</td>
<td>11 (5)</td>
</tr>
<tr>
<td>Inferio-nasal</td>
<td>23 (10)</td>
</tr>
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</table>

DISCUSSION
In this series, 98 (43.0%) had a single retinal break and 152 (67.0%) of eyes had two or more than two breaks. In comparisons of 38.3% one break and 29.9% eyes two or more breaks were present6,7. The most common type were horse shoe shaped tear with vitreous traction in 118 (52.0%) of cases as compare to J H Muhammad et
al had also showed the most common type which were (42.1%). As well as Williamson TH et al also showed high frequency of U shape tears. Giant retinal tears were more common in patients with high myopia.

Common site of retinal break or breaks were superior-temporal in 148 (65.0%), Followed by superior-nasal in 45 (20.0%) patients. Twenty three (10.0%) patients had infero-nasal and 11 (5.0%) patients had infero-temporal retinal break or breaks as compares with Arevalo JF et al that retinal breaks were occurred in the temporal quadrants in (71.4%) of cases, (31.0%) infero-temporally and (28.0%) were located nasally. While W G Eeverett et al showed more breaks at (70.9%) temporal hemi-quadrant followed by (29.1%) nasal hemi-quadrant.

Identifiable risk factors were observed in (75.0%) of cases. The most common risk factor in patient with retinal break or breaks was trauma, followed by intraocular surgeries, refractive error (high myopia), Peripheral lattice degeneration, posterior vitreous detachment (PVD) as compare with Gariano et al. Burton reported that patients with lattice degeneration and low to moderate degrees of myopia tend to develop detachment between 40 and 60 years of age caused by premature posterior vitreous separation and tractional tears. Valsalva manuicure including weightlifting lead to rhegmatogenous retinal detachment was also reported by Dickerman. No identifiable risk factor for retinal break or breaks was found in 57 (25.0%) cases, as compared to 26.7% by Jamil et al.

Presentation of the patient with sign and symptoms with retinal break or breaks with retinal detachment caused by trauma were presented earlier within first two weeks. Then the other risk factors which lead to delay presentation because of poverty, lack of education, and limited clinical resources are likely contributory factors. Sub-total or total detachment was the most common presentation. Similar presentation of total rhegmatogenous retinal detachment by Rajendran. Most of the patient had macula off at the time of presentation as by jamil. Sanaullah Jan reported 95.0% macula-off detachments in his study. While Adhi had found macula-off in 80.0% of his cases.

Bilateral rhegmatogenous retinal detachments were observed only with 6 (2.60%) of our cases. As compared to Jamil, age of presentation ranges from 20 to 80 years. 182 (80.17%) of cases were male. Male gender being more prone to trauma, due to outdoor activity and intraocular surgery were performed mainly in male patients in our society (Pakistan) as well as shown by Lewallen.

CONCLUSION

Rhegmatogenous retinal detachment is common in patient with ocular trauma, intraocular surgery, lattice degeneration and myopia. They need proper attention regarding fundus examination with fully dilated pupil to look for the peripheral retina, an educated patient report earlier regarding his retinal detachment symptoms direct to vitre-retinal surgeon.

REFERENCES

INTRODUCTION

After the introduction of excimer lasers for the correction of refractive errors the surgical advancements are continuously struggling to achieve the best visual outcomes with minimal complications. Photorefractive keratectomy was a standard procedure in early 90s\(^1\)\(^2\) for refractive surgery patients. Soon this procedure lost its popularity due to severe pain and corneal haze. Laser In-Situ-Keratomelusis (LASIK)\(^4\) which involves the ablation to deeper stromal tissues after the creation of corneal flap was commonly practiced, however the flap related complications like free caps, button holes, thin flaps etc and late corneal ectasia were commonly reported.\(^5\)\(^6\)\(^7\) Laser subepithelial keratectomy (lasek) was a serious effort to modify the surface treatments in order to control the drawbacks of both photo refractive keratectomy and Laser-in-situ keratectomy.\(^8\)\(^9\)

After experimental studies on monkeys for at least nine years, the study of Excimer laser photo keratectomy and Laser-in-situ keratomelusis (LASIK) for the treatment of myopia were studied. Parameters for study included Preoperative uncorrected visual acuity (UCVA), best corrected visual acuity (BCVA), Mitomycin C concentration and exposure time, pain, corneal haze and epithelial healing.

Results Mean baseline spherical equivalent refraction was ranged -3.75 to -12.50\(^+\) 3.50 diopters. Pre operative best corrected vision (BCVA) was 6/9 or better in 46(71.8%) eyes and 12 (18.7%) had 6/9 to 6/12 whereas 6 (9.3%) eyes had visual acuity of less then 6/12. Mean spherical equivalent refraction after lasek surgery was + 0.75 diopter. At last follow up post laser un -corrected visual acuity (UCVA) was 6/9 or better in 52 (81.2%) eyes, 8 (12%) eyes had 6/9 to 6/12 while 4 (6.4%) eyes had visual acuity of 6/12 or worse. Complete epithelialization and removal of bandage contact lens took place in 4.75 \(-\) 2.89 days (range was 3 -8 days). At the last follow up visit of patients 50 (78%) eyes had clear cornea and Grade I haze developed in 7 (10.9%) eyes whereas Grade II haze was seen in only 2 eyes (3.1%), none of the eyes developed grade III or IV haze.

Conclusions: Laser sub epithelial keratomelusis with intra operative application of 0.02 \% mitomycin c was effective and safe procedure which resulted in excellent visual outcomes with few complications.

Key words: Myopia, Astigmatism, Laser sub epitelial keratomelusis, Mitomycin C
vitreo retinal diseases were excluded. Similarly patients with systemic diseases like diabetes mellitus, hypertension, rheumatoid arthritis and pregnant and lactating mothers were excluded from the study. Patients wearing soft contact lenses advised to leave at least 1 week and hard contact lenses for 2 weeks prior to the surgery.

Procedure: The eyes were anesthetized with proparacine hydrochloride 0.5 % eye drops instilled every 5 minutes before the procedure for four to five times, the area is sterilized with 10% povidine iodine solution, and properly draped lid speculum was applied and marks were applied on corneal surface with Gentian violet, area washed with ringer lactate solution, a trephine with deep well of 7 to 8 mm is centrally placed on the cornea, 20% alcohol solution is placed for 20 seconds, later on it is absorbed with Merocel sponge followed by downward pressure applied with slight rotation to create an incision in to the corneal epithelium, the loosened corneal flap was peeled back with hockey spatula toward 12 o’clock position. the raw surface is thoroughly dried and standard laser ablation by TECHNOLAS 217 Z EXCIMER LASER SYSTEM (BAUSCH & LOMB Rochester USA) was performed, the Merocel sponge soaked in 0.02% Mitomycin C was placed over the ablated cornea for 20 seconds in every case. Later on corneal surface was thoroughly irrigated with copious amount of ringer lactate solution, extreme care was taken to avoid contact of limbus or conjunctiva to the Mitomycin C. The epithelium was carefully repositioned with alignment of the preplaced marks and allowed to dry, followed by instillation of antibiotic moxifloxacin 0.5% eye drops, a 14 mm bandage contact lens was placed over the cornea to protect the flap and post operative pain due to the mechanical rubbing of the lids.

The patient was allowed to go home with post operative regimen of antibiotics moxifloxacin 0.5% eye drops and Steroids Prednisolone Acetate 1.0%, non steroid anti-inflammatory drug Naclof sodium 0.3%, and lubricants Tears Naturale-II were continued on tapering dose. After complete epithelialization of cornea the bandage contact lens were removed. Patients were followed up at 1 week, 2 weeks, 1 month, 3 months, 6 months and 1 year.

RESULTS
Thirty two patients were enrolled in this study, twenty four (75%) were females and eight (25%) were males (figure 2). The majority of these patients i.e. twenty (62.5%) were contact lens user while eight (25%) were using spectacles/glasses as a visual aid where as four (12.5%) not using any visual aid (figure 1). Mean age was ranging from 20 to 45 years. Pre-operative best corrected vision (BCVA) was 6/9 or better in 46 eyes (71.8%) and 12 eyes(18.7%) had visual acuity of 6/9 to 6/12 whereas six eyes (9.3%) had 6/12 or less (figure 3). Visual acuity 6 months post laser was 6/9 or better in 52 (81.2%) of eyes, 8 eyes (12.5%) had 6/9 to 6/12, 4 eyes (6.4%) had visual acuity up to 6/12 or less (figure 4). Mean pre operative baseline spherical equivalent was -8.50 + 3.50 diopters. A single ablation zone of 6.00 mm was used. Mean spherical equivalent refraction after lasek surgery was +0.75 diopters.
At the end of one year follow up 50 eyes (78.1%) had clear cornea whereas corneal stromal haze of grade 0.5 according to Fante’s grading system was seen in 7 eyes (10.93%) and grade 1 haze was seen in 3 eyes (4.6%) whereas no haze of grade 2 and 3 were seen in any eyes. Complete epithelialization and removal of contact lens took place in 4.75 - 2.89 days (range was 3 -9 days). Major post operative complication was mild pain which occurred on 21 (65.6%) patients, while foreign body sensation and discomfort was seen in 6 (18.7%) of eyes, moderate pain requiring one analgesic was seen in 3 (9.3%) patients and 2 (6.25%) required two or more analgesics to relieve the pain.

DISCUSSION

Visual outcome six month post laser was 6/9 or better in 81.2% of the eyes, 12.5% of eyes had 6/9 to 6/12 and only 6.4% of eyes had 6/12 or less vision, in a study by Dong H Lee et al they reported a series of more then five hundred cases with a mean follow up more then one year with 86% had 20/20 or better visual acuity and 98% were having visual acuity 20/40 or better. Similar results reported by Argento et al they reported in MMC group uncorrected visual acuity UNVCA of 20/40 in 93.3% of cases and in 89.3% of cases in no Mitomycin group, uncorrected visual acuity of more then or equal to 20/25 was achieved in 76.6% of cases in the Mitomycin C group and in 71.4% of cases in the no Mitomycin C group.

Numerous studies have found the favorable visual outcome in cases of laser sub epithelial keratectomy with Mitomycin C in preventing the haze. It is speculated that because of its anti-mitotic properties MMC inhibits the proliferation and differentiation of fibroblasts, and therefore blocking the formation of myofibroblasts which is responsible for the corneal haze. Therefore the prophylactic use of MMC has been the routine practice for the correction of high refractive errors. Furthermore the laboratory investigators during the experimental studies on rabbit eyes have demonstrated the reduction of haze with the 0.02% topical application of Mitomycin C used for variable exposure time after refractive surgery. These studies had shown the keratocyte apoptosis leading to the depletion of keratocytes in rabbit corneas after one to six months.

In our study, at the end of one year follow up 78% had clear cornea while stromal haze of grade 0.5 was seen in 10.93% of eyes and grade 1 haze was seen in 4.6% of eyes whereas study by Bahri Aydin et al reported all eyes with preoperative SE between -8.6 and -12.0 D developed haze in treating myopia without MMC. Haze and myopic regression limited the success of LASEK in eyes with preoperative SE of -12 D and greater.

In another study by Argento et al in retrospective analysis of 30 eyes with Mitomycin C found 0% incidence of haze in all the cases, while in cases with no MMC group, trace of haze was seen in 17.9% of cases, grade 1 haze in 3.6% of cases whereas no eye had grade II, III and IV haze postoperatively and concluded that prophylactic use of intra-operative Mitomycin C in LASEK significantly reduced haze. Similarly Camellin M² had used Mitomycin C in higher concentration of 0.01% and found significant decreased sub epithelial haze, on the other hand Thornton I et al found that eyes treated with low dose of 0.002% MMC had demonstrated statistically less haze at all postoperative follow up. In a study by Lee H Dong they reported grade 1 haze in 3.17% of cases, whereas 3 eyes had grade II and 2 eyes has grade III haze. In our study complete epithelialization occurred in 4.75 + 2.89 days where as in study by Lee Dong H 2% eyes had delayed epithelialization.

CONCLUSION

In conclusion, Laser sub-epithelial keratectomy with Mitomycin C is a safe and effective procedure for the treatment of moderate to severe myopia and myopic astigmatism, however further studies about the safety and efficacy of Lasek with Mitomycin C with larger sample size and longer follow-up is required. 

REFERENCES


Medical knowledge is constantly proliferating with incredible advancement. As new information becomes available like changes in clinical procedures, equipment and treatment it becomes necessary to incorporate in the standard books being published with new editions.

“Concise Ophthalmology” is an attempt in the right direction. Prof. Syed Imtiaz Ali is a well-known academician and a doyen of Ophthalmology in the country. He is, in fact, a pragmatic personality with research oriented mind, a dedicated professional with academic prominence in the field. We heartily congratulate him for his untiring efforts in producing the fourth edition. In fact, writing a book is the true test of one’s patience with challenges.

Prof. Imtiaz has given excellent theoretical details on the clinical presentation supported by illustrations on ocular diseases in Pakistani population. He has researched changes to his new hypothesis that “Aging” is responsible for most of eye diseases, with new chapters on bleeding Pterygium, Vit A deficiency and assessment of Infantile visual acuity. He has done a commendable job by updating almost all the chapters to make it a very comprehensive book. This book is an excellent venture and a handy atlas for the budding Ophthalmologists, under graduates post -graduates, students, nurses and Ophthalmic technicians. We recommend them to keep this book as a ready reference on their tables ……………………………..Chief Editor
ABSTRACT

Objective: To evaluate the effectiveness of multiple surgical techniques in different types of strabismus

Study design: Observational case series.

Place & Duration of Study: Al Ibrahim Eye Hospital, Karachi, from July 2007 to December 2012.

Methodology: It was an observational Case-series, Patients having either primary exotropia (deviation 15-45 PD), constant esotropia or hypertropias were included in the study. Patients with either constant exotropia or basic intermittent exotropia underwent unilateral surgery of lateral rectus recession (maximum up to 10mm) and medial rectus resection (up to 6mm). Similarly, when patients had intermittent distance exotropia, underwent bilateral lateral rectus recession ((maximum up to 10mm). Patients with constant exotropia underwent either bi-medial rectus recession or unilateral medial rectus recession or unilateral medial rectus recession along with lateral rectus resection procedures. Patients with hypertropia underwent inferior oblique myectomy. Patients were re-evaluated at one week, one month and two months post operatively. Final outcome was considered at the end of two months at which achievement of ≤10 PD of exotropia/esotropia was considered as a success. Analysis was done using SPSS version 20.0.

Results: 578 patients were included in the study according to inclusion and exclusion criteria. Out of these 578 patients, 283 (48.96%) were male while rest of 295 (51.04%) were female. Out of these, 248 patients had exotropia. Mean angle of deviation observed before surgical correction was 49.23 prism diopters (standard deviation=10.43). After surgical correction, mean angle of deviation was 8.54 prism diopters (standard deviation=9.55). Overall success rate was 81.45% (202 patients) in cases of exotropia. Overall 272 patients with esotropia were included. Mean angle of deviation was 53.71 prism diopters (±17.18). Minimum angle of deviation was 20 prism diopters while the maximum angle was 90 prism diopters. Mean deviation after surgery was 9.73 prism diopters (±12.03). Surgical success as described as residual deviation of less than 10 prism diopters was seen in 202 (74.3%) of the patients. During the study period, 58 patients with hypertropia were included. The mean age of the patients included in study was 11.71 years (±7.95). Mean angle of hypertropia before surgery was 13.55 prism diopters (±4.43). This reduced to 0.48 prism diopters after surgery. Out of 58 patients, 55 (94.8%) had achieved success after surgery while only 3 (5.2%) patients had residual hypertropia of greater than 2 prism diopters (p=0.001).

Conclusion: In this study we have compared the different methods of surgical corrections of exotropia/esotropia and vertical deviations. It has been observed that one method that is unilateral lateral rectus recession and medial rectus resection has better surgical success rate as compared to the other method which is bilateral lateral rectus recession in exotropia correction. On the other hand no significant difference was observed in the success rate of different surgeries in esotropia. Isolated inferior oblique myectomy is highly successful and safe surgical procedure for correction of hypertropia.

Key words: Exotropia, Esotropia, success rate

INTRODUCTION

Squint is an ocular condition of deviation or misalignment of both or single eye. Its prevalence among children is 2-4%1 inward deviation of eyes is called Esodeviation which accounts for over half of total ocular deviations2 followed by exodeviation, which is outward deviation of eyes.1 One population based study reported an annual age- and gender adjusted incidence of 64.1/100,000 patients younger than 19 years of age.4 When one eye is elevated relative to the other, either intermittently or constantly, is termed as hypertropia. Hypertropia is much less common than horizontal deviations, but even then, it can cause significant problem either cosmetically or by abnormal head posture and thus needs to be corrected surgically. In one study, the incidence of hypertropia in patients younger than 19 years of age was reported to be 12.9 per 100 000 patients.5

Untreated strabismus along with cosmetic disfigurement can also result in significant amblyopia,6 Constant squints have been reported as a main cause of amblyopia by many authors.7 Early treatment of amblyopia is very important to prevent permanent impairment in visual acuity,8 it has been recommended by many authors that early surgical correction of strabismus can prevent or treat amblyopia.9

One of the best management options for correction of squints is its surgical correction.10,11 Surgical correction has always been a challenge. Which type of surgery is to be selected largely depends on the surgeon’s preferences and personal experiences. For horizontal squints either exotropia or esotropia, recession
Surgical Management of Strabismus, our Experience

The main objective of our study is to find out the success rates of different types of surgical corrections in different types of horizontal and vertical squints. The rationale of the study is that, by identifying the most successful surgical procedure, it could be preferred over the other choices in order to achieve best surgical correction of squints. This study will help in developing and recommending a standard procedure in order to achieve ocular alignment in patients with squints.

METHODOLOGY

It was an observational case-series, conducted from January 2007 to December 2012, at Al Ibrahim Eye Hospital, Karachi. Patients were selected using Non-probability purposive sampling. Ethical approval was taken from the ethical committee of Isra Postgraduate Institute of Ophthalmology. Patients having either primary exotropia (deviation 15-45 PD), constant esotropia or hypertropias were included in the study, while, patients with history of previous extra-ocular muscle surgery, Paralytic exotropia/esotropia and any other ocular disease such as congenital cataract, retinal detachment and any other cause of sensory visual deprivation were excluded from the study. After informed written consent the patients were selected from the squint clinic of Al-Ibrahim eye hospital, Karachi, diagnosed and reconfirmed by the consultant ophthalmologist. Patients were divided into either constant, basic intermittent or intermittent distance exotropias. All the patients underwent detailed ophthalmic examination including best corrected visual acuity, cycloplegic refraction, fundoscopy and squint assessment including measurement of squint using prism cover technique. Patients with either constant exotropia or basic intermittent exotropia underwent unilateral surgery of lateral rectus recession (maximum up to 10mm) and medial rectus resection (up to 6mm). Similarly, when patients had intermittent distance exotropia, underwent bilateral lateral rectus recession (maximum up to 10mm). Patients with constant esotropia underwent either bi medial rectus recession or unilateral medial rectus recession or unilateral medial rectus recession along with lateral rectus resection procedures. Patients with hypertropia underwent inferior oblique myectomy, concomitant horizontal deviation was corrected 2 weeks after vertical correction. All Surgery was done under local anesthesia in adults but children were operated under general anesthesia.

Patients were reevaluated at one week, one month and two months post operatively. Final outcome was considered at the end of two months at which achievement of ≤10 PD of exotropia/esotropia was considered as a success. Data was entered on a preformed proforma. Analysis was done using SPSS version 20.0. Qualitative data such as gender and success were presented by their frequencies along with percentages. The continuous variables such as age and degree of exotropia/esotropia in prism dipters before and after surgery was presented as mean ±SD. Stratification was done with regards to age, gender, degree of exotropia (in prism dipters) and the types of primary exotropia/esotropia in order to see the impact of these variable on the outcome. Chi square test will be used for the analysis of the data. P value of less than 0.05 will be considered as significant.

RESULTS

578 patients were included in the study according to inclusion and exclusion criteria. Out of these 578 patients, 283 (48.96%) were male while rest of 295 (51.04%) were female.

For Exotropia correction: Out of these, 248 patients had exotropia. Among these patients mean age was 17.49 years (standard deviation=10.26). Among these 248 patients, 170 (68.5%) had either constant exotropia or basic intermittent exotropia, while 78 (31.5%) had intermittent distance exotropia. Mean angle of deviation observed before surgical correction was 49.23 prism dipters (standard deviation=10.43). Similarly after surgical correction, mean angle of deviation was 8.54 prism dipters (standard deviation=9.55). Overall success rate was 81.45% (202 patients) in cases of exotropia, while success was variable when success rates were assessed on the basis of type of surgery performed. In case of unilateral lateral rectus recession and medial rectus resection surgery the success rate was 85.14 % (172 patients out of 202) while success rate in case of bilateral lateral rectus recession was 65.21% (30 patients out of 46). Success rates of different types of surgical procedures are shown in table-1. Success rates in relation to type of squint are shown in table-2. No statistical significant difference was seen in success rates of squint surgery in different age groups (p=0.5071). Success rates in different age groups are shown in table-3.

Table-1: Success rate of different types of surgeries

<table>
<thead>
<tr>
<th>TYPE OF SURGERY</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilateral Lateral Rectus Recession</td>
<td>30 (65.21%)</td>
</tr>
<tr>
<td>Medial Rectus Resection + Lateral Rectus Recession</td>
<td>172 (85.14 %)</td>
</tr>
<tr>
<td>Total</td>
<td>202 (81.45%)</td>
</tr>
</tbody>
</table>

P = 0.0017 (Chi square test)

For Esotropia correction: Overall 272 patients with esotropia were included. Mean age of the patients among these 272 was 12.19 years (±8.813), with minimum age
of 1 year and maximum age of 43 years.

Table-2: Success rate according to type of exotropia

<table>
<thead>
<tr>
<th>Type Of Exotropia</th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SUCCESSFUL</td>
<td>142 (83.52%)</td>
<td>60 (76.92%)</td>
</tr>
<tr>
<td>UNSUCCESSFUL</td>
<td>28 (16.48%)</td>
<td>18 (23.07%)</td>
</tr>
</tbody>
</table>

P=0.214 (Chi square test)

Table-3: Success rate of squint surgeries in different age groups

<table>
<thead>
<tr>
<th>AGE GROUPS</th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10 years yes</td>
<td>52 (83.87%)</td>
<td>104 (78.78%)</td>
</tr>
<tr>
<td>no</td>
<td>10 (16.13%)</td>
<td>28 (21.21%)</td>
</tr>
<tr>
<td>&gt;25 years yes</td>
<td>170</td>
<td>78</td>
</tr>
</tbody>
</table>

P=0.5071 (Pearson chi square)

Table-4: Postoperative residual deviation with respect to surgical treatment offered

<table>
<thead>
<tr>
<th>TYPE OF SURGERY</th>
<th>STATISTICS</th>
<th>PRISM DIOPTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI-MEDIAL RECTUS RECEPTION</td>
<td>Mean</td>
<td>7.1905</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>8.48309</td>
</tr>
<tr>
<td></td>
<td>Minimum</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>40.00</td>
</tr>
<tr>
<td>UNILATERAL MEDIAL RECTUS RECEPTION</td>
<td>Mean</td>
<td>7.5000</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>13.22876</td>
</tr>
<tr>
<td></td>
<td>Minimum</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>45.00</td>
</tr>
<tr>
<td>UNILATERAL MEDIAL RECTUS RECEPTION +LATERAL RECTUS RESECTION</td>
<td>Mean</td>
<td>10.4381</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>12.46923</td>
</tr>
<tr>
<td></td>
<td>Minimum</td>
<td>-10.00</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>60.00</td>
</tr>
</tbody>
</table>

Most of the patients 216 (79.4%) had constant esotropias. Essential /Infantile esotropia was present in 32 (11.8%) of the patients. Partially accommodative esotropia was present in 24 (8.8%) of patients. Mean angle of deviation was 53.71 prism diopters (±17.18). Minimum angle of deviation was 20 prism diopters while the maximum angle was 90 prism diopters. Out of these 272 patients, 210 (77.2%) of patients underwent Medial rectus recession and Lateral rectus resection in a one eye. Bilateral medial rectus recession was done in 42 (15.4%) of patients and unilateral medial rectus recession was done in 20 (7.4%) of patients. Mean deviation after surgery was 9.73 prism diopters (±12.03). Minimum deviation after surgery was 10 prism diopters while maximum deviation after surgery was 60 prism diopters. Mean deviations with respect to surgical treatments are shown in table-4. Surgical success as described as residual deviation of less than 10 prism diopters was seen in 202 (74.3%) of the patients, while residual refraction of greater than 10 prism diopters was noted in 44 (16.2%) of the patients. Remaining 26(9.6%) of the patients had residual refraction of greater than 20 prism diopters and were advised second surgery. The patients, who underwent bi medial rectus recession, 36 (85.71%) had successful surgery with no residual refraction. Similarly, 18 (90%) and 148 (70.47%) had successful surgery with less than 10 prism diopters of residual refraction after unilateral medial rectus recession and unilateral medial rectus recession combined with lateral rectus resection respectively (figure-1-2).

Figure - 1

RESIDUAL DEVIATION AFTER ESOTROPIA CORRECTION

Figure-2: Comparison of success rates of different types of surgeries performed in terms of percent of patients

Figure-3: Conditions associated with hypertropia

For Vertical deviation: During the study period, 58 patients with hypertropia were included. The mean
age of the patients included in study was 11.71 years (±7.95). Hypertropia was most commonly associated with exotropias followed by esotropias. Exotropia was associated in 23 (39.7%) of patients while esotropia was associated in 18 (31%) of patients. Other associated conditions are shown in figure-3. Mean angle of hypertropia before surgery was 13.55 prism diopters (±4.43). This reduced to 0.48 prism diopters after surgery. Out of 58 patients, 55 (94.8%) had achieved success after surgery while only 3 (5.2%) patients had residual hypertropia of greater than 2 prism diopters (p=0.001). Success rate with respect to age and associated conditions is shown in table-5 & 6 respectively. Among the complications observed, residual deviation in horizontal deviation after surgical correction was observed in 7 (12.1%). These patients were managed by orthoptic exercises and if residual deviation persists, than repeat of horizontal muscle surgery was done. Other complications were subconjunctival hemorrhage and conjunctival granulomas, both were successfully treated with topical drops. Complications are shown in table-7.

Table-5: Success of inferior oblique myectomy in different age groups

<table>
<thead>
<tr>
<th>AGE GROUPS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10 years</td>
<td>32</td>
</tr>
<tr>
<td>10-25 years</td>
<td>19</td>
</tr>
<tr>
<td>&gt;25 years</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
</tr>
</tbody>
</table>

| Residual hypertropia of > 2 PD | 2 | 1 | 0 | 3 |

DISCUSSION

Childhood squints when present can cause significant visual impairment due to amblyopia. In order to prevent amblyopia development early and appropriate treatment of strabismus is necessary. Surgical correction has variable success rate, resulting in preferring one type of surgical method over other in different types of exotropias/esotropias.

In our study we found out that the overall success rate for exotropia surgery was 81.45 %, while success was variable when success rates were assessed on the basis of type of surgery performed. When unilateral surgery was performed involving lateral rectus resection and medial rectus resection the success rate was 85.14 % while success rate reduced to 65.21 % when bilateral lateral rectus recession was performed. Success rates were higher in age groups of greater than 25 years. Similarly more success was observed in constant exotropias compared to intermittent exotropias.

Extremely variable success rates have been reported earlier in different studies. Choi J reported higher success rate of bilateral lateral rectus recession (58.2%) compared to unilateral lateral rectus recession and medial rectus resection (27.4 %) in patients with exotropia. One study by Quah B.L, showed that the patients who underwent unilateral lateral rectus recession and medial rectus resection had a success rate of 74.2% compared to 42.2%, when bilateral lateral rectus recession was performed. Another study by Jeoung JW, reported that, satisfactory outcome was achieved in 83.3% when unilateral lateral rectus recession and medial rectus resection, while satisfactory outcome was achieved in 48.3% when bilateral lateral rectus recession was performed. One study by Oriel Spierer reported a success rate of 74 % when bilateral lateral rectus recession was performed for intermittent exotropia.

There has been extreme variability of individual response to esotropia extra-ocular muscle surgery.

Table-6: Success of inferior oblique myectomy with respect to associated conditions

<table>
<thead>
<tr>
<th>ASSOCIATED CONDITIONS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXOTROPIA</td>
<td>ESOTROPIA</td>
</tr>
<tr>
<td>Successful surgery</td>
<td>22</td>
</tr>
<tr>
<td>Residual hypertropia of &gt; 2 PD</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>18</td>
</tr>
</tbody>
</table>

Table-7: Complications of isolated inferior oblique myectomy

<table>
<thead>
<tr>
<th>COMPLICATION</th>
<th>FREQUENCY (%)</th>
<th>MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subconjunctival hemorrhage</td>
<td>5 (8.62%)</td>
<td>Topical Steroids And Lubricants</td>
</tr>
<tr>
<td>Residual hypertropia</td>
<td>3 (2 PD in 2 patients &amp; 4 PD in one)</td>
<td>Only Counseled As Abnormal Head Posture Was Removed With No Abnormal Cosmetics</td>
</tr>
<tr>
<td>Conjunctival granuloma</td>
<td>1 (1.7 %)</td>
<td>Successfully Treated With Mild Topical Steroids</td>
</tr>
<tr>
<td>Residual horizontal deviation after correction of horizontal deviation</td>
<td>7 (12.1%)</td>
<td>Orthoptic exercise, Re-Peat of Horizontal Surgery</td>
</tr>
</tbody>
</table>
Although, comparison of the effectiveness to different surgical techniques is very difficult in statistical analysis. Nevertheless, the comparison of effectiveness among the surgical techniques fails to show any significant statistically significant differences. Although bilateral medial rectus recession has been slightly superior over residual deviation compared to the other techniques.

Many other researchers reported similar results separately in their studies. One such study was done by Willshaw et al., showed in forty-six children bilateral medial rectus recession to correct large angle esotropia successfully. Grint et al. showed success of unilateral medial rectus recession for moderate angle esotropias. In this study, sixteen patients with moderate angle esotropia of 30 to 35 prism diopters were treated with a unilateral medial rectus muscle recession of 6 or 6.5 mm, thirteen of sixteen patients (80%) were straight postoperatively or had 12 prism diopters or less of esotropia.

In another study, they compared different surgical procedures for the treatment of children or adults with esotropia. They also showed the success of medial rectus recession procedures either performed unilaterally or bilaterally.

Similarly, successful results have been shown when simultaneous medial rectus recession is performed along with lateral rectus recession.

Multiple surgical options have been attempted by many researchers to treat hypertropia. In one study, effects of isolated inferior oblique myectomy was observed in patients with superior oblique palsy, and the concluded an improvement of 11.91 prism diopters +/- 1.38 in all positions of gaze and for all age groups and both genders. They recommended inferior oblique myectomy as a primary treatment for superior oblique palsy. In another study, they compared the efficacy of inferior oblique myectomy with recession procedures. They showed that the patients of inferior oblique myectomy had less postoperative hypertropia (p<0.001) compared to the patients who underwent recession procedure. The patients who underwent the myectomy had higher success rate as far as residual hypertropia is concerned (p=0.056). But they also pointed out that the difference in success between the two procedures even more was pronounced (p=0.005) when patients had small-moderate hypertropia before surgery and this statistical difference was lost when patients had large hypertropia before surgery. In another study they concluded that isolated inferior oblique muscle weakening is an effective treatment, mean hypertropia decreased from 15 (+/-9) to 4 (+/-4) at the 1-year follow-up postoperatively. These results are comparable to results in our study which showed reduction of mean hypertropia of 13.55 prism diopeters (+ 4.43) to 0.48 prism diopeters (+ 1.08) postoperatively. These results and the results of study shows that isolated inferior oblique myectomy can successfully treat hypertropia without the need of any further surgical interventions. Thus different success rates have been reported by different researchers all over the world. No such data is available for our community, thus this paper is significant in selecting the best surgical procedure for exotropia/esotropia/vertical deviations. The main limitation of our study was that, it was conducted in a single institute and only patients belonging to same race were included.

CONCLUSION
In this study we have compared the different methods of surgical corrections of exotropia/esotropia and vertical deviations. It has been observed that one method that is unilateral lateral rectus recession and medial rectus resection has better surgical success rate as compared to the other method which is bilateral lateral rectus recession in exotropia correction. On the other hand no significant difference was observed in the success rate of different surgeries in esotropia. Isolated inferior oblique myectomy is highly successful and safe surgical procedure for correction of hypertropia.

REFERENCES
5. Tollefson M.M. Mohney B.G. Diehl N.N. Burke J.P. Incidence and Types of Childhood Hypertropia: A Population-Based Study Ophthalmology. 2006;113 (7):1142-5
There are large, flat-topped, confluent cobblestone papillae in the upper palpebral conjunctiva in the eye. Tarsal conjunctiva shows loss of architecture, scarring, and hyperemia. These findings are most consistent with a diagnosis of vernal keratoconjunctivitis. The patient responded well to a supratarsal injection of triamcinolone acetonide. (NewsNet Service)
INTRODUCTION

Anatomically ptosis may be classified as neurogenic (third nerve palsy, Horner syndrome, and Marcus Gunn Jaw-winking syndrome), myogenic (myasthenia gravis, myotonic dystrophy, ocular myopathy, simple congenital, or blepharophimosis syndrome), aponeurotic (involutional, postoperative), and mechanical (dermatochalasis, tumors, edema, anterior orbital lesions, and scarring).\(^1\)

Congenital blephroptosis is a common condition in pediatric population visiting oculoplasty clinic. It is more common than acquired blephroptosis.\(^2\) Congenital blepharoptosis presents within the first year of life either in isolation or as a part of many different ocular or systemic disorders. Surgical repair is challenging, and recurrence necessitating more than one operation is not uncommon. Not all patients with congenital ptosis require surgery, but children with amblyopia due to astigmatic anisometropia or deprivation may benefit from early surgical correction. A variety of surgical procedures to correct congenital ptosis have been described. The choice of procedure depends on a number of patient-specific factors, such as degree of ptosis and levator function, as well as surgeons’ preference and resource availability.\(^3\) It is commonly unilateral and commonly involves the left eye.\(^2\) It is challenging to manage congenital blepharoptosis, especially unilateral, because symmetry is difficult to achieve under general anesthesia.\(^4\) The definitive treatment of congenital blepharoptosis is surgery; different types of surgical options are in practice. The decision of surgery is based on Levator function mainly. Levator function is graded as poor (4mm or less), fair (5-11mm), good (12-15mm) and excellent (>15mm). For severity of blepharoptosis, it is graded as mild (1-2mm) moderate (3-4mm) and severe (>4mm). For blepharoptosis in which levator function is poor and severe, generally frontalis suspension procedure is performed. In cases with good levator function and moderate blepharoptosis, levator resection is considered as choice of surgery. In minimal blepharoptosis, Fasanella Sarvat procedure is preferred.\(^5\) The primary aim of surgery is symmetry of the upper lids.\(^6\) Levator resection can effectively correct severe blepharoptosis with Levator function and is comparable with frontalis suspension certain complication like excessive contraction & eye lid deformity are more commonly seen in frontalis suspension procedure. Levator resection has some complication as well. The most common complication is under correction.\(^7\) We selected 52 cases of congenital blepharoptosis with poor levator function and evaluated their results in term of surgical outcome and complications.

ABSTRACT

Objective: to evaluate the postoperative complications of levator resection in congenital blepharoptosis with poor levator function.

Material and Methods: prospective, interventional case series. The study was carried out at Department of Ophthalmology, Govt Lady Reading Hospital, Peshawar from July 2011 to Jan 2013. We selected 52 cases from outdoor department by universal sampling technique. Levator resection was carried out in all 52 cases (eyes) of congenital blepharoptosis (with 09 bilateral cases) with poor levator function (less than 4mm) after taking informed written consent. Patients were subjected to local / general anesthesia according to age. Data was collected on special proforma and was analyzed with the help of SPSS Version 16.

Results: The study population comprised of 52 eyes of 43 cases of congenital blepharoptosis. Male were in majority (59.6%). Age ranged between 05-35 years. About 65.3% patients were between 5 and 15 years. The results were excellent in majority (82.69%) with complete lid closure. The commonest postoperative complication was lagophthalmose and it was seen in 18 (34.6%) cases.

Conclusion: Levator resection, compare to frontalis suspension, in congenital blepharoptosis with poor levator function is an option for achieving good cosmesis. It has few complications compare to frontalis suspension. Lagophthalmose is the common postoperative complication after Levator resection.

Key words: congenital blepharoptosis, Levator function, Levator resection, post operative complications.

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Blepharoptosis with Poor Levator Function

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Nuzhat Rahil FCPS\(^3\), Mohammad Alam FCPS\(^4\), Rahil Aumer Malik FCPS\(^5\)

ABSTRACT

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Received: March 2014  Accepted: June 2014
METHODOLOGY

Study Design: prospective, interventional case series.

Place and duration: The study was conducted at the Department of Ophthalmology, Govt Lady Reading Hospital, Peshawar from July 2011 to Jan 2013.

Sample size: 53 eyes of 43 patients having poor levator function, good Bell’s phenomenon and normal corneal sensitivity.

Diagnosis was based on history, old photographs, and routine ophthalmic examination. Oculoplastic examination specific to blephrophtosis was performed by the operating surgeon, this included, vertical palpebral fissure height, marginal reflex distance (MRD), levator function, lid crease height, Bells phenomenon and ocular motility. All patients included were diagnosed as congenital blephrophtosis with poor levator function. It also included checking head position, chin elevation, brow position, and brow action in attempted up gaze. All the patients had detailed systemic evaluation to rule out secondary causes of the blephrophtosis. Age range was 05-35 years (mean: 14 years).

Exclusion criteria were absent Bell’s phenomenon, disturbed or absent corneal sensitivity and dry eyes. All patients were explained about the procedure and informed consent obtained.

Technique of surgical intervention: Levator resection was carried out through anterior approach. All patients were subjected to local/general anesthesia. After preparing and draping, an incision was marked at a level symmetric with the opposite eyelid usually 8-10 mm above the lid margin. A cut was made along the marked line using #15 scalpel blades. A blunt dissection was carried out towards lid margin to expose tarsal plate for re-attachment of levator at the end of the surgery. The post orbitcular facial plane was entered and orbital septum was exposed and confirmed by applying inward pressure at lower part of globe and pre-aponeurotic fat popped up under septum. The septum was incised with sharp scissors and the attachments between the septum and aponeurosis were separated to prevent postoperative lagophthalmos. The aponeurosis and Whitnall’s ligament were revealed by brushing the pre-aponeurotic fat pockets upward. This was followed by disinsertion of the aponeurosis from the tarsus. Carrying blunt dissection, the muscle was dissected all the way to the Whitnall’s ligament. A 6.0 vicryl was passed through partial thickness of the tarsus, 3 mm from its upper border and above the central pupil posterior to the aponeurosis and retrieved through the Whitnall’s. Two additional sutures were added between the tarsus and Whitnall’s and placed medially and laterally. The three sutures were adjusted as needed. Finally, the skin incision was closed with running 6.0 vicryl sutures.

Follow-ups: Patients had a follow-up on day one, at 4 weeks, 6 months and then last follow up at 1 year.

RESULTS

We evaluated 52 Eyes of 43 patients with 09 patients have bilateral congenital blephrophtosis with poor levator function in term of surgical correction and our goal was to achieve satisfactory alignment of eye lids with minimal complication. Most of the patients with congenital blephrophtosis with poor Levator function were in the age ranges from 5 to 10 years. So common age group was 05-10 years and seen in 20 (38.4) cases, 14 (26.9%) patients were having age ranges from 11 to 15 years, 11 (21.1%) patients were having age ranges from 16 to 20 years and only 7 (13.4%) patients had age of 20 or more years in our study sample. (Table 1). Most of our patients were male and in majority 31 (59.6%) patients were male and only 21 (40.3%) patients were female. (Table 2). Regarding postoperative complications after levator resection, the commonest complication was lagophthalmos it occurred in 18 (34.6%) cases, under correction was noted in 7 (13.4%) cases and crease abnormality in 6 (11.5%) cases and overcorrection was seen in only 2 (3.8%) cases. (Table 3).

<p>| Table-I: Age distribution in years (N=52) |</p>
<table>
<thead>
<tr>
<th>Age in years</th>
<th>frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>05-10</td>
<td>20</td>
<td>38.4</td>
</tr>
<tr>
<td>11-15</td>
<td>14</td>
<td>26.9</td>
</tr>
<tr>
<td>16-20</td>
<td>11</td>
<td>21.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>07</td>
<td>13.4</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>100</td>
</tr>
</tbody>
</table>

<p>| Table II: Gender distribution (N=52) |</p>
<table>
<thead>
<tr>
<th>Gender</th>
<th>frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>31</td>
<td>59.6</td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>40.3</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>100</td>
</tr>
</tbody>
</table>

<p>| Table III: Postoperative complications after levator resection in congenital blephrophtosis with poor levator function (N=52) |</p>
<table>
<thead>
<tr>
<th>Complications</th>
<th>frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagophthalmos</td>
<td>18</td>
<td>34.6</td>
</tr>
<tr>
<td>Under correction</td>
<td>07</td>
<td>13.4</td>
</tr>
<tr>
<td>Crease abnormality</td>
<td>06</td>
<td>11.5</td>
</tr>
<tr>
<td>Overcorrection</td>
<td>02</td>
<td>3.8</td>
</tr>
</tbody>
</table>

<p>| Table IV: Surgical outcome (N=52) |</p>
<table>
<thead>
<tr>
<th>Surgical outcome</th>
<th>frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfactory</td>
<td>43</td>
<td>82.69</td>
</tr>
<tr>
<td>unsatisfactory</td>
<td>09</td>
<td>17.3</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>100</td>
</tr>
</tbody>
</table>

In majority of our cases, results of surgery were good and symmetry in vertical fissure height and shape

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were achieved. It was seen in 43 (82.69%) cases and in only 9 (17.3%) cases; results were unsatisfactory due to postoperative complications. (Table 4)

**Figure-1: Preoperative**

![Image](image1.png)

**Figure-2: Postoperative**

![Image](image2.png)

**Figure-3: Postoperative**

![Image](image3.png)

**Figure-4: Postoperative and with complete lid closure**

![Image](image4.png)

**DISCUSSION**

Ptosis repair can be both challenging and frustrating, especially given ever-increasing demands for an optimal cosmetic surgical result. The diagnosis of and therapy for pediatric ptosis present challenges because of difficulties in performing preoperative examinations and the inability of the patient to provide intraoperative cooperation for proper lid placement. The timing for surgical treatment varies depending on age, severity and laterality. The ideal procedures in ptosis surgery are those that disturb normal anatomy the least and also allow for good results. In this study an anterior approach was selected, thus avoiding conjunctiva, lacrimal gland and tarsus. In blephroptosis surgery, good cosmetic outcome is main goal and different surgical techniques are used to achieve this goal. Levator resection is considered treatment of choice in cases of blephroptosis with a levator function of 5 or more and moderate blephroptosis. Although some studies suggest levator resection preferred over other procedure like frontalis sling in cases of poorlevator functions and severe blephroptosis. In our study good cosmesis was achieved in majority (82.69%) of the cases. According to a study, the success of Levator resection in case of severe blephroptosis with poorlevator function was (81.8%). In another study by Qamar et al, success of surgery was 85.65%. In our study, the most common complication of levator resection was lagophthalmos (34.6%). In literature the common most complication is under correction. Other common complications include crease abnormality and over correction. Blephroptosis is common in male and is commonly unilateral, left eye commonly affected. In our study male to female ratio was 3:1 with 87% cases involving the left eye. We found levator resection as safe procedure and have good cosmetic outcome in seven blephroptosis with few complications.

**REFERENCES**

INTRODUCTION

The loss of an eye can be very traumatic event in a person’s life. The disfigurement associated with loss of an eye can cause significant physical and emotional problems. The rehabilitation of patient requires a prosthesis that will provide optimum cosmetic and functional result. The history of ocular prosthesis dates back to 2900-2800BC when first evidence of use of ocular prosthesis was found in an Iranian woman. It was 2.5cm in diameter made up of light material probably Bitumen paste. Romans and Egyptian priests were known to have produced artificial eyes as early as fifth century constructed from painted clay. Germans introduced the art of making artificial eyes from glass and later in USA artificial eyes of acrylic paste were used. Today wide varieties of ocular prosthesis are available. Unlike stock based prosthesis which is not individualized for each patient, custom designed prosthesis is prepared with exact measurement of size and shape with help of accurate instruments. It is an innovative design which offers exact fitting of prosthesis on orbital socket providing improved motility. An important change added to this prosthesis is weight reduction achieved by making it hollow.

MATERIALS AND METHOD

A prospective study was conducted on 44 patients (15 male and 29 females) from July 2006 to March 2013 on behavior of light weight custom designed ocular prosthesis. All these patients were anophthalmic (enucleation or evisceration). In fact, enucleation allows for full volume restoration of anophthalmic socket and better cosmetic result. Intra-orbital implants were used during evisceration or enucleation to reduce potential for contracture and volume deficit and the better cosmetic result.

Ocular prosthesis were fabricated 6 to 8 weeks following surgery to allow for healing of socket. During that time, a temporary acrylic conformer was worn to keep the fornices formed and to prevent contracture. The steps of ocular prosthesis involve exact impression through selected trays, socket impression for exact scleral shell preparation, precise iris positioning and iris color matching. The patients were followed monthly and satisfactory score is noted. Ocularist also instructed the patient how to place and clean the prosthesis.

RESULTS

A total 44 patients were included in study and behavior of light weight custom designed ocular prosthesis is studied. An average 35.07% weight reduction was obtained. Mobility was noted good in all patients (100%). The patient satisfactory score was 5 in 34.1%, 4 in 52.3% and 3 in 13.6%. None of patient was unsatisfied.

Conclusion: The light weight custom designed ocular prosthesis provides satisfactory weight reduction, good functional mobility and cosmoses/aesthetics with reduced discharge rate. It also carries a high satisfactory score of the patients.
DISCUSSION

The raw materials used for light weight ocular prosthesis are polymethylmethacrylate (PMMA-polymer) and methylmethacrylate (monomer). PMMA is transparent thermoplastic available for use as ocular prosthesis and it has good degree of compatibility with human tissues much more than glass. Available stock prosthesis are fabricated from either glass or methymethacrylate but methyl methacrylate is a preferred product because glass is particularly subject to surface damage and deterioration and usually lasts only about 2 years. Methyl methacrylate is more durable, has a longer life expectancy, and better tissue compatibility. Complication rate (exposure, extrusion, discharge) of porous implants is much more as compare to non-porous implants. In order to render prosthesis non-porous heat initiated polymerization process is used instead of per oxidase polymerization. 7% glycol methacrylate is cross linked with polymer and monomer to produce thick molecular structure, smooth non-absorbent surface, high luster, negligible discharge and absolutely inert prosthesis. With development of these new materials the socket can be finely recorded more accurately on which custom made acrylic prosthesis can be fabricated with exact fit and esthetics with improved mobility coordinated with natural eye. Although the use of stock ocular prosthesis cannot be neglected due to its less coast and easy availability, a custom made ocular prosthesis provide better results functionally as well as aesthetically.

CONCLUSION

The light weight custom designed prosthesis provides satisfactory weight reduction of prosthesis, good functional mobility and cosmesis with reduced inflammation and discharge. It also carries high patient satisfactory score. Although patient cannot see with ocular prosthesis, it has definite role in restoration of patient self-esteem and confidence.

REFERENCE

2. London Times (February 20, 2007). “5000 years old artificial eye found on Iran-Afghan border.”
4. Frequently asked questions, American Society of Ocularist
8. Restorative Dental Materials by Robert G. Carig and Tohn M. Powers; polymer and polymerization p 141-142, 152
Thousands of patients suffering from advanced Gastrointestinal (GI) and Liver Cancer, Hepatitis B & C, Peptic Ulcer and Hepatopancreato-Biliary diseases are being treated freely at the Centre for Liver and Digestive Diseases (CLD) apart from imparting training to Gastroenterologists and postgraduates of the country. The Centre for Liver and Digestive Diseases (CLD) is a center of excellence and a part of the Holy Family Hospital, Rawalpindi Medical College. It was established in 2012 by Prof. Dr. Muhammad Umar and Prof. Dr. Hamama Tul Bushra Khaar, both doyens of Gastroenterology and superb academicians of international repute. It has the credit of becoming the first national Centre to do Peroral Endoscopic Myotomy (POEM).

Renowned faculty on the subject participated from USA, UK, China and India. The participants from all over Pakistan had full interaction with the faculty in 2 days’ international workshop i.e. 4th Basic and Advanced Endoscopy workshop recently held at Holy Family Hospital, Rawalpindi under the patronage of these two Professors. The training course was also joined by the 4th Endoscopic Ultrasound (EUS) Course, and 6th Advanced Endoscopic Retrograde Cholangio-pancreatotomy Course (ERCP)

The course co-coordinators were senior consultant of Gastroenterology, Prof. Amir Ghafoor Khan, Prof. (Gen) Tassawar Hussain, Brig. Amjad Salamat and Prof. Sharbat Khan from Quetta. During the workshop international consultants along with national experts performed the procedures to give hand-on training to the local consultants and postgraduates.

During the workshop, a joint team of Holy Family Hospital Gastroenterologists and Prof. Fan from China performed 4 Endoscopic Myotomy procedures on the patients suffering from Dysphagia.

Other procedures performed during this workshop were Advanced Endoscopic Retrograde Cholangio-pancreatotomy Course (ERCP), Endoscopic Ultrasound Course (EUS), Fibroscan, Manometry and Colonoscopy. National Faculty for these courses were Prof. Amir Ghafoor Khan, President Society for Gastroenterology Prof. Sharbat Khan, Col. Farrukh from Quetta and Prof. Mati ullah Khan, Brig. Dr. Masood Ahmed and Dr. Tshfeen Adam. The course was designed in such a way that all the participants were exposed to the foreign faculty and they fully benefitted from their rich experiences. It is worth mentioning that a most senior Liver Transplant surgeon Prof. A. Soin from India also examined those patients requiring Liver Transplant.

A regular training program on Gastroenterology is being run in the Centre for Liver and Digestive Diseases at Holy Family Hospital. The nation, especially the medical community of Pakistan is proud of the establishment of such an advanced center. The Government of Pakistan has eulogized this academic venture at the national level, through the efforts of Government of Punjab, Prof. Muhammad Umar FRCP, Prof. Dr. Hamama Tul Bushra Khaar, who are senior consultants in the country. They have written scores of research papers and articles in the national international indexed journals and have represented the country at various forums in renowned universities all over the world.

At the end of the workshop Prof. Umar apprised the audience regarding the trial of drug Sovaldi, on Hepatitis ‘C’ patients in order to treat them with the modern drugs……………...(Newsnet service)
I feel honored to inscribe a brief profile of Prof. Muhammad Umar and Prof. Hamama Tul Bushra Khaar both are Physicians par excellence and doyens of medicine. They are Professors of Medicine, Gastroenterologists & Hepatologists in Rawalpindi Medical College & Holy Family Hospital, Rawalpindi. They are holding many honors, awards and medals for academic achievements, unparalleled research contributions and having served the nation to their best.

Fortunately both the Professors are my students ever since they joined Rawalpindi Medical College as first year medical students in 1976 where I was serving as Professor of Ophthalmology. I have watched them rising and shining in every examination with flying colors. While writing a brief profile I feel that I am giving a cursory outlook of their accomplished work, unparalleled task hardly done by few professors in the history of medicine, as such I am not doing full justice in elaborating their contribution. Prof. Umar and Prof. Bushra, both are a charismatic, young pair as well as an embodiment of simplicity.

They joined the medical college in 1976 and qualified MBBS in 1981 adjudged as the best graduates of our college, bestowed with presidential award, talented medals and many creditable distinctions in their professional life. They qualified FCPS 1985 and were granted Fellowship (FRCP) from the Royal College of Britain in 2007 apart from Fellowships from other Universities of advanced countries like UK and USA.

Prof. Umar is currently serving as Principal of Rawalpindi Medical College and Chief Executive of Allied Hospitals apart from holding important positions in many Societies and indexed journals including the position of an adviser of ‘Ophthalmology Update’ an international scientific journal being published from Islamabad. Both of them have authored many books relevant to their specialty especially an authentic publication on Hepatitis ‘C’, written in a very lucid manner and being extolled by students, patients and professionals alike. They have the credit of writing scores of research papers and represented the country on many international forums. They are the examiners of various universities in Pakistan and abroad.

Both the professors have worked very hard to establish a very advanced Centre of Gastroenterology & Hepatology in Holy Family Hospital. It is not possible to document their academic contributions in a short description and is not a proper tribute to their services rendered in ameliorating the sufferings of ailing humanity. In short they have a brilliant record of academic eminence in the pursuit of knowledge in the field of medicine which speaks volumes of their devotion and dedication to achieve professional excellence and a prestigious place in the comity of venerated academicians.

Prof. Bushra being a pragmatic simple lady and a perfect house wife adorned with multiple qualities of head and heart. She is very adept in cooking very tasty and sumptuous dishes. God has gifted them with a beautiful daughter and a very handsome son who are treading the same path of the parents in academic activities. May Allah bless them enough vigor and strength to continue serving the sick humanity to their best. Amin!

Prof. Yasin Durrani
Chief Editor
Predictive value of Pirani Scoring system for Achilles Tenotomy in Ponseti Technique

Muhammad Imran Khan FCPS¹, Muhammad Saqib MBBS², Khial Wali MS³

ABSTRACT
The purpose of this study is to assess the predictive value of Pirani scoring system for Achilles tenotomy in Ponseti technique.

Patients & Methods: A total number of 25 feet in 15 patients of clubfoot were treated at Agency Headquarter Hospital Landikotal during the period from May 2012 to November 2013 by Ponseti method. The severity of the deformity was evaluated by Pirani scoring system. The data of all these successfully treated patients were analyzed and a correlation was found between the initial Pirani score and whether Achilles tenotomy will be required or not.

Results: Out of 13 feet with a Pirani score greater than or equal to 5.0 at initial presentation, 12 feet (92%) required tenotomy. Of the 9 feet with Pirani score between 3.0 and 4.5, five feet (55.5%) required a tenotomy and 4 feet (44.5%) did not. Finally, 3 feet with initial Pirani severity scores between 1 and 2.5, none needed a tenotomy.

Conclusion: The Pirani scoring system is reliable, quick, and easy to use, and provides a good forecast about the likely treatment for an individual foot but a low score does not exclude the possibility that a tenotomy may be required.

Key Words: Idiopathic Clubfoot, Ponseti scoring system, paediatric deformities.

INTRODUCTION
Talipes equinovarus, or clubfoot deformity is a combination of foot adduction and supination, midfoot cavus, heel varus, and ankle equinus. It develops during the second trimester of pregnancy and is detectable in sonograms. It usually occurs in otherwise healthy fetuses. Annually over 100,000 babies are born with idiopathic clubfoot worldwide.¹ During the second half of the twentieth century, the deformity was used to be managed with manipulations, castings and surgical correction but preference was given to surgical treatment as it was considered a method that could obtain full and lasting correction. Over time and based on long-term follow up studies surgeons realized that the results of surgical intervention are unpredictable.² ³

Since the initial description by ponseti in 1963,¹ several short-term and long-term studies have documented very impressive success rates and functional outcome,³ and as a consequence, non-operative Ponseti method of manipulation and casting has become increasingly accepted worldwide as the standard of care for clubfoot deformity in infancy. The ponseti technique is based on the thorough understanding of the anatomy and pathology of clubfoot. It involves a fairly small number of manipulations and usually requires performing an Achilles tendon tenotomy under local anaesthesia to bring about complete correction of the deformity.⁶ A long term assessment of Ponseti’s technique by Cooper and Dietz⁷ revealed that good and excellent functional results were obtained in 78% of clubfeet at a mean follow-up of 30 years.

There are many ways of grading the severity of the deformity, among which Pirani scoring system is gaining popularity due to its ease of application. Pirani⁵ devised a simple scoring system based on six clinical signs of contracture. Each is scored according to the following principle: 0, no abnormality; 0.5, moderate abnormality¹, severe abnormality. The six signs are separated into three related to the hind foot (severity of the posterior crease, emptiness of the heel and rigidity of the equinus), and three related to the mid foot (curvature of the lateral border of the foot, severity of the medial crease and position of the lateral part of the head of the talus). Thus, each foot can receive a hind foot score between 0 and 3, a midfoot score between 0 and 3 and a total score between 0 and 6.

The purpose of this study is to assess the predictive value of Pirani scoring system for Achilles tenotomy in Ponseti technique.

MATERIALS AND METHODS
A total number of 25 feet in 15 patients of clubfoot were treated at Agency Headquarter Hospital Landikotal during the period from May 2012 to November 2013 by Ponseti method. The severity of the deformity was evaluated by Pirani scoring system. Exclusion criteria was:

• Patient of clubfoot associated with other congenital deformities eg Spina bifida, Arthrogryphosis multiplexa congenital.
• Cerebral palsy.
Myelomeningocele were excluded from the study. Patients with only idiopathic clubfoot were included in the study. After exclusion study was conducted on 15 patients with 25 clubfeet. Written informed consent was obtained from all individuals. Data collected for each patient included sex, right or left foot, age at treatment onset. Each foot was rated according to Pirani scoring system. The data of all these successfully treated patients were analyzed and a correlation was found between the initial Pirani score and whether Achilles tenotomy will be required or not.

RESULTS

Out of 15 patients, 9 (60%) patients were male and 6 (40%) were female. Bilateral foot involvement was in 10 (33.3%) patients, right foot was involved in 3 patients and left foot was involved in 2 patients. Mean age at initial casting was 4.2 weeks (1-17 weeks), mean number of casts applied were 5.5 (4-9). Mean duration of casting was 30 months.

The mean number of the casts required was significantly greater for the group that required a tenotomy, than the group that did not require a tenotomy. Out of 13 feet with a Pirani score greater than or equal to 5.0 at initial presentation, 12 feet (92%) required tenotomy. Of the 9 feet with Pirani score between 3.0 and 4.5, 5 feet (55.5%) required a tenotomy and 7 feet (44.5%) did not. Finally, 3 feet with initial Pirani severity score between 1 and 2.5, none needed a tenotomy (fig-I).

DISCUSSION

This study shows that the Pirani scoring system can be used to clarify the need for tenotomy. Which is an integral part of the Ponseti’s technique for the treatment of idiopathic clubfoot. The indication for the tenotomy has been clearly described and is reported to be necessary in approximately 70-80% of the patients although the effectiveness of the Ponseti technique has been made clear in multiple publications over the past 30 years, whether we can predict the need of tenotomy and number of the casts before the initiation of the treatment is not yet being cleared.

Our study found a significantly higher initial Pirani score in feet requiring a tenotomy, which also required significantly more casts, suggesting that the better feet having low Ponseti score correct without the need for surgical intervention. M Porecha2 and P. J. Dyer3 had the same conclusion in their studies about the predictive value of Pirani scoring system for forecasting Achilles tenotomy.

Those feet which required tenotomies were as supple and plantigrade as those which did not undergo tenotomies which conclude that tenotomy does not suggest a poor result. Proper application of the Ponseti technique can successfully treat the severe idiopathic clubfeet. At the end of the treatment, feet from both groups had equivalent overall Pirani severity scores, reflecting supple and plantigrade feet. However, the true functional outcome of these two groups cannot be determined until the child has completed the growth, and perhaps not until later in life.

CONCLUSION

The Pirani scoring system is reliable, quick, and easy to use, and provides a good forecast about the likely treatment for an individual foot but a low score does not exclude the possibility that a tenotomy may be required.

REFERENCES

Choice of Operative Technique for Emergency Cases of Sigmoid Volvulus & its Outcome

Yousaf Jan FCPS¹, Waqas MBBS², Shaukat Hussain MBBS³, Muhammad Shah MBBS⁴

ABSTRACT

**Background:** Sigmoid volvulus is a common cause of intestinal obstruction in developing countries where it affects relatively young people. Most common presenting symptom is abdominal pain and constipation.

**Objective:** The objective of this study is to describe the emergency management of sigmoid volvulus with reference to the type of surgical procedures performed and to determine the prognosis of sigmoid volvulus.

**Materials and Methods:** All patients presenting with volvulus and needing emergency operative intervention during one and a half years duration from January 2010 to July 2011 were included in this study. Demographics, laboratory and treatment results, mortality and complications were recorded. Total 54 patients were included in the study of which 21 presented with gangrenous sigmoid colon on laparotomy and viable sigmoid colon was present in the remaining 33 cases.

**Results:** A total of 54 patients were studied. Their age ranged from 20-70 years with a mean of 47.3±17.4 years. There was a preponderance of male (83.3%) with a male to female sex ratio of 5:1. Twenty one patients (38.9%) presented with peritonitis. About 71.1% of the patients were treated with primary resection and anastomosis, 17.3% with Hartmann and 7.6% had Mikulicz procedure (Table 2). About 7.7% had anastomatic leak and 11.5% had wound infections. The average hospital stay was 8 days. Overall mortality rate was 5.7% and of the patients who died, all had primary resection and anastomosis for gangrenous bowel (Table 3).

**Conclusion:** Bowel viability is the most important determinant of the outcome in a patient with sigmoid volvulus. Hartmann’s procedure goes a long way in decreasing mortality due to sigmoid volvulus (especially in gangrenous bowel) in the emergency setting.

**Keywords:** Sigmoid volvulus (SV), primary resection, intestinal obstruction.

INTRODUCTION

Sigmoid volvulus (SV), the wrapping of the sigmoid colon around itself and its mesentery, is an unusual but serious type of intestinal obstruction¹. Both luminal obstruction and vascular occlusion are important pathophysiological consequences that arise in SV. Increased intracolonic pressure that decreases capillary perfusion coupled with mechanical occlusion, and vessel thrombosis contribute to mucosal ischemia, resulting in bowel gangrene.¹²

It is the third common cause for intestinal obstruction after cancer and diverticular disease and only 2-4% intestinal obstruction is caused by sigmoid volvulus.³ The cause of sigmoid volvulus is not known. Primary predisposing factors include a long congenital sigmoid with a short mesenteric base, chronic constipation, high fibre regimen, acquisitive mega colon, anticholinergic drugs, sedatives, and anti-Parkinson agents.⁴ Clinical presentations include abdominal pain, constipation and abdominal distension.

In older patients receiving psychotropic medications, pain is not usually common, although it would be associated with significant abdominal distention.⁵ The condition may give rise to complications like gangrene and perforation of sigmoid colon, because of the tight compression of mesocolic vessels.⁶

The diagnosis is usually confirmed with abdominal X-ray examination. Plain abdominal films classically show massive colonic distension on the right or left side of the abdomen with or without small bowel dilatation. In patients with equivocal diagnosis, a gastrografin enema demonstrates a pathognomonic sign of sigmoid torsion (bird’s beak or ace of spades signs).⁷

After hydration and resuscitation, it should be decided about type of management which include endoscopic detorsion or emergent laparotomy. Treatment of sigmoid volvulus may be operative or non-operative. Non-surgical methods include; per rectal decompression by flexible or rigid sigmoidoscope or by insertion of flatus tube. However, in 90% cases recurrence occurs after non-operative treatment. Operative treatment may be carried out by doing resection and primary anastomosis (RPA), resection and colostomy, Hartmann’s procedure (HP) or sigmoidopexy.⁸⁹

Sigmoid volvulus is often associated with a high mortality because it affects elderly patients who may have severe co morbid conditions. Patients older than 70 years represent a high risk group if subjected to
surgical intervention. However, when volvulus necessitates emergency surgery, it also carries a substantial mortality even in relatively young patients. The highest mortality usually occurs in cases of resection and primary anastomosis of gangrenous sigmoid colon. The ideal treatment in large bowel obstruction due to sigmoid volvulus should result not only in low mortality and morbidity in the short term, but also in low recurrence rates in the long term. Since, the condition is quite commonly found in local setting, this study was carried out to describe the management of sigmoid volvulus, the type of surgical procedures performed and to determine the prognosis of sigmoid.

MATERIALS AND METHODS

This prospective study was conducted in Hayatabad Medical Complex, Peshawar from January 2010 to July 2011 after taking permission from local ethical and research committee. All patients presenting with sigmoid volvulus in the above setting with age ranging from 20-70 years, were included in the study after informed consent. Patients who died before final diagnosis and treatment and those not fit for anaesthesia were excluded.

Patients’ age, gender and complete data were recorded. Accurate history of their disease was elucidated, complete physical examination performed and investigations carried out. Plain X-rays of abdomen were carried out as a part of investigations along with baseline and other relevant investigations required to correct co-morbidities. All the patients were resuscitated preoperatively and were given injection cefuroxime 1.5 gram BD and infusion metronidazole 500mg till surgery. Initially rectal tube was placed to relieve the obstruction; unless the patient had symptoms of peritonitis then a surgical procedure was adopted after resuscitation. Those relieved with rectal tube initially underwent surgery on next elective list.

Laparotomy was performed through midline incision and the viability of the gut was assessed. Initially the sigmoid was untwisted manually to relieve obstruction. Then the surgical patients fell into four categories: those undergoing volvulus reduction and sigmoidopexy only, intestinal resection and anastomosis, Hartmann procedure and other methods. The pelvic and peritoneal cavities were washed thoroughly with normal saline and pelvic drain was routinely placed an all cases. Midline incisions were closed by mass closure using Vicryl-1. Skin was closed with interrupted prolene 2/0 stitches. After discharge patients were followed-up for postoperative complications, recurrence and mortality for two month. Data was collected with the help of a proforma. The analysis was performed using SPSS version 11.

RESULTS

A total of 54 patients with Sigmoid Volvulus were evaluated in this study. Amongst them 45 (83.3%) were males and 9 (16.7%) were females, with male-female ratio of 5:1. The age range was 20-70 years (mean 47.3±17.4 SD years) Table I. The majority of patients presented with abdominal pain and distension, and absolute constipation (Table II), the distension being asymmetrical in 19 cases. Bleeding per rectum was seen in 7 (12.9%) cases and guarding and rigidity in 21 (38.9%) cases (Table 1).

At operation 33 patients (61.1%) had a viable gut whereas in 21 (38.9%) cases the gut was gangrenous. About 23 (42.5%) patients with no peritonitis responded to rectal tube placement initially and were recommended for elective sigmoid resection and 10 patients (18.5%) had an emergency laparotomy after failed tube decompression. Twenty one patients (38.9%) with peritonitis underwent laparotomy immediately after resuscitation.

Out of 33 patients with no peritonitis, 29 (87.8%) underwent primary resection and end to end anastomosis (10 cases in emergency and 19 cases as elective), 2 (6.1%) had sigmoidopexy after detorsion while 2 patients (6.1%) did not give consent for surgery after successful initial rectal tube placement. Twenty one patients (38.9%) with peritonitis underwent immediate surgery after informed consent. Six (11.5%) of them had primary resection and end to end anastomosis without covering stoma, two (3.8%) had primary resection and end to end anastomosis with covering stoma, nine (17.3%) had Hartmann’s procedure and Mikulicz procedure in four patients (7.6%) (Table 2).

The average hospital stay of the patients was 8 days. Post-operative complications were noted more in gangrenous cases. Four cases (7.7%) had anastomotic leak, six patients (11.5%) had superficial wound infection and 3 patients (5.7%) had died, so the overall mortality was 5.7% (Table 3).

Table-1: Characteristics and clinical features of patients (n=54)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of patients</th>
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<tbody>
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<tr>
<td>&lt;40</td>
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<tr>
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<tr>
<td>Pain abdomen</td>
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<tr>
<td>Abdominal distension</td>
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<td>100</td>
</tr>
<tr>
<td>Constipation</td>
<td>54</td>
<td>100</td>
</tr>
<tr>
<td>Nausea and vomiting</td>
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</tr>
<tr>
<td>Bleeding per rectum</td>
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<td>12.9</td>
</tr>
<tr>
<td>Guarding/rigidity</td>
<td>21</td>
<td>38.9</td>
</tr>
</tbody>
</table>
**DISCUSSION**

Sigmoid volvulus is a common cause of large gut obstruction in our country. When early laparotomy is performed the gut is usually found viable in most (80%) of the patients. This disease is very common in specific regions such as Asia, Africa, Middle East, Eastern Europe, and South America. In our study the diagnosis was mainly based on clinical and radiological findings. Diagnosis was later confirmed on operative findings. Diagnostic accuracy in this study was 94% which is comparable to literature.

There is the higher prevalence of sigmoid volvulus in men than women. According to reports this preference exists in many developing countries, while in developed countries having an equal proportion of men and women or a little preference for men. In this study, 83.3% patients were men and 16.7% were women, as compared to 70% and 30% of men and women in his study by Naseer A. Another matter of importance is the difference in age of the patients with sigmoid volvulus. In western countries, it mostly occurs at the age of 70 and 80 years, while in developing countries the age of occurrence is between 40 and 60 years. The present study showed an average age of 47.3±17.4 years, as compared to mean age of 52.2±15.9 years in his study by Okello TR.

Based on clinical presentations, sigmoid volvulus has been classically divided into two types of acute type in which the disease occurs with a sudden onset and the patients are admitted with colon obstruction; and subacute type in which mild symptoms are seen and the duration of the disease is longer. Symptoms such as ischemia and gangrene are common in the first type, but in the second type which has been mostly seen in the elderly, symptoms are milder. In our study 48 patients (88.8%) had acute obstruction while 6 (11.2%) presented with chronic subacute obstruction.

Sigmoid volvulus treatment can be done with different types of therapies including non-surgical decompression or surgical treatments. However, the most acceptable method is sigmoid non-surgical decompression with a long rectal tube via sigmoidoscopy and elective sigmoid resection through open or laparoscopic approaches. In our study 42.5% responded to rectal tube placement, as compared to 38.6% in his study by Maddah G.

Though primary resection and anastomosis has been recommended in several studies, because of risk of anastomotic leakage, it is still controversial. The incidence of anastomotic leakage following this surgery greatly varies in the literature. In this study, primary anastomosis was performed in 37 (71.1%) cases (29 for viable gut and 8 for gangrenous volvulus), of them 3 (8.1%) cases died because of anastomotic leakage and all cases from them was sigmoid gangrene. In his study by Maddah G, performed 40 (29.2%) cases of primary resection and anastomosis, 4 (10%) of them died because of anastomotic leakage and 2 (5%) of them was from gangrenous group. Therefore if gangrene of the sigmoid colon is noticed during laparotomy, the most appropriate method would be resection and end colostomy with Hartmann procedure. In our study 9 (17.3%) patients underwent Hartmann procedure for gangrenous volvulus and none of them had died, as compared to 47 (34.3%) Hartmann procedures and 14 (63.6%) died of them in a study by Maddah G. However if the surgeon is experienced and there is no systemic factors like diabetes, shock, renal failure and steroid consumption, primary resection and anastomosis would be a fruitful procedure. Double barrel colostomy (Paul Mikulicz’s procedure) was conducted in 47 (74.9%) of patients and no one died as compared to 9 (6.5%) patients and only in one (11.1%) case death occurred in a study by Maddah G. The fault for this method is that patient needs a two-stage surgical procedure, although it seems that if the intestinal gangrene does not extend into the distal sigmoid colon, this method would be confident.

Post-operative complications were noted more in gangrenous cases. Four cases (7.7%) had anastomotic leak, as compared to 2.4% and 3.3% in their studies by Iqbal T and Naseer A respectively. In our study all three died patients had primary resection and anastomosis for gangrenous sigmoid volvulus. Six patients (11.5%) had superficial wound infection, as compared to 16%, 13.3% and 34.1% in their studies by Iqbal T, Naseer A and Upendra P respectively. Patients with gangrenous sigmoid volvulus had more wound infections as also in our study. In current study 3 patients

| Table-2: Procedures performed for 52 sigmoid volvulus patients and its death |
|---------------------------------|-----------------|-----------------|
| Procedure performed             | Cases (%)       | Death (%)       |
| Primary resection anastomosis   | 37 (71.1)       | 3 (100%) all cases with gangrene |
| Hartmann procedure              | 9 (17.3)        | 0               |
| Mikulicz procedure              | 4 (7.6)         | 0               |
| Sigmoidopexy                    | 2 (3.8)         | 0               |
| Total                           | 52              | 3 (5.7)         |

| Table-3: Postoperative complications |
|-------------------------------|-----------------|--------|
| Variables                   | No of patients | Percentage |
| Total patients              | 52             | -       |
| Anastomotic leak            | 4              | 7.7     |
| Wound infection             | 6              | 11.5    |
| Mortality                   | 3              | 5.7     |
| Average hospital stay       | 8 days         | -       |
Choice of Operative Technique for Emergency Cases of Sigmoid Volvulus & its Outcome

(5.7%) had died, so the overall mortality was 5.7%, as compared to 3.3% and 19.5% mortality rates by Iqbal T and Naseer A. Highest mortality was noticed in patients with gangrenous sigmoid volvulus.

CONCLUSION

Bowel viability is the most important determinant of the outcome in a patient with sigmoid volvulus. The initial treatment of sigmoid colon volvulus is sigmoidoscopy with rectal tube placement. Primary resection and anastomosis for gangrenous sigmoid volvulus has high morbidity and mortality, therefore if emergency surgery is indicated, Hartmann’s procedure should be the procedure of choice especially in gangrenous and co-morbid conditions as it decreases the morbidity and mortality in emergency setting.

REFERENCES

Risk Factors of Early Pregnancy Complications

Rahat Jabeen FCPS1, Ilyas Siddiqi FCPS2

ABSTRACT
Objective: To determine the underlying risk factors in early pregnancy complications and outcome.

Methodology: This case study was conducted at Obstetrics and Gynaecology Department Hayatabad Medical Complex, Peshawar from April 2011 to April 2012 after taking permission from local hospital ethical and research committee. All the women with first trimester pregnancy with different complications were included in this study. The inducted women were registered on pre-designed proforma. Data were collected regarding demographic details, gestational period, type of complications, risk factors, treatment and outcome. All data were analysed on SPSS-11, and frequencies were calculated. Chi-square test was used for the assessment of p-values and p-value of <0.05 was considered to be statistically significant.

Results: A total of 132 patients with different early pregnancy complications were assessed. Their mean age was 26.5±3.75 years. Commonest complications found were abortion in 93 (70.4%) cases. The underlying risk factors found in abortion were anti-phospholipid syndrome in 7 (7.5%) cases, Diabetes mellitus in 10 (10.7%) cases, hypertension in 19 (20.4%) cases, polycystic ovarian syndrome 13 (13.9%) and infection in 9 (9.6%) cases. Most of the cases 83 (62.8%) were treated by minor surgical procedures, and 31 (23.4%) cases responded with conservative medical therapy. Outcome were anaemia in 83 (62.8%) cases, psychological upset in 79 (59.8%), infection in 45 (34%) cases and coagulopathy in 7 (5.3%) cases.

Conclusion: Abortion was found as the most frequent early pregnancy complication and the most frequent underlying risk factor was hypertension. Outcome included anaemia, psychological upset and infection.

Keywords: Abortion, Anemia, Early pregnancy, complications.

INTRODUCTION
Acute complications of pregnancy can appear in all trimesters; their diagnosis and management are great challenges.1 Factors affecting pregnancy outcome are socioeconomic status, smoking status and other health related conditions and behaviours.2 Different types of early pregnancy complications are abortion, gestational trophoblastic disease, ectopic pregnancy and hyperemesis gravidarum.

Miscarriage is a common complication of pregnancy occurring in 15% to 20% of all clinically recognized pregnancies. It is associated with chromosomal abnormality of the conceptus in over 50% of cases. Abortion is the most common complication encountered during early pregnancy.3,5 It has serious impact on the life of women as well as its consequences like depression and anxiety. Bleeding can be excessive, leading to shock and death, a known complication in developing countries but very rare in developed countries.6 The treatment; either expectant management, vacuum aspirator, surgical emptying of uterus has its own complications.7 Common risk factors are extreme of age, multiparty, different medical problems like Diabetes mellitus, hypertension, infection, genetic factors, polycystic ovarian syndrome, thyroid disorders, autoimmune disorders and anti-phospholipid syndrome. In many cases, the cause of miscarriage cannot be identified in a large number of women.

Ectopic pregnancy is one of the common early pregnancy complications. It is another frequent, problem that poses a major health risk to women during child bearing years, and accounts for about 9% of all pregnancy related deaths in the United States.8 It is the third leading cause of maternal death responsible for 6% of maternal mortality.1 Underlying risk factors are pelvic inflammatory disease and previous surgeries. Other complications of early pregnancy include hyperemesis gravidarum and gestational trophoblastic disease. Identifications of risk factors in early pregnancy complications are of great help in treatment of underlying pathology prior to future conception. The objective of this study was to find out various risk factors and their influence on early pregnancy complications and treatment outcome.

MATERIALS AND METHODS
This study was conducted at Obstetrics and Gynaecology Department of Hayatabad Medical Complex, Peshawar from April 2011 to April 2012. During the study period all the admitted women with early pregnancy complication were included in the study while those with an uneventful first trimester were excluded from the study. After taking detailed history, thorough clinical examination was done. All women were investigat-
ed for different risk factors like anti-cardiolipin antibodies, anti-phospholipid antibodies for anti-phospholipid syndrome, blood sugar level for screening of Diabetes, serum FSH, LH ratio and serum fasting insulin level for polycystic ovarian syndrome. Serum progesterone level in cases of threatened abortion, blood complete picture, midstream urine analysis and high vaginal swab for infection. The treatment options adopted after counselling were medical that is conservative medical therapy for treatment of underlying risk factor like hypertension and diabetes, supportive therapy and hormonal supplements (such as progestogen) in cases of polycystic ovarian syndrome and threatened abortion. Those women who had missed or incomplete abortion were treated by misoprostol or minor surgical procedure (dilatation-curettage and evacuation), while women with gestational trophoblastic disease were treated by suction curettage. Major surgical procedure (laparotomy) was performed in cases of septic abortion. The case records of these women were maintained on the predesigned proforma having demographic details, gestational period, and type of complications underlying risk factors, treatment modalities, outcome and follow-up. Data was analysed on SPSS version 11; other variables were calculated for frequencies and percentages.

RESULTS

Patients’ demographic characteristics and frequency of early pregnancy complications with risk factors are summarized in Table I and II respectively. Mean age of early pregnancy complication was 26.5±3.75 years. Majority cases were above 30 years (n=68, 51.5%) and between 21 and 30 years (n=47, 35.6%). Early pregnancy complications commonly occurred in multiparous women i.e. in 57 (43.1%) cases, parity was above 4 while 33(25%) cases were primiparous. Frequency of early pregnancy complication was high up to 8 weeks gestational period in 87 (65.9%) cases.

Presenting symptoms were bleeding per vaginum in 121 (91.6%) cases, pain in lower abdomen in 85 (64.3%) cases, vomiting in 47 (35.6%) cases and shock in 37 (28%) cases (Table I). Abortion was the frequent complication of early pregnancy found in 93 (70.4%) cases. The underlying risk factors found in abortion were anti-phospholipid syndrome in 7 (7.5%) cases, Diabetes mellitus in 10 (10.7%) cases, hypertension in 19 (20.4%) cases, polycystic ovarian syndrome 13 (13.9%) and infection in 9 (9.6%) cases. Other complications were gestational trophoblastic disease in 13 (9.8%) cases, ectopic pregnancy in 10(7.5%) cases and hyperemesis gravidarum in 15 (11.3%) cases. In case of ectopic pregnancy, 6 (60%) were associated with infection, while 2 (20%) cases had previous surgery (Table II). Most of the cases 83 (62.8%) were treated by minor surgical procedures, and 31 (23.4%) cases responded with conservative medical therapy and 18 (13.6%) patients had laparotomy.

Outcome of early pregnancy complications was psychological upset in 79 (59.8%) cases, infection in 45 (34%) cases, anaemia in 83 (62.8%) cases, coagulopathy in 7 (5.3%) cases, and septicaemia in 11 (8.3%) cases.

DISCUSSION

Early pregnancy complications are most commonly encountered during first trimester and abortion being the commonest one 93 (70.4%). This study shows that mean age for abortion was 26.5±3.75 years; according to the abortion surveillance report in the United States 50% of abortion occurred at less than 25 years. The frequency of risk factors in abortion was higher, found in

<table>
<thead>
<tr>
<th>Table: Type of early pregnancy complications with underlying risk factors (n=132)</th>
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</thead>
<tbody>
<tr>
<td><strong>Complication</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Abortion</td>
</tr>
<tr>
<td>Gestational Trophoblastic disease</td>
</tr>
<tr>
<td>Ectopic pregnancy</td>
</tr>
<tr>
<td>Hyperemesis gravidarum</td>
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Risk Factors of Early Pregnancy Complications

58 (62.3%) cases. The same is reported by Jaleel. The ideal time for the correction of underlying medical risk factor is before conception and these women should be properly followed.

Pelvic inflammatory disease was found in 9.6% cases in comparison with Wamwana et al. where inflammatory disease was a common risk factor for abortion in 43% cases. This vast difference could be due to social and cultural attitude. Polycystic ovarian syndrome was another high risk factor found in abortion (13.9%); same is reported by Cocksedge et al and Khakheli Met al (12.5%). Pregnancy failure in cases of polycystic ovarian syndrome is because of excessive androgens or obesity. Anti-phospholipid syndrome was found less significant risk factor in cases of abortion i.e. (7.5%). This is in contrast with Cervera et al, study where anti-phospholipid syndrome was highly associated with early pregnancy loss. In another study by Khakheli Met al, anti-phospholipid syndrome was found in 5.68% cases of abortion. This needs further work-up in our part of world to find the actual prevalence of anti-phospholipid syndrome and its complications. The main problem in this regard is the cost of investigations, poor latency rate and lack of awareness in patients.

In this study, most of the women who came with threatened abortion were successfully treated by conservative management like treatment of underlying medical problem and progesterone supplement. The role of progesterone in preparing the uterus for implantation of the embryo and its role in maintaining the pregnancy has been known for long-time.

Those women who had incomplete abortion or missed abortion underwent mostly surgical evacuation in 83 (62.8%) cases. Same is reported by Petrous et al, Khakheli M et al and the European study. Evacuation with vacuum aspiration is a safe alternative. In this study, 17 (18.2%) cases had medical abortion. Vaginal misoprostol is found to be an effective treatment in cases of early pregnancy failure and has been a safe option as reported by Zhang et al and Sotiriades et al. In this study ectopic pregnancy accounted for 10 (7.5%) cases, pelvic inflammatory disease was found in (60%) cases of ectopic pregnancy, which is consistent with the studies by Menonet al and Khakheli Met al. Hyperemesis gravidarum is a frequent pathology and can be the cause of serious neurological complications. The present study also showed a high frequency of hyperemesis gravidarum (11.3%) as compared to (9.5%) incidence in a study by Khakheli Met al but in majority of cases no underlying risk factor was found. Early vitamin supplementation is helpful in pregnancy-related hyperemesis.

The different outcome measures found were the psychological upset in (59.8%) as compared to 62.1% incidence in a study by Khakheli Met al. Majority of those patients had mild depression. For that they were well counselled and reassured. Only 3 patients (4.1%) had major psychosis and were referred to psychologist.

Infection rate was found in current study (34%), as compared to Nanda et al and Sturchler et al, where the infection rate was also high following surgical emptying of uterus. Khakheli et al also showed 44% incidence of infection in her study. About 8.3% patients had septicaemia.

CONCLUSION

Abortion was found to be the most frequent early pregnancy complication with many risk factors commonest being hypertension. Outcome was anaemia, psychological upset and infection. Early diagnosis of risk factors and their prompt treatment is likely to improve the outcome.

REFERENCES

Risk Factors of Early Pregnancy Complications


A fundus photo showed a deep and total cup with a retained silicone oil bubble. (NewsNet Service)
Comparison of Efficacy of Low Pressure Vs Standard Pressure Pneumoperitoneum During Laparoscopic Cholecystectomy

Muhammad Shah MBBS1, Yousaf Jan FCPS2 Shaukat Hussain MBBS3, Waqas MBBS4

ABSTRACT
Introduction: Symptomatic gall stones disease is a common health problem not only in developed nations rather its incidence is increasing in developing countries probably because of changing dietary habits. Laparoscopic cholecystectomy is considered as gold standard in its management.

Objective: To compare the efficacy of low pressure (7-10mm Hg) versus standard pressure (12-14mm Hg) pneumoperitoneum during laparoscopic cholecystectomy.

Materials and Methods: This randomized controlled trial was carried out in surgical unit Hayatabad Medical Complex, Peshawar from January 2011 to Jan 2013. Total of 106 patients in each group of symptomatic gallstones disease fulfilling the inclusion criteria were subjected to laparoscopic cholecystectomy and were followed throughout the procedure to see for any pain.

Results: A total of 212 patients underwent LC during the study period. The mean age was 41.59 years±11.38SD with range of 19-70 years. Low pressure group showed 95(89.6%) efficacy, whereas standard pressure group showed 82(77.4%) efficacy. Efficacy in both the group was significant with p-value of 0.016.

Conclusion: Low pressure pneumoperitoneum is more effective than standard pressure pneumoperitoneum in terms of postoperative pain relief.

Keywords: Low pressure laparoscopic cholecystectomy (LPLC), Standard pressure laparoscopic cholecystectomy (SPLC)

INTRODUCTION

Laparoscopic Cholecystectomy (LC) is one of the most common laparoscopic surgeries performed in medical world.1 Cholecystectomy through Laparoscopy is the most common major abdominal procedure performed worldwide especially in western countries.

It was first reported in Germany and France more than 2 decades ago which has now become the procedure of choice for routine gallbladder removal.2 In 1985, Dr. Muhe performed the first LC in Germany using a laparoscopy device called the galroscope. After 2 years in 1987, Dr. Mouret of France accomplished the Cholecystectomy through Laparoscopy with an approach that became the standard technique afterwards.3 Laparoscopic Cholecystectomy was called the ‘gold standard’ procedure for gallstone disease for the first time in 19894 and by 1992 Laparoscopic Cholecystectomy was endorsed as a legitimate tool for the treatment of symptomatic cholelithiasis due to which the number of cholecystectomies increased by 25% to 30%. After 1995 till now, the number of cholecystectomies performed through laparoscopy reached to 80% of all cholecystectomies.2,5

Besides, many benefits explaining the success of Laparoscopic Cholecystectomy, like lower morbidity, shorter hospitalizations, smaller incisions, less postoperative pain and earlier return to normal activity,6 the early pain is the most frequent complaint after Laparoscopic cholecystectomy and the main reason for overnight hospital stay in 17-41% of the patients.4,7 Though this postoperative pain is less intense than that after open surgery, but some patients (13%) still experience considerable discomfort due to its severness.4 Interestingly, the type of pain after laparoscopy differs considerably from that observed after other surgical procedures.8 Shoulder pain is a frequent postoperative observation after laparoscopy and its incidence varies from 35% to 80% and ranges from mild to severe. In some cases it has been reported to last more than 72 hours after Laparoscopic cholecystectomy.9 Visceral pain is also reported as complains after operative laparoscopy.8

The etiology and exact mechanism of post-laparoscopic pain is currently still not understood clearly.9,10 Most authors believe that it is an irritation of the phrenic nerve causing referred pain of C4 projected to the shoulder.9 Certain factors may influence the degree of pain after pressure created by the pneumoperitoneum, and the temperature of insufflated gas.4 Using a CO2-elicited pneumoperitoneum is appeared to be the current gold standard for surgical management of cholelithiasis and low pressure CO2-elicited pneumoperitoneum has been shown to not only significantly reduce the level of post-
operative pain but accelerate patient’s recovery as well. Patients have experienced shoulder pain less frequently (7%) after low pressure CO₂-elicited pneumoperitoneum LC (93% effectiveness) as compare with gasless laparoscopic cholecystectomy (28%). The average pain score at 12 hours for patients who underwent LPLC was 54.2 ± 8.5 with a minimum 38 and a maximum 69 on visual analogue score of 0-100 mm, while it was observed 62.2 ± 12.0 with a minimum of 35 and maximum of 100 in patients who underwent SPLC. This difference observed was statistically significant.¹¹

Pappas-Gogos G, et al found the amount of residual gas correlated with the postoperative pain which shows that the total volume of CO₂ may also be a more important factor for postoperative pain.¹² Low pressure pneumoperitoneum tended to be better than standard pressure pneumoperitoneum in terms of lower incidence of shoulder tip pain with efficacy of 72.1% vs 55.7% respectively, but this difference did not reach to statistical significance following elective laparoscopic cholecystectomy.¹³

The post-laparoscopic pain may have a significant burden on both the patient and health system. Moreover, it leads to make a negative public perception of ineffectiveness of laparoscopic cholecystectomy. All these can cause extra psychological and physical stress on the patients and also needs more hospital stay leading to more financial expenditure. As we are using standard pressure pneumoperitoneum for laparoscopic cholecystectomy in our setup due to non-availability of local statistics. In this regard, the current study was designed to find statistics about the said procedure in our local population present. Therefore this study was conducted to compare the efficacy of low pressure (7-10mm Hg) versus standard pressure (12-14mmHg) pneumoperitoneum during laparoscopic cholecystectomy.

MATERIAL AND METHODS

This randomized controlled study was conducted in surgical unit Hayatabad Medical Complex, Peshawar from January 2011 to January 2013 after taking permission from local ethical and research committee. The inclusion criteria included patients undergoing elective laparoscopic cholecystectomy, patients of either gender of ≥ 18 years of age and patients undergoing laparoscopic cholecystectomy with ASA I and ASA II. Patients having acute cholecystitis needs emergency cholecystectomy, empyema or mucocele of gallbladder, patients with acute gallstones pancreatitis and recent history of ERCP were excluded from the study.

All admitted patients as well as patients from out-departments with the gall stone meeting the inclusion criteria were recruited for the study. The diagnoses of cholelithiasis were based on ultrasound imaging/visualization examination and the evaluation was done clinically. All recruited patients was admitted and subjected to detailed history and examination. The purpose and benefits of study and complete procedure of laparoscopic cholecystectomy using CO₂-elicited pneumoperitoneum as well as the postoperative effects were explained to the patients in details after informed consent. The patients were randomly allocated in two groups by lottery method. Patients in ‘Group-A’ was subjected to standard pressure pneumoperitoneum and patients in ‘Group-B’ was subjected to low pressure pneumoperitoneum.

All the laparoscopic surgeries were carried out under the supervision of highly experienced surgeon who has extensive experience in laparoscopic surgery. The degree of the postoperative pain was assessed at 24 hours after surgery, using a visual analog scale (0-10) by nursing staff who was unaware of the perioperative effects, zero being no pain and ten being the worst possible postoperative pain. The postoperative shoulder tip pain of less than 3 on visual analogue score observed 24 hours was considered effective. A standard postoperative analgesic regimen was administered to all patients if needed. The nature and consumption amount of analgesics was recorded. All the above mentioned information including demographics was obtained on a pre-designed performa. Exclusion criteria were strictly followed to control confounders and bias in the study results.

Data Analysis Procedure: The data collected from the patients through performa were entered in SPSS latest version. Mean ± SD were calculated for continuous variable like age. Frequencies and percentages were calculated for categorical variable like gender, postoperative pain and Efficacy. Chi-square test was applied to compare the efficacy in both the group. Efficacy was stratified among age, gender and occupation to see the effect modifiers. P-value< 0.05 was considered significant. All the results was presented as tables and graphs.

RESULTS

A total of 212 patients underwent laparoscopic cholecystectomy, which were divided in two equal groups of low and standard pressures. Patients in low Group were managed with (7-10mm Hg) pressure and the patients in standard Group with (12-14mm Hg) pressure.

Sex wise distribution shows that out of 106 patients 30(28.3%) were males and 76(71.7%) were females in Group A, while group B contains 34(32.1%) males and 72(67.9%) were females. Male to female ratio was 0.43:1. Sex distribution among the groups was insignificant with p-value=0.327 (Table 1)

Average age was 41.59 years+ 11.38SD with range of 19-70 years. Low pressure contained 55.7% respectively, but this difference did not reach to statistical significance following elective laparoscopic cholecystectomy.

Comparison of Efficacy of Low Pressure Vs Standard Pressure Pneumoperitoneum During Laparoscopic Cholecystectomy
patients in less than 30 years, 69(65.1%) patients 31-50 years and 14(13.2%) patients between the ages of more than 50 years. While Standard pressure group contained 19(17.9%) patients in less than 30 years, 64(60.4%) in 31-50 years and 23(21.7%) patients with age more than 50 years. The age distribution among the group was also insignificant with p-value 0.252 (Table 2).

Low pressure group showed 95(89.6%) efficacy while non-effective in 11(10.4%) patients. Similarly standard pressure group showed 82(77.4%) efficacy while non-effective in 24(22.6%) patients. Efficacy in both the group was significant with p-value of 0.016 (Table 3).

Age wise distribution of efficacy shows that efficacy was greater in younger age group and decreases with the increase of age. The patients having less than or equal to 30 years of age have showed efficacy in 37(88.1%) patients while 5(11.9%) patients shows no efficacy. Patients with 31-50 years of age have shown efficacy in 112(84.2%) of patients and 21(15.8%) have shown no efficacy, with age more than 50 years of age. The efficacy was insignificant over age with p-value=0.311 (Table 4).

When efficacy was stratified among the gender it showed insignificance with p-value=0.563. There were 52(81.2%) male patients showing efficacy while no efficacy in 12(18.8%) male patients. Similarly in female patients, 125(84.5%) gave efficacy while 23(15.5%) showed no efficacy (Table 5).

DISCUSSION

Cholelithiasis is a common disease with a prevalence of 10-15% in the USA and about 16% in Pakistan. Patients mostly remain asymptomatic but symptoms appear when any complication develops. Symptomatic gall stone disease can end up with its complications without prompt surgical intervention. LC became an attractive treatment modality for cholelithiasis because of less scarring, shortened hospital stays, earlier returns to usual activities.

Our study population was younger; mean age was 40.65±10.35 years, as compared to mean age of 47.2
years and 40 years reported by Daradkeh\textsuperscript{19} and Bingen- er\textsuperscript{18} respectively.

“The higher the pressure, the better the view” used to be the axiom invoked by surgeons who needed adequate exposure for laparoscopic procedures. However, the maintenance of elevated intra-abdominal pressure for the duration of the procedure is associated with numerous undesirable consequences including post-operative shoulder tip pain. Laparoscopic cholecystectomy results in less postoperative pain and reduced analgesic consumption as compared with open cholecystectomy. Nonetheless, pain after laparoscopy may be moderate or even severe for some patients, and may require opioid treatment. Shoulder pain is a common complaint following laparoscopic surgery, initially being recognized by gynecologists during early experience with laparoscopic sterilization. The incidence varies, but is common, being experienced in approximately one third of patients following laparoscopic cholecystectomy. The pain usually lasts 2-3 days.

In our study the frequency of shoulder tip pain after standard pressure laparoscopic cholecystectomy was significantly higher as compared to low pressure laparoscopic cholecystectomy. Out of 106 patients 24 (22.6\%) complained of shoulder tip pain after standard pressure laparoscopic cholecystectomy as compared to 11 patients (10.4\%) out of 106 in low pressure laparoscopic cholecystectomy. Therefore the incidence of shoulder tip pain was 2.2 times lower after low pressure laparoscopic cholecystectomy than standard pressure laparoscopic cholecystectomy (p<0.05). These results are consistent with the findings of M Barczynski et al\textsuperscript{17}. In their study 8 patients (10.81\%) out of 74 in the low pressure group complained of shoulder tip pain as compared to 18 patients (24.32\%) in the standard pressure laparoscopic cholecystectomy. The shoulder tip pain being 2.2 times lower in low pressure as compared to standard pressure laparoscopic cholecystectomy. The studies conducted by Faisal Bilal Lodhi et al\textsuperscript{18} and Sandhu T et al\textsuperscript{19} demonstrated similar results.

In one of study the mean intensity of post-operative shoulder tip pain at 4 h, 8 h and 24 h was higher after standard pressure laparoscopic cholecystectomy as compared to low pressure laparoscopic cholecystectomy. The mean intensity of post-operative shoulder tip pain at 4 h was 4.2+0.45 in low pressure laparoscopic cholecystectomy and 4.43+1.4 in standard pressure laparoscopic cholecystectomy. The mean intensity of post-operative shoulder tip pain at 8 h was 2.2+1.1 in low pressure laparoscopic cholecystectomy and 3.5+0.76 in standard pressure laparoscopic cholecystectomy. The mean intensity of post-operative shoulder tip pain at 24 h was 0.2+0.45 in low pressure laparoscopic cholecystectomy and 0.64+0.74 in standard pressure laparoscopic cholecystectomy.\textsuperscript{19} In our study we measured pain intensity only after 24 hour of surgery in both groups and showed the same result (Table 3).

Esmat et al,\textsuperscript{20} also concluded that post-operative shoulder tip pain was significantly less in low pressure laparoscopic cholecystectomy as compared to standard pressure laparoscopic cholecystectomy, as also showed by our own study (p=0.016).

In one study the analgesic (diclofenac) requirements for shoulder tip pain were less in low pressure laparoscopic cholecystectomy as compared to standard pressure laparoscopic cholecystectomy. The mean number of analgesic injections was 2.2 + 0.45 in low pressure laparoscopic cholecystectomy and 2.71 + 0.5 in standard pressure laparoscopic cholecystectomy. The difference between the two is however statistically insignificant (p= 0.156).\textsuperscript{21,22}

Shoulder pain is a frequent postoperative observation after laparoscopy and its incidence varies from 35\% to 80\% and ranges from mild to severe. In some cases it has been reported to last more than 72 hours after laparoscopic cholecystectomy.\textsuperscript{6} Visceral pain is also reported as complains after operative laparoscopy.\textsuperscript{8}

Due to a decrease in the effective working space in low pressure pneumoperitoneum, the major concern of low intra-abdominal pressure would have been the operative time and conversion to open surgery. In our study however the operative time in the two groups were comparable statistically, although the mean operative time in group B was less than group A.

**CONCLUSION**

In accordance with earlier studies we conclude that use of simple expedient of reducing the pressure of the pneumoperitoneum to 8mmHg results in a significant reduction in both the frequency and the severity of postoperative shoulder tip pain. It decreases the analgesic demand, reduces the hospital stay and hence improves the quality of life in the early stage of postoperative rehabilitation. On the basis of these results, the widespread use of low pressure pneumoperitoneum during laparoscopic cholecystectomy is recommended.

**REFERENCES**

Comparison of Efficacy of Low Pressure vs Standard Pressure Pneumoperitoneum During Laparoscopic Cholecystectomy


Anterior Dislocation of Lens

A young man complaining of sudden, painful and blurred vision after vigorous long jump exercise. No history of direct trauma.

DD. Intra ocular tumour. Acquired syphilis, Marfans Syndrome, Homocystenuria, Well Marchesani Syndrome. Treatment: Surgical removal of the lens, Anterior Vitrectomy, Iris fixed IOL.

Complications: Ocular Hypertonia, Corneal decompensation. Glaucoma. (NewsNet Service)
INTRODUCTION

Pediatric lower limb long bones diaphyseal fractures are a very common injury, the commonest of which are femoral fracture that requires hospitalization as well. Femur is the main weight bearing bone of the body and hence its fracture can be catastrophic for the child and the family. The main cause of fracture in preschool children is child abuse and fall while sporting events and road traffic accidents are the commonest causes in older children. As the age increases and bones are stiffened, fracture causing force must be more severe.

There are several ways of treating femoral-shaft fractures in children, including skeletal or skin traction, immediate application of a hip spica cast, closed reduction and minimally invasive plate osteosynthesis, external fixation, plate fixation, and internal fixation with intramedullary nails. Selecting the management strategy is dependent on factors such as the presence of other associated injuries or multiple trauma, fracture properties, age, and socioeconomic factors. The preferred method of treatment for femoral shaft fracture in children younger than six years age is usually by closed reduction and primary spica cast. For children more than 11 years age it is by surgery, but there is no agreement on definite method of treatment between ages 6-12 years and both non-operative and surgery with internal fixation can be used.

This study was conducted to evaluate the results of immediate hip spica casting in the treatment of femoral shaft fractures in children of 1 to 6 years of age.

MATERIALS AND METHODS

The study was conducted in orthopaedic unit of Agency Headquarter Hospital Landikotal from May 2012 to November 2013. Twenty five patients were included in the study. All the children of both sexes from 1 to 6 years of age with fracture shaft of femur presented within 72 hours of injury were included in this study.

Results: Twenty five patients with femur shaft fractures who met inclusion criteria were enrolled for this study. There were 18 males and 7 females. Commonest problems with spica cast were soakage and breakage and reinforcement. Shortening of fractured limb was seen in 17 out of 25 children. Angulation of femur was seen in 4 children at the time of removal of spica cast. At 6 months follow up no non-union or mal-union or rotational deformity was noted.

Conclusions: Early spica cast is simple, effective and definite method of treatment in children up to 6 years of age. Early spica cast allows rapid return of child to family environment and it also avoids complications related to traction and operative treatment methods.

Key words: Pediatric trauma, femoral fractures, hip spica.
angulation. Children were usually discharged on same day. Patients were followed in outpatient department at 1, 2, 3, 5, 7 and 10 weeks and then on monthly basis for 6 months. At every visit hip spica was examined to note soakage, weakness or breakage of cast and pressure symptoms. Radiographs were taken to note overlapping and angulation. If spica had weakened or broken it was reinforced or changed. In follow-up visit if x-rays showed more than 2cm overlap or more than 20 degree angulation in anteroposterior plane and more than 15 degree angulation in medial and lateral planes, spica was removed and fracture re-manipulation under general anaesthesia was done and spica re-applied. After radiological union the patients were encouraged to start gradual weight bearing.

RESULTS

Twenty five patients with femur shaft fractures who met inclusion criteria were enrolled for this study. The mean age of patients were 3.25 years (range 1 year to 6 years). There were 18 males and 7 females with M: F ratio of 2.57:1. The most common mode of injury was fall from height. Thirteen fractures were on right and 12 on left side. There were 16 oblique, 8 transverse and 1 spiral fractures. Five fractures involved the proximal third, 16 the middle third and 4 distal third of shaft of femur (Table-I).

All the children were followed till union of fracture and removal of cast. Period of immobilization in spica cast ranged from 4 weeks 7 weeks with average of 5.73 weeks. Commonest problems with spica cast were soakage and breakage, which occurred in 11 out of 25 children (44%). Spica cast was reinforced in 8 (32%) children and changed in 3 (12%). None of the children required wedging. At the time of fracture healing i.e. at removal of spica cast, shortening of fractured limb was seen in 17 out of 25 children. Shortening ranged from 0.5cm to 2.5cm. Most children had shortening of 2cm or less, which was acceptable. Angulation of femur was seen in 4 children at the time of removal of spica cast. After removal of cast parents were asked to bring their child on monthly basis up till 6 months post castings. All children had equal limb lengths and no instances of malunion, nonunion, or rotational deformities noted (tab-II). Patient’s age, gender, radiological union of fracture, out come and complications were recorded. Data were analyzed using SPSS software.

**DISCUSSION**

Femoral fractures account for about 1.6% of all skeletal lesions in children, with a 2.6:1 male to female ratio and a bimodal distribution with an initial peak in early infancy. According to age, these fractures can occur as a result of the following: newborns: obstetrical trauma, children up to 4 years of age: different types of trauma (30% to 80% due to abuse) 11, 12 children over 4 years of age: most frequently, sports trauma, high energy trauma and road accident trauma. The most frequent and disabling long term complications are angular rotational deformities; more rarely, late consolidation, pseudoarthrosis and infections can occur. 13

Spica cast is simple, safe, effective and definitive method of treatment. It is cheap and associated with short hospital stay. The problem with early spica cast treatment is shortening and deformity of limbs. 14, 15 Results of our study are comparable with others. 16, 17, 18 Ali and Raza 19 have compared results of Thomas splint and early hip spica casting in terms of time of union, degree of shortening and angulations in coronal and sagittal plane and found no significant difference between the two groups.

Sugi and Cole have treated 191 children up to 10 years of age by early spica method. 18 Shortening at removal of cast was seen in all children of 9mm to 20mm (ranged from 0 to 10% of femoral length). At late review only seven children had from 6 to 13mm of shortening. Angular mal-alignment was not seen at late review, while 13 children had 10 degree to 15 degree of medial rotation of the leg that was not noticed by parents or children. Nine children had complication due to spica, including pressure effects, mal-alignment of fracture and breakage of spica. In our patients we did not remove sole of cast underneath foot and found that shortening was not affected with presence of sole cast. In our patients shortening occurred in only 17 out of 25, as compared with all patients of Sugi and Cole at

<table>
<thead>
<tr>
<th>Complications</th>
<th>Number of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spica soaking and breakage</td>
<td>11 (44%)</td>
</tr>
<tr>
<td>Spica re-enforcement</td>
<td>8 (32%)</td>
</tr>
<tr>
<td>Spica change</td>
<td>3 (12%)</td>
</tr>
<tr>
<td>Shortening at spica removal</td>
<td>17 (68%)</td>
</tr>
<tr>
<td>Shortening at 6 months</td>
<td>0</td>
</tr>
</tbody>
</table>

**Table-I: Showing sex, side and site involvement and fracture geometry**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Side involved</th>
<th>Fracture geometry</th>
<th>Site involvement – 1/3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>F</td>
<td>L</td>
<td>R</td>
</tr>
<tr>
<td>18</td>
<td>7</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>

time of removal of spica. We do not have follow-up, therefore long term results cannot be compared. The main concern in the treatment of femoral shaft fracture in children is shortening and deformity of the limb. In children, after fracture, femur grows at an increased rate. Overgrowth ranging from 1 cm to 2.5 cm has been reported by many authors. This overgrowth phenomenon following femur fracture has allowed acceptance of shortening up to 2 cm at time fracture healing.

A retrospective study of 46 children with femoral shaft fracture treated with immediate hip spica by Frech-Dorfler at follow-up, on average 7.5 years after trauma, only one patient showed a leg length discrepancy greater than 2 cm. One patient showed a minor valgus and rotational deformity. The study concluded that the long term outcome for conservatively treated femoral shaft fractures in preschool children is very good, even in severely displaced fractures and initial shortening of up to 2.5 cm can be treated successfully with a spica cast.

CONCLUSION

Early spica cast is simple, effective and definite method of treatment. Children up to 6 years of age can be safely treated with early spica cast. Early spica cast allows rapid return of child to family environment, thus avoiding prolonged separation from parents. Early spica cast also avoids complications related to traction and operative treatment methods.

REFERENCES
Management of Penile Fracture and its Outcome

Yousaf Jan FCPS¹, Aziz Ur Rahman FCPS², Waqas MBBS³

ABSTRACT:
Background: Penile fracture is a rare urological emergency that occurs almost exclusively due to blunt trauma on erect penis. Coitus and penile manipulations are common predisposing factors.

Objective: To evaluate the clinical presentation, therapeutic options and outcome of the treatment of penile fracture.

Materials and Methods: This descriptive study was conducted in Agency Headquarter Hospital, Landikotal and Hayatabad Medical Complex Peshawar, from January 2012 to September 2013. Twenty-two patients presenting with clinical findings/features of penile fracture were included. Detailed history was taken and physical examination was done in order to get the extent of penile hematoma, sign of blood at the meatus and side of curvature. Diagnosis was made on the basis of history and clinical findings and confirmed with operative findings. In all patients, a sub-coronal circumferential degloving incision was made. Data analysis was performed to obtain descriptive statistics.

Results: Majority of the patients (72.7%) were married with age range of 14-50 years (mean-25 years). Causes of fractures were manipulation in 5 (22.8%) cases, sexual manoeuvre in 14 (63.7%) cases, rolling or fall on erect penis in 1 (4.5%) and direct blow on erect penis in 2 (9%) patients. Interval between trauma and presentation varied from 011 hours to 21 days. The typical findings recorded in 100.0% patients were erection at time of fracture, detumescence, swelling and ecchymosis. Audible cracking sound and pain was present in 19 (86.3%) patients. 13 (59%) patients had rent in the proximal part of penis shaft and right lateral tear was present in 16 (72.7%) patients. Complication occurred in 1 (4.5%) patient. The mean hospital stay was 2 days.

Conclusion: Penile Fracture is not so uncommon as reported. A trauma to erect penis is mandatory for fracture to occur. The aim of surgical repair was to avoid complications and preserve both sexual and voiding functions which were satisfactorily achieved in the majority.

Keywords: Penile fracture, Corpus cavernosum, Trauma.

INTRODUCTION

Penile fracture is defined as traumatic rupture of the tunica albuginea of one or both corpora cavernosa of an erect penis.¹ Classically there is a history of snap sound, pain, detumescence and haematoma of penis with deformity. Penile fracture has been reported with sexual intercourse, masturbation, rolling over the bed or falling on to erect penis.²

The most common cause is violent sexual activity especially in a position of female partner playing the active role (upper position).³ In flaccid state injury to the penis is rare because of the thick tunica albuginea (about 2 mm), but during erection it becomes as thin as 0.5-0.25 mm, becoming more susceptible to fracture or tearing.⁴ Many conditions can simulate fractured penis as dorsal vein tears in penis may mimic penile fracture.⁵

The true incidence of penile fracture is not known even in western countries because it is under reported or hidden probably because of social embracement and sociocultural taboo, even it is reported to physicians it remains undiagnosed or mismanaged.⁶ The largest numbers of cases have been reported in Mediterranean countries including Turkey,⁷ but a recent study noted that the number of cases reported in the Middle East and North Africa was higher than in any other countries, including the USA and Europe.⁸

The diagnosis is usually straightforward because of stereotypical clinical presentation. Associated injuries include urethral rupture. Rupture of tunica is unilateral in most cases although bilateral rupture associated with urethral rupture also occurs.⁹

Diagnostic investigation includes ultrasonography and retrograde urethrogram.¹⁰ Presence of haematoma and breach in tunica albuginea is detected by ultrasonography. Urethrogram is helpful in establishing rupture of urethra although some authors advocate flexible urethra cystoscopy to detect any breach in case of suspicion. Cavernosography is a useful test in doubtful cases. It is invasive with low sensitivity and there is a risk of contrast reaction, post procedure priapism and corporal fibrosis.¹¹ Magnetic Resonance Imaging (MRI) is a useful investigation that pinpoints the site and extent of tunica rupture but is expensive and not readily available, especially in the emergency setup.¹²

The management of penile fracture has changed over the years,¹³ and it is either conservative or surgical. Conservative measures include splinting, cold compresses, anti-inflammatory agents, analgesia medica-
tions and anti-fibrinolytics. These are associated with significant complications such as infected hematoma, penile deformity and impotence.\textsuperscript{13,14,7,8} Immediate surgical repair is advocated though suture material is controversial.\textsuperscript{15,16} Most authors recommended degloving incision, evacuation of haematoma and repair of rent of tunica albugenia, with absorbable or non-absorbable suture. The aim of this study was to evaluate the clinical presentation, therapeutic options and outcome of the treatment of penile fracture.

**MATERIAL AND METHODS**

This study was conducted at the Department of Surgery, Agency Headquarter Hospital, Landikotal from January 2012 to December 2013. Cases of penile fracture were admitted in the surgical unit via emergency or out patients departments. Detailed history was taken and the time between fracture time and presentation at admission was documented for each case. Patient’s age, marital status, cause of fracture and time of injury were documented. Physical examination was done in order to determine the extent of penile hematoma, signs of blood at the external meatus and side of curvature.

Surgery was planned on the same day of admission after informed written consent. During operation Foley’s catheter was inserted in all the cases to prevent inadvertent urethral injury during exploration. A distal circumferential sub coronal incision was made and followed by degloving of the penis up to base, taking care not to injure the dorsal neurovascular bundle. The hematoma with in the Buck’s fascia was evacuated and the corporal tear was identified. The edges of the tunical laceration were freshened and closed with interrupted 2/0 vicryl sutures. The penile shaft skin was closed with 3/0 chromic sutures in an interrupted fashion, and pressure dressings were applied. Postoperatively erection was suppressed for 4-5 days and Foley’s catheter was removed after 24 hours.

Patients were discharged on the second postoperative day with oral antibiotics and analgesics. Compressive dressings were applied for one week and the patients were advised to abstain from sexual relation for 8 weeks. Follow-up was done regularly in outpatients department for 4 months.

**RESULTS**

Sixteen (72.7\%) patients were married and the mean age of the patients was 25 years. The typical findings recorded in all (100.0\%) patients had erection at the time of fracture, rapid detumescence, swelling and ecchymosis (skin haematoma). Audible crackling sound and pain was present in 19 (86.3\%). Thirteen (59\%) of the patients presented in less than 24 hours (Table I). Causes of fractures were manipulation in 5 (22.8\%) cases, sexual manoeuvre in 14 (63.7\%) cases, rolling or fall on erect penis in 1 (4.5\%) and direct blow on erect penis in 2 (9\%) patients (Table 2).

Thirteen patients (59\%) patients had rent in proximal part of the shaft of penis, four (18.2\%) in the mid of the shaft of penis and five (22.8\%) in the distal penile shaft (Table 3). Sixteen (72.7\%) patients had right lateral tear and 6 (27.3\%) had left lateral tear (Table 3). Size of the rent ranged from 0.5 – 3 cm, all patients (100\%) had unilateral tear (Table II). Surgical exploration and repair was done in all patients.

All patients had uneventful recovery with one (4.5\%) patient developed a slight penile curvature, but that did not affect his sexual activity. All patients were potent and without any problem of erection or sexual performance. Duration of hospital stay varied from 02 to 03 days. Follow up ranged from 2-4 months and no major adverse outcome was noted.

**Table-1: Demographic and clinical parameters (n=22)**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Number of patients</th>
<th>Percentage</th>
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<td></td>
</tr>
<tr>
<td>14-30</td>
<td>13</td>
<td>59</td>
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<td>31-40</td>
<td>5</td>
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<tr>
<td>&gt;40</td>
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<td>18.3</td>
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<tr>
<td>Marital status</td>
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<td></td>
</tr>
<tr>
<td>Married</td>
<td>16</td>
<td>72.7</td>
</tr>
<tr>
<td>Unmarried</td>
<td>6</td>
<td>27.3</td>
</tr>
<tr>
<td>Duration of presentation</td>
<td></td>
<td></td>
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<tr>
<td>&lt; 24 hours</td>
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<td>59</td>
</tr>
<tr>
<td>&gt; 24 hours</td>
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<td>Erection at trauma time</td>
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<tr>
<td>Audible crackling sound</td>
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<td>Detumescence</td>
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<td>Pain</td>
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**Table-2: Causes of penile fracture**

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<thead>
<tr>
<th>Causes</th>
<th>Number of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual intercourse</td>
<td>14</td>
<td>63.7</td>
</tr>
<tr>
<td>Manipulation</td>
<td>5</td>
<td>22.8</td>
</tr>
<tr>
<td>Fall/rollover on erect Penis</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Direct blow on erect penis</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table-3: Site and direction of rent (n=22)**

<table>
<thead>
<tr>
<th>Site of rent</th>
<th>No of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximal</td>
<td>13</td>
<td>59</td>
</tr>
<tr>
<td>Middle</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>Distal</td>
<td>5</td>
<td>22.8</td>
</tr>
<tr>
<td>Direction of rent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right lateral</td>
<td>16</td>
<td>72.7</td>
</tr>
<tr>
<td>Left lateral</td>
<td>6</td>
<td>27.3</td>
</tr>
<tr>
<td>Associated urethral injury</td>
<td>None</td>
<td>0</td>
</tr>
</tbody>
</table>
DISCUSSION

Fracture of the penis is a relatively rare condition, defined as the rupture of the tunica albuginea due to trauma to erect penis. Penile fracture is being reported with increased frequency in the recent past. Sporadic or low reporting gives the impression of this, being a rare trauma and the reason for this may be that not every urologist reports their clinical experience of condition. The under reporting may be due to the embarrassing nature and social taboo of the injury and the circumstances in which injury usually occurs.

The reported range of the age in different studies is 26 to 41 years and most of their patients were in their 4th decade. In this series, the patients were also young and age range was 14-50 years (mean 25 years). Majority i.e, 13 (59%) patients of them were in the third decade of life, which is the decade of maximum sexual activity. Coitus is the main etiological factor in our series, however non coital factors like masturbation, direct trauma etc are being reported in literature. In contrast, Malik MA, et al and Ahmad S, et al showed coitus as the main cause of penile fracture in their studies.

In a typical penile fracture, the normal external appearance is completely obliterated because of significant penile deformity, swelling and ecchymosis (the so called “egg-plant deformity”), present in all of these cases in current study. Physical examination of the penis can often detect the side of the corporal tear by palpating the overlying hematoma. The “rolling sign” is used to describe a firm, immobile hematoma, which is palpable as the penile skin is rolled over.

The fracture was mostly unilateral involving the right corpora in 16 (72.7%) which is as also stated by others. Involvement of the left corpus cavernosum was in 06 (27.3%) patients and no bilateral involvement was noted in our study. The incidence of urethral injury associated with penile fracture is reported as 11-22% in Europe and USA, and 2-3% in Asia and Middle East. No urethral injury was found in our study, as also in the study by Ahmad S, et al. In comparison 8.2% and 15.3% incidence of urethral injuries was noted by Nawaz H, et al and Malik MA, et al in their studies respectively. In current study thirteen patients (59%) had rent in proximal part of the shaft of penis, four (18.2%) in the mid of the shaft of penis and five (22.7%) in the distal penile shaft, as compared to 71.5%, 23.3% and 5.1% in proximal, middle and distal penile shaft involvement in his study by Nawaz H, et al.

Recent studies and the recommendations of WHO have demonstrated the clear advantage of early surgical exploration, as majority of the penile fracture patients are young, sexually active and highly motivated to resume sexual activity as soon as the healing process is complete. The goals of immediate surgical repair are the relief of painful symptoms, prevent erectile dysfunction, allow normal voiding and minimize complications from delay in diagnosis. Immediate re-appraisal of the torn tissue leads to sooner healing process. Surgery also reduces the complication rate upto 10%. In this study, all the cases were dealt surgically and the aim of the surgical repair of penile fracture was the evacuation of the hematoma, identification of the tunical injury, local corpora debridement and closure of the tunical laceration.

The type and location of incision is operator dependent in treating penile fracture. Some argue that the most commonly used degloving incision is associated with neurovascular injury and necrosis. In this study, degloving incision was used in all the cases and none of these complications were seen. Advantages of coronal incision and degloving are relatively good cosmetic results, good exposure and repair with single incision in case of bilateral tunica rupture and associated urethral injury. Perioperative use of urethral catheterization is also operator dependant, some advocating its routine use, while others prohibiting its insertion. In this series, urethral catheter was inserted perioperatively in all the cases. The catheter helps intraoperative dissection without harming the urethra, facilitates the application of a pressure dressing and prevents wound contamination postoperatively.

Follow-up of four months was obtained in 19 (86.3%) cases, while three patients were lost to follow up after six weeks. All the patients stated achieving normal painless erections. Only one (4.5%) patient developed a slight penile curvature during erection, but it did not affect their sexual activities. This was present in patient who had presented late. In comparison 7.4% and 5.1% incidence of slight penile curvature was noted by Nawaz H and Ahmad S respectively. No wound infection was noted in current study.

CONCLUSION

Penile fracture is a true urological emergency. Awareness of the mode of trauma and clinical features is all that required for diagnosis and no more investigation is needed. The aim of early surgical repair was to avoid complications and preserve both sexual and voiding functions and it was achieved.

REFERENCES

INTRODUCTION

Abruptio placenta is defined as the premature separation of the normally implanted placenta from 24 weeks to delivery of baby. Exact aetiology of placental abruption remains unknown, but one hypothesis is that it is due to the rupture of the uterine spiral artery. BLEEDING INTO DECIDUA LEADS TO SEPARATION OF THE PLACENTA FROM THE UTERINE WALL, CAUSING COMPRESSION OF THE PLACENTA. HEMATOMA FORMATION FURTHER SEPARATES THE STRUCTURES AND COMPROMISE OF BLOOD SUPPLY TO THE FETUS.

Multiple predisposing risk factors have been identified. These include pregnancy induced hypertension (PIH), advanced maternal age and polyhydramnios. Anemia, gestational diabetes, preterm labour, preterm rupture of membranes, chorioamnionitis, oligohydrom-
uterine rupture, renal failure, ischemic necrosis of distal organs and death. Neonatal complications include prematurity, birth asphyxia, fetal growth retardation and stillbirth.12

It is a major cause of third trimester haemorrhage and perinatal death. The high maternal morbidity and mortality is due to severe haemorrhage that follows this complication. The fetal morbidity and mortality is due to reduced placental surface area for oxygenation. To reduce maternal mortality as well as morbidity, correct antenatal follow up, early diagnosis and prompt evacuation of the uterus are required.13 The objective of this study is to determine the frequency, risk factors and feto-maternal outcome of abruptio placentae at our setup.

MATERIAL AND METHODS

This was an observational prospective study conducted at obstetrics and gynaecology department of Hayatabad Medical Complex, Peshawar from June 2012 to June 2013. All patients with diagnosis of abruptio placenta and gestational age of >24 weeks were included in the study. Women having bleeding due to causes other than abortion like placenta previa, vasa previa, carcinoma cervix and other local lesions were excluded. Data were collected after informed consent and included detailed history regarding age, gravida, parity, gestational age, details of physical examination, results of investigations, mode of delivery, outcome of fetus and maternal morbidity and mortality. The diagnosis of placental abruption was made on clinical ground in the presence of uterine pain, vaginal bleeding, uterine tenderness and hyper tonic uterus.

After history and complete physical examination, investigations were performed which included complete blood picture, blood grouping, coagulation profile, renal function test, liver function tests, screening for hepatic virology, urinalysis and ultrasound. Diagnosis was confirmed on the presence of retroplacental clot, which was used to estimate the amount of bleeding and severity of abruption. Patients were managed according to the fetal and maternal conditions. All information was gathered on proforma. Data were analysed using SPSS version 10.0 and results were analysed by calculating percentages.

RESULTS

Total number of deliveries from June 2011 till June 2012 was 2850 at our unit. Out of 2850, 122 patients of abruptio placenta were recorded. The majority of patients 92 (75.4%) belonged to the poor socio-economic group, 26 patients (21.3%) were in the middle (satisfactory) socio-economic group and 4 (3.2%) were from the upper socio-economic group (Table 1). In current study 52 women (42.6%) were in the age group of 25-30 years and 44 (36%) women were more than 30 years of age (Table-I). Incidence was higher in multi-parous, being 87 (71.4%), while 35 (28.7%) patients were primi-gravida (Table 1). Mainly the abruption was seen in women with term pregnancy i.e. 74 (60.6%) and 48 (39.4%) were before term. Out of these 122 women with abruption, 54 (44.2%) had mild, 39 (31.9%) had moderate and 29 (23.7%) were having severe abruption (Table-II).

| Table-1: Demographics of the patients (N=122) |
|-----------------|-----------------|-----------------|
| Variables       | Number          | Percentage |
| AGE             |                 |               |
| < 25 years      | 26              | 21.4          |
| 25-30 years     | 52              | 42.6          |
| > 30 years      | 44              | 36            |
| GRAVIDA         |                 |               |
| Primigravida    | 35              | 28.6          |
| Multigravida    | 87              | 71.4          |
| GESTATIONAL AGE |                 |               |
| < 37 weeks      | 48              | 39.4          |
| > 37 weeks      | 74              | 60.6          |
| SOCIOECONOMIC STATUS |       |               |
| Poor            | 92              | 75.4          |
| Middle          | 26              | 21.3          |
| Upper           | 04              | 3.2           |

| Table-2: Severity of abruption and risk factors |
|-----------------|-----------------|-----------------|
| Variables       | Number          | Percentage |
| Mild Abruption  | 54              | 44.4          |
| Moderate Abruption | 39            | 31.9          |
| Severe Abruption | 29              | 23.7          |
| Hypertension    | 14              | 11.4          |
| Diabetes        | 8               | 6.5           |
| Anaemia         | 76              | 62.2          |
| Multiple Pregnancy | 11            | 9             |
| No Risk Factors | 13              | 10.6          |

| Table-3 Maternal morbidity and mortality |
|-----------------|-----------------|-----------------|
| Complications   | No of patients  | Percentage |
| Shock           | 36              | 29.5          |
| PPH             | 17              | 14            |
| DIC             | 7               | 7.5           |
| Renal failure   | 5               | 4             |
| Death           | 4               | 3.2           |

| Table-4: Fetal outcome |
|-----------------|-----------------|-----------------|
| Complications   | Number          | Percentage |
| Alive           | 80              | 65.5          |
| Stillbirth      | 42              | 34.4          |
| Congenital anomalies | 7              | 5.7           |

A total of 76(62.2%) women were anaemic (Table 2). The cut off value of haemoglobin for the diagnosis of anaemia was 10.5 g/dl. Pregnancy induced hypertension was seen in fourteen (11.4%), diabetes in eight (6.5%), multiple pregnancy in eleven (9%), while 13(10.6%) women were those in whom no risk factor was present (Table-2). A total of 6 patients (4.9%) gave history of addiction, out of which 2 were smokers and 4 patients used Naswar (a locally made narcotic drug, commonly used in KPK province) during pregnancy. Severe anaemia with haemoglobin level of less than 7gm/
dl was present in 31 (40.7%) out of 76 anaemic women, 29 (38.1%) were moderately anaemic with haemoglobin level of 7-10gm/dl, while 16 (21%) were mildly anaemic having haemoglobin levels of 10-10.9gm/dl.

Regarding mode of delivery, 85 (69.6%) women delivered spontaneously vaginally and 37 (30.3%) underwent caesarean section. Four patients died undelivered, cause being severe anaemia, shock and DIC. Major maternal complication seen was shock in 36 (29.5%), followed by postpartum haemorrhage in 17 (14%), altered coagulation profile in 7 (5.7%) and renal failure in 5 (4%) of patients. Eighty (65.5%) women delivered alive babies while forty two (34.4%) were stillborn. Out of these 80 alive born babies five died in early neonatal period due to prematurity. Overall perinatal mortality was 38.5%. The incidence of congenitally malformed baby was 5.7%, 3 delivered with anencephaly, 3 had hydrocephalus and one baby delivered with both cleft lip and palate respectively.

DISCUSSION

Abruptio placenta remains a major cause of perinatal morbidity and mortality globally, though of most serious concern in the developing world. The most important factor is the severity of abruptum and its duration. The diagnosis of abruptum is a clinical one and the condition should be suspected in women who present with vaginal bleeding or abdominal pain or both, a history of trauma, and those who present in otherwise unexplained preterm labor.

The incidence of abruptio placenta in this study (4.2%) is comparable with a studies conducted by Jabeen M, et al1 (4.5%) and Sarwar L et al14 (4.4%) respectively. Increased incidence was seen in patients belonging to rural areas and multipara with advancing age. This same observation is also evident from other studies5,8,13. Majority of patients (71.2%) were anaemic. These observations are also seen in other Pakistani studies5,14. This high frequency of anaemia could be due to pre-existing nutritional deficiency anaemia being very common in our setup and then superimposed by abruptum. An association with diabetes (6.5%) and hypertension (11.4%) was observed in this study, which is also evident from other studies8,15,16. Many other studies highlights the association of pregnancy induced hypertension (PIH), anaemia and diabetes with the occurrence of placental abruptum5,17. A total of 6 patients (4.9%) gave history of addiction with the use of addictive narcotic NASWAR, out of which 2 were smokers and 4 patients used Naswar during pregnancy.

Sharief and Manther in their study compared 50 hypertensive and 104 normotensive cases of abruptum and concluded that there was an increased incidence of abruptum in hypertensive females9. Delivery outcome of our study shows that majority of women (69.6%) delivered vaginally, caesarean section (30.3%) being only performed in cases where fetus was alive or there was very severe abruptum. Same observations were also seen in other studies making vaginal route, the common route of delivery in cases of abruptum5,13,14.

Mainly the abruptum was seen in women with term pregnancy i.e. 74 (60.7%) and 483 (2.2%) were before term. Out of these 122 women with abruptum, 54 (41.4%) had mild, 39 (31.9%) had moderate and 29 (23.7%) were having severe abruptum. In current study, majority of patients 9275.4%) belonged to the poor socio-economic group, as also shown by Sarwar I, et al14 (77.4%).

Regarding maternal complications, shock 36 (29.5%) was the most common, followed by postpartum haemorrhage 17 (14%), altered coagulation profile 7 (5.7%) and renal failure 5 (4%). These findings were compared with a study done by Pitaphorm A et al, where, in 103 cases of abruptum, shock was the leading complication seen in 19.4% and disseminated intravascular coagulation in 5.8%18. In another study done by Abbasi RM, et al, postpartum haemorrhage, renal failure and DIC occurred in 16.6%, 6.25% and 4.14% cases respectively. Maternal mortality was 3.2% in current study, as compared to 1.32% and 8.33% by Jabeen M, et a15 and Abbasi RM, et al16 respectively. In our study, three patients died of DIC and one due to progressive renal failure. Fetal mortality (38.5%) observed is high, mainly the intrauterine death, the reason seems to be abruptum itself, its risk factors as well as the prematurity. This high mortality is comparable with other studies5,14,19,20.

The reasons behind high maternal and fetal mortality in current study were late presentations, low socioeconomic status of patients, poor education and ignorance about pregnancy and antenatal care and living far away from the tertiary care hospitals.

CONCLUSION

A higher than expected frequency of abruptio placentae exists in our setting and is associated with high rate of maternal and fetal morbidity and mortality. Because of this association found between placental abruptum and maternal and fetal morbidity and mortality, the conditions predisposing it should be carefully evaluated in order to reduce the occurrence of placental abruptum. Services of the health care providers can be taken to identify women at risk, early detection and timely referral of these especially poor socioeconomic women for proper management.

REFERENCES


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**Congratulations to Gold Medal Recipients**

At the recent Central OSP Meeting at Bhurban, Prof. Zafar ul Islam, Prof Imran Akram Sahaf & Dr. Sameera Irfan were awarded Gold medals for academic eminence & professional excellence in the field of Ophthalmology. Dr. Sameera was awarded Gold Medal in Pediatric Ophthalmology.
Comparison of Efficacy of Primary Anastomosis of Large Bowel with Bowel Preparation Vs without Bowel Preparation

Waqas MBBS¹, Yousaf Jan FCPS², Aziz ur Rahman FCPS³, Ahmad Din MBBS⁴

ABSTRACT

Introduction: Mechanical bowel preparation prior to surgery has been used for many years aiming at cleaning the large bowel of faecal matter and it is considered important in preventing postoperative complications including wound infection, intra-abdominal abscess and anastomotic leak. Objective: To compare the effectiveness of primary anastomosis of large bowel with bowel preparation versus without bowel preparation.

Materials and Methods: This study was conducted in the Department of Surgery, Hayatabad Medical Complex, Peshawar from October 2010 to October 2012. Through a randomized controlled trial design of study, a total of 284 patients presenting with carcinoma colon, diverticulitis, volvulus of large bowel and trauma to large bowel were included and randomly allocated in two groups (group A with pre operative mechanical bowel preparation and group B with no pre operative mechanical bowel preparation). Both groups were subjected to primary anastomosis and were followed for the occurrence of anastomosis leak.

Results: The mean age of the patients in group A was 41.547 ± 7.762 and that of group B was 41.375 ± 8.604. In group A, there were 53.52% males and 46.5% females while in group B there were 48.6% males and 51.4% females. Anastomosis leak was observed in 16.9% patients of group A and 12% patients of group B representing 83.1% effectiveness of mechanical bowel preparation prior to primary anastomosis and 88% effectiveness of no preparation. The difference was statistically insignificant (P value 0.238)

Conclusion: Since there was no significant difference in the effectiveness of both the groups, we strongly conclude that there is no need of any mechanical bowel preparation before primary anastomosis of the large bowel as it will reduce the burden on our hospitals which are already resource limited.

Key Words: Anastomosis, Bowel Preparation, Anastomotic leak.

INTRODUCTION

The mortality and morbidity from large bowel surgery often exceeded 20% mainly attributed to sepsis over the past century. However, it has decreased substantially since then mainly due to modern surgical techniques and improved perioperative care.¹ The repair by suture or resection of diseased colon is one of the most important skills in general surgery. Untreated or treated improperly these conditions cause significant morbidity in terms of intra-abdominal infection or death from generalized peritonitis.² The ideal treatment of large bowel lesion is primary resection and anastomosis because it avoids a stoma formation and the complications related to stoma.³ Anastomosis leak is the most important post operative complication following colorectal resection.⁴

Mechanical bowel preparation prior to surgery has been used for many years aiming at cleaning the large bowel of faecal matter and it is considered important in preventing postoperative complications including wound infection, intra-abdominal abscess and anastomotic leak.⁵ However there are studies showing increased risk of wound infections in patient who underwent bowel preparation.⁶ Moreover on table lavage is time consuming and cumbersome procedure which is associated with increased risk of spillage and contamination.⁷ On the other hand many studies have shown that primary colonic anastomosis is safe without prior mechanical bowel preparation.⁸ Varying degree of anastomotic leaks has been reported in literature. For example, the rate of anastomotic leak was 12% reported in one study showing effectiveness of 88% in primary anastomosis with bowel preparation and was only 4% revealing effectiveness of 96% in primary anastomosis without bowel preparation.⁹ In another study anastomotic leak occurred in 6% (94% effective) of patients who underwent bowel preparation and in 3.2% (96.8% effective) of those who did not.¹⁰

Large bowel resection with primary anastomosis is commonly practiced in surgery. Mechanical bowel preparation is unpleasant and associated with complications such as dehydration, nausea, vomiting and electrolyte imbalance. It is also cumbersome and costly. Recently many studies have shown that primary colonic anastomosis is safe even without mechanical bowel preparation before surgery however the matter remains controversial as mentioned above through statistics. Similarly some recent studies have demonstrated that...
there is no benefit of mechanical bowel preparation in colonic surgeries. Finally a Cochrane review concluded that there is no statistically significant evidence that patients benefit from bowel preparation. However local statistics about this is quite scarce in our population. Therefore this study was conducted to compare the effectiveness of primary anastomosis of large bowel with bowel preparation versus without bowel preparation.

**MATERIAL AND METHODS**

The study was conducted after approval from hospitals ethical and research committee. The inclusion criteria included all patients underwent primary anastomosis of the large bowel (colonic carcinoma, diverticulitis, volvulus and large bowel trauma), ages 20-60 years and either gender. Patients operated for large gut pathology in previous two months, patients with bleeding diathesis, diabetes mellitus, history of intake of steroids and immunosuppressive therapy and patients having previous bowel operations were all excluded from the study.

All patient meeting the inclusion criteria and undergoing primary anastomosis of the large bowel for indications like colonic carcinoma, diverticulitis, volvulus and large bowel trauma were included in the study through OPD and ER department. The purpose and benefits of the study were explained to all patients and a written informed consent was obtained.

All patients were subjected to detailed history and clinical examination and routine pre operative investigations were done in all patients. The patients were randomly allocated in two groups by lottery method. Patients in group A were subjected to pre operative mechanical bowel preparation (patients were given oral laxatives and enemas per rectum a day before surgery) while patients in group B were not subjected to pre-operative mechanical bowel preparation. All the surgeries were conducted by single experienced general surgeon having minimum of 5 years of experience. Post operatively patients were kept under observation till 7th post operative day to determine intervention effectiveness in terms of anastomotic leak. All the above mentioned information including name, age, gender and address were recorded in a pre designed proforma. Strictly exclusion criteria were followed to control confounders and bias in the study results.

**Statistical Analysis:** The data was entered into SPSS version 10.0 for Windows. Mean ± SD was calculated for numerical variables like age. Frequencies and percentages were calculated for categorical variables like gender, indications for primary anastomosis and effectiveness. Chi square test was used to compare the effectiveness between two groups while keeping P value of ≤ 0.05 as significant. Effectiveness is stratified among age, gender and indication of primary anastomosis of the large bowel to see the effect modifications. All results are presented in the form of tables and graphs.

**RESULTS**

A total of 284 cases were studied. All the patients were randomly allocated into two groups by lottery method comprising 142 patients in each group. The mean age and standard deviation for patients with bowel preparation (Group A) were 41.547 and 7.762 and for patients without bowel preparation (Group B) were 41.375 and 8.604 respectively (p value 0.569). The mean age and standard deviation for the total patient sample (n = 284) was 41.46 and 8.151 respectively.

All the patients were divided into four groups of age. In group A, there were 33 (23.2%) patients in the age group 20-30 years, 41 (28.9%) were in the age group 31-40 years, 46 (32.4%) of patients were in the age group 41-50 years and 22 (15.5%) were in the age group 51-60 years. In group B, there were 27 (19%) of patients in the age group 20-30 years, 44 (31%) were in the age group 31-40 years, 47 (33.1%) of patients were in the age group 41-50 years and 24 (16.9%) were in the age group 51-60 years. (Table 1).

<table>
<thead>
<tr>
<th>Age ranges [in years]</th>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Of cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>20-30</td>
<td>33</td>
<td>23.2%</td>
</tr>
<tr>
<td>31-40</td>
<td>41</td>
<td>28.9%</td>
</tr>
<tr>
<td>41-50</td>
<td>46</td>
<td>32.4%</td>
</tr>
<tr>
<td>51-60</td>
<td>22</td>
<td>15.5%</td>
</tr>
<tr>
<td>Total</td>
<td>142</td>
<td>100%</td>
</tr>
<tr>
<td>Mean Age with SD</td>
<td>41.547 ± 7.762</td>
<td>41.375 ± 8.604</td>
</tr>
</tbody>
</table>

The frequency of males and females in the study population was 145 (50.1%) and 139 (49.9%) respectively out of total 284 patients in both groups. Their frequency in the study groups were 76 male (53.52%) and 66 females (46.5%) in Group A, while 69 male (48.6%) and 73 females (51.4%) in Group B. While distributing the sample according to indications for primary anastomosis in the two groups, the following distribution was observed: In group A, Carcinoma Colon was indication in 35 (%) of patients, Volvulus was the indication in 39 (%) of patients, Diverticulitis was the indication in 19 (%) of patients while trauma was the indication in 29 (%) of patients. Similarly In group B, Carcinoma Colon was indication in 47 (%) of patients, Volvulus was the indication in 43 (%) of patients, Diverticulitis was the indication in 17 (%) of patients while trauma was the indication in 35 (%) of patients (Table 2).
Comparison of Efficacy of Primary Anastomosis of Large Bowel with Bowel Preparation Vs without Bowel Preparation

Table-2: Indication of primary anastomosis wise distribution of sample between both the groups: (n = 142 in each group)

<table>
<thead>
<tr>
<th>Indication</th>
<th>GROUP A</th>
<th></th>
<th>GROUP B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of cases</td>
<td>Percentage</td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>Carcinoma Colon</td>
<td>55</td>
<td>38.7%</td>
<td>47</td>
<td>33.1%</td>
</tr>
<tr>
<td>Volvulus</td>
<td>39</td>
<td>27.5%</td>
<td>43</td>
<td>30.3%</td>
</tr>
<tr>
<td>Diverticulitis</td>
<td>19</td>
<td>13.4%</td>
<td>17</td>
<td>12%</td>
</tr>
<tr>
<td>Trauma</td>
<td>29</td>
<td>20.4%</td>
<td>35</td>
<td>24.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>142</td>
<td>100%</td>
<td>142</td>
<td>100%</td>
</tr>
</tbody>
</table>

Out of total sample population anastomotic leak was seen in 41 patients while in 243 patients anastomotic remained patent. The percentage of anastomotic leak in the total study population was 14.4%. The frequency of anastomotic leak in the individual groups i.e. A and B was 24 (16.9%) and 17 (12%) respectively (Table 3).

Table-3: Frequency of anastomosis leak in both groups: (n = 142 in each group)

<table>
<thead>
<tr>
<th>Anastomosis Leak</th>
<th>GROUP A</th>
<th></th>
<th>GROUP B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>Yes</td>
<td>24</td>
<td>16.9%</td>
<td>17</td>
<td>12%</td>
</tr>
<tr>
<td>No</td>
<td>118</td>
<td>83.1%</td>
<td>125</td>
<td>88%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>142</td>
<td>100%</td>
<td>142</td>
<td>100%</td>
</tr>
</tbody>
</table>

While comparing the effectiveness between two groups, which was defined by the absence of anastomotic leak, 83.1% of patients in group A did not develop the anastomosis leak representing effectiveness of pre operative mechanical bowel preparation while 88% of patients in group B who were not subjected to mechanical bowel preparation did not develop the anastomosis leak representing its effectiveness. Chi square test was applied to compare the effectiveness between both the groups generating which showed statistically insignificant difference with a p value of 0.238 (Table 4).

Table-4: Comparison of effectiveness between two groups: (n = 142 in each group)

<table>
<thead>
<tr>
<th>Effectiveness</th>
<th>GROUP A</th>
<th></th>
<th>GROUP B</th>
<th></th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
<td>No. of Cases</td>
<td>Percentage</td>
<td>0.238</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>16.9%</td>
<td>17</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>118</td>
<td>83.1%</td>
<td>125</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>142</td>
<td>100%</td>
<td>142</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

While stratifying the effectiveness according to age groups, in Group A with pre operative bowel preparation, most of the anastomotic leaks were observed in advance age groups (representing less effectiveness) while less anastomotic leaks were found in younger age groups (representing more effectiveness). In group A, 92.7% of the patients had effective procedure in the age group 20-30 years, 89.7% effectiveness in the age group 31-40 years, 63.6% in the age group 41-50 years while 67% effectiveness of the procedure was found in the age group 51-60 years (Table 5).

Table-5: Age wise stratification of effectiveness in group a: (n = 142)

<table>
<thead>
<tr>
<th>Age ranges [in years]</th>
<th>No. of cases</th>
<th>Anastomosis Leak</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>55</td>
<td>4</td>
<td>51</td>
</tr>
<tr>
<td>31-40</td>
<td>39</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>41-50</td>
<td>19</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>51-60</td>
<td>29</td>
<td>9</td>
<td>20</td>
</tr>
</tbody>
</table>

In group B, advance age seem to no factor threatening effectiveness in terms of anastomosis leak. In Group A, most of the anastomotic leaks were observed in advance age groups (representing less effectiveness) while less anastomotic leaks were found in younger age groups (representing more effectiveness). In group A, 88.9% of the patients had effective procedure in the age group 20-30 years, 88.6% effectiveness in the age group 31-40 years, 91.5% in the age group 41-50 years while 79.2% effectiveness of the procedure was found in the age group 51-60 years (Table 6).

Table-6: Age wise stratification of effectiveness in group b: (n = 142)

<table>
<thead>
<tr>
<th>Age ranges [in years]</th>
<th>No. of cases</th>
<th>Anastomosis Leak</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>27</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>31-40</td>
<td>44</td>
<td>5</td>
<td>39</td>
</tr>
<tr>
<td>41-50</td>
<td>47</td>
<td>4</td>
<td>43</td>
</tr>
<tr>
<td>51-60</td>
<td>24</td>
<td>5</td>
<td>19</td>
</tr>
</tbody>
</table>

We also stratified the effectiveness according to indication of primary anastomosis wise and couldn’t find much difference in the effectiveness of bowel preparation and no preparation with only trauma being the most prominent in group A where anastomosis leak was found high as compared to other indications and lower effectiveness. In group A, Colon carcinoma showed an effectiveness of 83.6%, volvulus showed 97.4%, diverticulitis showed 89.5% and trauma showed and effectiveness of 89.5%. In group B, Colon carcinoma showed an effectiveness of 87.2%, volvulus showed 93%, diverticulitis showed 94.1% and trauma showed and effectiveness of 80% (Table 7).

**DISCUSSION**

Bowel preparation prior to elective colorectal surgery can include a variety or a combination of interventions, such as, preoperative dietary modifications, oral laxative solutions and the use of enemas as there are no strict guidelines available regarding the method of choice and much is left on the operating surgeon’s
discretion. It was believed that since bowel preparation decreases intra-luminal fecal mass and resultantly decreased bacterial load in the bowel, it appeared to be a logical argument that this decrease in fecal load and bacterial contents would also reduce the rates of infectious postoperative complications such as surgical site infections, deep intra-abdominal infections and anastomotic dehiscence or disruption of the surgical anastomosis. All these theories, however, have been based largely on clinical experience and expert opinion.\textsuperscript{11}

The mean age and standard deviation for patients with bowel preparation (Group A) were 41.547 and 7.762 and for patients without bowel preparation (Group B) were 41.375 and 8.604 respectively (p value 0.569). The mean age and standard deviation for the total patient sample (n = 284) was 41.46 and 8.151 respectively. There were 76 male (53.52%) and 66 females (46.5%) in Group A, while 69 male (48.6%) and 73 females (51.4%) in Group B.

Bucher P, et al,\textsuperscript{12} in a Randomized controlled trial in 2005, divided patients in two groups on the basis of bowel preparation and no preparation was made comprising of 78 and 75 patients respectively. The anastomotic leak rate was 6.4% in the group with bowel preparation while in the unprepared bowel leak rate was found to be 1.3%, similarly the infectious complications were 13% and 4% respectively in the prepared and unprepared group. The findings of this study are very much comparable to current study in which 284 patients in total were divided in two equal groups of 142 patients each. The anastomotic leak rate in the group with prepared bowel was 16.9% and in the unprepared bowel group was 12%.

In another RCT conducted by Ram E et al\textsuperscript{13}, 0.6% of the patients from prepared group developed anastomotic leak while 1.2% of the patients from the unprepared group developed anastomotic leak although in this study the leak rate was more in the unprepared group but it was statistically not significant. Zmora, O et al,\textsuperscript{14} in a randomized controlled trial also showed anastomotic leak rate 4.2%, and 2.3%, in the prep and non-prep group, respectively which was not significant, as compared to 16.9% and 12% in the prepared versus non-prepared groups in current study which was also not statistically significant (p=0.238).

Ali M,\textsuperscript{15} studied the effect of bowel preparation on 211 patients in an RCT which contained two groups of 109 cases with prepared bowel while in 101 patients bowel was not prepared and all the cases were subjected to colonic surgery at various levels. His result showed a high percentage of anastomotic leaks in the prepared group that was 5.5% in comparison to 1%, as also showed by high leak rate in prepared group (16.9%) than non-prepared group (12%) in our current study.

**CONCLUSION**

Since there was no significant difference in the effectiveness of both the groups, we strongly conclude that there is no need of any mechanical bowel preparation before primary anastomosis of the large bowel as it will reduce the burden on our hospitals which are already resource limited.

**REFERENCES**


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**Table-7: Indication of primary anastomosis wise stratification of effectiveness between two groups: (n = 142 in each group)**

<table>
<thead>
<tr>
<th>Indication</th>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon Carcinoma</td>
<td>55</td>
<td>47</td>
</tr>
<tr>
<td>Anastomosis Leak</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>83.6%</td>
<td>87.2%</td>
</tr>
<tr>
<td>Volvulus</td>
<td>39</td>
<td>43</td>
</tr>
<tr>
<td>Anastomosis Leak</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>97.4%</td>
<td>93%</td>
</tr>
<tr>
<td>Diverticulitis</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Anastomosis Leak</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>89.5%</td>
<td>94.1%</td>
</tr>
<tr>
<td>Trauma</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>Anastomosis Leak</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>58.6%</td>
<td>80%</td>
</tr>
</tbody>
</table>
Attention! Contributors and Researchers

While writing an article or a research paper

With the advent of internet facility there has been an increasing trend of plagiarism in every field of life especially the research field of education sector. We are not surprised to see that most of the young doctors aspiring for their promotions, research degrees or a doctorate are busy in writing articles, research papers or a thesis and to get them recognized by hook or crook through publications in scientific journals, is a very lamenting affair. We have also noticed that they embark on such subjects which have already been undertaken by many other authors and their results are well established and fully documented in the text books as a solid theorem and does not require further research except in very few corners which need extended ‘probe in’. They never try new fields in academics as it entails lot of time and hard work, even their supervisors or heads of the departments never bother to advise them not to select such hackneyed topics or a stereotyped attempt on a particular subject.

To quote few examples in the field of ophthalmology we hardly need any research work in finding the complications of cataract surgery, a small incision cataract surgery in phacoemulsification, comparing the efficacy of many antibiotic eye drops, modes of local anesthesia in ocular surgery, corneal repair through amniotic membrane, incidence of hepatitis B & C in intending ocular surgery especially the cataract surgery and finally the incidence of refractive errors in school going children etc etc., There is no doubt that these are very important fields in ophthalmic horizon but one can find thousands of papers written on these topics. We are not at all critical on this point and we do not mean to discourage our young ophthalmologists either. Our aim is that the supervisors, heads of the department, reviewers and the editors of the scientific journals should guide them to select from an array of available topics so that they can select and produce quality work with at least some originality and we would certainly like to publish such peer-reviewed papers without any hesitation.

We are very much conscious of the fact that PMDC requires a number of papers to be published on their account in order to compete for their next promotion. Simply to write an article on an established theorem in the text books is not a desirable act. The reviewers and the editors of the scientific journals are mostly experienced teachers and they are well versed with the various topics intended for publication.

Therefore the writer should avoid such repetition of facts in order to avoid disappointment if the article is rejected, which will be a wastage of time and energy. In fact we consider it a dereliction of responsibility on the part of a supervisor who should be very careful in selecting and approving the subject for their trainees, keeping an eye on the instructions streamlined by Higher Education Commission, Pakistan Medical & Dental Council, College of Physicians & Surgeons, Pakistan and Ethical Committee of the hospital. In fact every teaching hospital/institution should have an Ethical Committee and the PMDC should regularly watch its research activities. College of Physicians & Surgeons used to hold mandatory workshops on research methodology for the postgraduates and junior consultants in the past imparting basic training for writing papers and conducting research which are no longer practiced.

In this context, the Ophthalmology Update has adopted a very strict policy to discourage the plagiarized material or repetition of the established facts in their articles. Hence the researchers should be very careful in sending us their article which will be returned to them after review, causing great disappointment to the writer. Hence, it is extremely important for them to discuss with the heads of the department or some senior professor before finally selecting the topic. They should get their papers reviewed by them from time to time and finally get it approved by the Ethical Committee to be forwarded to the journal for publication. There is also a word of advice to the reviewers to find time from their leisure to critically review the paper, thinking it to be their academic activity as well as a prime national duty.

The question arises, where the fault lies? The answer is very simple. Our generation which includes doctors and scientists have great potential in terms of manpower, equipment and finances. Unfortunately, this capacity has ever remained under-utilized. Our universities and professional institutions are the seats of excellence in higher learning and we must focus our attention on promotion of academic and research activities besides producing best physicians and surgeons. Our history tells us that “these seats of higher learning are suffering from stagnation” and we must pledge to break this attitude to make progress through research which is the only way to achieve excellence in any field.

Chief Editor
Outcome of Open Reduction & Internal Fixation in Displaced Supracondylar Humeral Fractures in Children

Muhammad Imran Khan FCPS1, Muhammad Saqib MBBS2
Muhammad Ayaz Khan FCPS3

ABSTRACT

Aim: This prospective study was conducted to know the outcome of open reduction and internal fixation in the management of displaced supracondylar fracture of humerus in children.

Settings and Designs: Prospective study.

Materials and Methods: Fifty patients with displaced supracondylar fractures admitted between May 2012 and November 2013 were recruited into the study. All patients were operated under general anesthesia within 24 h after trauma. Results were analyzed using Flynn's criteria. All patients were followed up to 3 months post-operatively.

Results: Fifty displaced supracondylar fractures of humerus, aged between 5 year and 12 years, were treated using open reduction and (K) wire fixation. Above elbow plaster of paris back slab was applied in all cases for at least 3 weeks. The slab was removed at 3 weeks and the K-wires were removed after 6 weeks and elbow range of motion exercise was started. 92% had excellent, 8% good, 0% fair and 0 had poor results at 12 th weeks. There was no iatrogenic neurological injury either for the ulnar or for the radial nerves. Only one patient had ulnar nerve palsy which improved after wire removal after 3 months. 3 patients developed superficial pin tract infection postoperatively and were treated conservatively with good healing and no long-term sequelae.

Conclusion: Open reduction and internal fixation with cross pinning proved an efficient, reliable, and safe method in the treatment of displaced supracondylar fractures of the humerus in children.

Key words: Supracondylar fracture humerus, Flynn criteria, open reduction and internal fixation

INTRODUCTION

Supracondylar fractures of the distal humerus are the most common (60%) of elbow fracture in children and represent approximately 16.6% of all fractures in children.1,2,3 Closed reduction and percutaneous pinning under fluoroscopic guidance is the procedure of choice for the treatment of these fractures whenever possible.4,5,6 The commonest type is the extension fracture, in which the condylar complex shifts postero-medially or postero-laterally after a fall on the outstretched arm, but in 2% the condylar complex shifts antero-laterally: the flexion type fracture with complications, such as neurovascular injury and compartment syndrome. There is fear of perioperative and late postoperative complications like iatrogenic nerve injury, Volkmann’s ischemic contracture, cubitus varus deformity, elbow stiffness and myositis ossificans. Other studies have described high perioperative complication rate with delayed elective surgery but none has evaluated the long term functional outcome of the patients.7

A variety of methods of treatment for displaced fractures has been recommended including closed reduction and immobilisation,8 traction by various methods9 and closed8 or open reduction10 stabilised by Kirschner (K-) wires. Although some authors are not in favour of closed reduction and immobilization,11 particularly for severe injuries, this treatment remains popular. Others recommend stabilization by K-wires for all displaced fractures.12

The aim of this study was to analyze the outcomes of open reduction and internal fixation with two crossed k-wire fixation for completely displaced supracondylar fractures in children in agency headquarter hospital Landikotal, FATA.

MATERIAL AND METHODS

In this study we included 50 children, aged 5-12 years having displaced supracondylar humeral fracture presenting with in first week of trauma. Patients having open supracondylar fracture or associated with vascular or nerve injury were not included in the study. All patients were operated from May 2012 to November 2013 in agency headquarter hospital Landikotal FATA. All the children underwent open reduction and crossed K-wire fixation with two (1-mm) K-wire. In classifying the fractures Garland classification of the supracondylar fractures of the humerus was used.

50 patients who presented to emergency with displaced supracondylar fracture of humerus meeting our inclusion criteria were admitted in the hospital. Radiographs of affected side were performed in antero-posterior and lateral projections. Evaluation of vascular and neurological status was carried out. After explanation
of the procedure, the informed consent was taken for the surgery and study. All baseline investigations were performed. Operative intervention was performed on either same day or the following morning.

All the patients were kept nothing by mouth for 6 hours before induction of general anesthesia. The patients were placed on lateral decubitus position. After thorough scrubbing and draping of the operated elbow the fracture site was approached from posterior through midline. The fracture was exposed, cleaned, reduced and fixed with two cross K-wires. Skin was closed and posterior splint was given at 90 degree flexion for 3 weeks. After discharge, all the patients were followed up at outpatient department. At 3rd postoperative week splint was removed and assessed with anteroposterior and lateral radiographs. Baumans angle and anterior humeral lines were drawn on the X-rays and values were compared with normal side. After the removal of the back slab, gentle range of motion exercises of the operated elbow were started. At 6th week the K-wires were removed. At 12th week the elbow was X-rayed again and compared with normal side and the functional and radiological outcome was assessed according to Flynn criteria.15

<table>
<thead>
<tr>
<th>Table 1: Flynn Criteria for Reduction Assessment</th>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Excellent</td>
</tr>
<tr>
<td>Good</td>
</tr>
<tr>
<td>Poor</td>
</tr>
</tbody>
</table>

RESULTS

Among the fifty patients with displaced supracondylar fractures there were 33 (66%) males and 17 (34%) females with their mean age of 7 years (range 5–12 years). Left side were involved in 35 patients (70%) and right side in 15 patients (30%). None of the patients was lost to follow-up. Forty six (92%) patients were found to have excellent results while 4 (8%) patients had good to fair results respectively. In another study18 on 71 patients, boys were 47 (66.2%) and girls were 24 (33.8%) with left elbow in 22 (30.9%) patients and having good to excellent results in 91.8% which is comparable to this study.

CONCLUSION

Open reduction and internal fixation is a better treatment option in type III displaced supracondylar fractures of the humerus in patients. There is low complication and high union rates.

REFERENCES


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From: OPHTHALMOLGY UPDATE
INTRODUCTION

Eyelids are the most exposed parts of the orbit and serve as a protective shield for the intraorbital structures. Some injuries are so severe that intraorbital structures are damaged.\(^1\) Therefore, it is mandatory to properly evaluate cases of eyelid trauma.\(^2\) There are different causes of eyelid trauma. Road traffic accidents (RTA) are the most frequent cause, other causes include domestic violence, accidental fall and sports-like activities. Bomb Blast Injuries (BBI) although rare but comparatively more common in our part of the world. Our unit is one of the easiest approachable and an important center to receive maximum trauma cases. Injuries of the eye lid range from simple lacerations to complex trauma involving lid margin, lacrimal apparatus, orbital bone and intraorbital structures.\(^3,4\) Complicated injuries are also common and include those having tissue loss, multiple foreign bodies and wound contamination. Treatment of such complex group of injuries are quite challenging in terms of surgical outcome. It is quite common in young age group and is seen commonly in male gender.\(^5\) Eye lid injuries are commonly seen with head and face involvement.\(^6\) In these cases other departments must be involved to manage patient properly.\(^7\)

Considering its prevalence and the possible serious complications of eyelid trauma, such as orbital fractures and involvement of intraocular structures, educating the masses for preventive measures play an important role which can help reduce its incidence.\(^8\) Our study highlighted the anatomical features of the eyelid trauma, in terms of location, size, depth of laceration and complications such as bone fracture and globe perforation. Also we determined the association between cause and surgical outcome of eyelid repair.

METHODOLOGY

Objective: To evaluate pattern of eyelid trauma presented in a tertiary care Hospital of KPK.

Study Design: Prospective, interventional case series.

Place and duration: The study was conducted at the Department of Ophthalmology, Govt. Lady Reading Hospital, Peshawar from July 2011 to Jan 2013.

Sampling Technique: Convenience (non-probability sampling).

Sample size: 163 patients having eyelid trauma attended the Ophthalmology Department for management.

Data Collection Procedures: Patients were selected from the Ophthalmology Out Patients Department of the Govt. Lady Reading Hospital, Peshawar according to selection criteria. Diagnosis was based on history and routine ophthalmic examination. Detail assessment of eyelid as well as of face, neck and intraocular structures were made. Written consent of all the patients included in the study was taken after fully explaining the procedure and purpose of the study to the patients.

Follow-ups: Patients had a follow-up on day one, at 4 months and then last follow-up at 1 year.

ABSTRACT:

Objective: To evaluate the pattern of eyelid trauma presented in a tertiary care Hospital of KPK.

Material and Methods: prospective, interventional case series. The study was carried out at the Department of Ophthalmology, Govt. Lady Reading Hospital, Peshawar from July 2011 to Jan 2013. We received 163 cases from outdoor department for surgical management. Data was collected on special proforma and was analyzed with the help of SPSS Version 16.

Results: The study comprised of 163 cases of eyelid trauma. Male to female ratio was 1.5:1. Age ranged between 01 to 40 years (Mean = 25 years). About 47.2% patients were between 21 and 40 years. The most common cause of eyelid trauma was road traffic accident 36.8%, lower lid was commonly involved 80.9%, globe perforation was noted in 14.1% cases.

Conclusion: Commonest cause of eyelid trauma in our setup is RTA. BBI related lacerations have poorest surgical outcome. Lower lid was commonest location and intraorbital injury was seen in BBI and RTA related trauma. Early referral and timely repair offer the best outcome and to educate the masses regarding preventive measures to reduce its incidence.

Key words: eyelid trauma, road traffic accidents, bomb blast injury.

INTRODUCTION

Eyelids are the most exposed parts of the orbit and serve as a protective shield for the intraorbital structures. Some injuries are so severe that intraorbital structures are damaged.\(^1\) Therefore, it is mandatory to properly evaluate cases of eyelid trauma.\(^2\) There are different causes of eyelid trauma. Road traffic accidents (RTA) are the most frequent cause, other causes include domestic violence, accidental fall and sports-like activities. Bomb Blast Injuries (BBI) although rare but comparatively more common in our part of the world. Our unit is one of the easiest approachable and an important center to receive maximum trauma cases. Injuries of the eye lid range from simple lacerations to complex trauma involving lid margin, lacrimal apparatus, orbital bone and intraorbital structures.\(^3,4\) Complicated injuries are also common and include those having tissue loss, multiple foreign bodies and wound contamination. Treatment of such complex group of injuries are quite challenging in terms of surgical outcome. It is quite common in young age group and is seen commonly in male gender.\(^5\) Eye lid injuries are commonly seen with head and face involvement.\(^6\) In these cases other departments must be involved to manage patient properly.\(^7\)

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Follow-ups: Patients had a follow-up on day one, at 4 months, 6 months and then last follow up at 1 year.
**Data analysis:** The data were analyzed by software SPSS (version 10.0). Frequencies and percentages were calculated for cause, anatomical location of eyelid injury, associated involvement of lacrimal apparatus, globe and face.

**RESULTS**

We evaluated 163 cases of eyelid trauma patients for management. We admitted 85 patients for emergency repair. The rest of the cases were managed in the operation theatre without admission. The most common cause of trauma was RTA and it was seen in 60 (36.8%) cases followed by sports related injury which were seen in 45 (27.6%) cases. BBI were seen in 34 (20.8%) cases of domestic violence contributed 27 (16.5%) cases. (Table 1). Majority 98 (60.1%) cases of our patients were male (Table 2) and have age ranges from one to 40 years. (84%) (Table 3); right eye was involved in most cases. Regarding pattern of eyelid trauma, lower lid was most common location of eyelid trauma. (80.9%). Upper lid was involved in only 19% cases. Canaliculal involvement was noted in 39 (23.9%) cases. tissue loss was seen in 61 (37.4%) cases. foreign bodies were seen in 29 (1.22%) cases. wound contamination was seen in those cases mainly who presented late and constitute 22.6% cases; lid margin was seen in 49 (30.6%) cases. Globe perforation was noted in 55 (33.7%) cases and orbital fracture in 23 (14.1%) cases. (Table 4)

**DISCUSSION**

In our study we evaluated 163 cases of eyelid trauma presented to our unit in one and half years. Most of these injuries were mild to moderate and only simple laceration without any additional co-morbidity was seen. There are different causes of eyelid trauma. RTA is the most common cause.9 In our study, we noted RTA (36.8%) is the most common cause followed by BBI (20.8%). The other most frequent cause is domestic violence and sports related trauma. BBI represent a challenge as it causes multiple complex injury ranges from lid laceration to globe rupture. In 67.3% cases of eyelid wounds, ocular injuries coexisted.1 In our study globe perforation was noted in 33.7% cases. Secondly, extensive tissue loss as well as foreign bodies and wound contamination was commonly seen in BBI. In many studies, most common location in eyelid trauma is upper lid10 but in our study the most common location of eyelid trauma is lower lid. Involvement of lacrimal apparatus is also common and represents a challenge11 and we saw these injuries in 23.9% cases. The surgical outcome of injury involving eyelid structure other than lower lid was also seen. Late presentation was seen in 51 cases and in these cases we noted wound contamination and infection. Trauma is commonly seen in young, productive age as these people of the society are more exposed to outside environment.12,13 there is also an increased prevalence seen in male patients 61.1% and more than 80% cases of our patients have age ranges from one year to 40 years.

**CONCLUSION**

Commonest cause of eyelid trauma in our setup is RTA. BBI related lacerations have poorest surgical outcome. Lower lid was commonest location and intraorbital injury was commonly seen in BBI and RTA related trauma. Early referral and timely repair offer the best outcome and to educate masses for preventive measures are the best means to reduce its incidence.
REFERENCES
1. Lima-Gómez V, Mora-Pérez E. Ocular lesions associated with lid wounds with or without tear duct affection. Cir Cir. 2006 Jan-Feb;74(1):11-4.

Toy Laser Burn – Maculopathy

Children developed maculopathy following exposure to these laser devices, with a vitelliform-like maculopathy in the acute phase. Similar macular disturbance has been reported following exposure to laser pointers in children. (NewsNet Service)
Endoscopic Dilatation for stricture Oesophagus in Children
(an experience at Lady Reading Hospital, Peshawar)

Muhammad Uzair FCPS (Peads. surgery)¹, Prof. Kifayat Khan FCPS (Peads Surgery)²
Muhammad Khan Wazir FCPS (General Surgery)³, Afzal Khan MBBS⁴, Arshad Kamal FCPS⁵
Mussarat Hussain FCPS (General Surgery)⁶, Hafzurrehman MBBS⁷, Muhammad Fayyaz MBBS⁸
Muhammad Younus Khan FCPS (Peads surgery)⁹

ABSTRACT
Objective: To determine the safety and effectiveness of endoscopic oesophageal dilatation in stricture oesophagus in children.

Material and Methods: This descriptive study was conducted in the department of paediatric surgery, Postgraduate Medical Institute Lady Reading Hospital Peshawar from January 2011 to December 2013. All patients in whom diagnosis of stricture esophagus was confirmed by barium meal were included. Patients were admitted to hospital and informed consent taken from parents/caregivers. After an overnight fasting, under general endotracheal anaesthesia, a guide wire was passed under endoscopic guidance across the stricture. Savary Gillard dilators were passed over the guide wire of increasing size. Follow up sessions were scheduled according to development of dysphagia.

Results: A total of 32 patients aged between 6 months to 11 years were studied during this period. Two patients lost follow up and were excluded from study, out of these 30 patients 08 females and 22 males patients, mean age being 3.66±2.23 years. The types of stricture noted were: post corrosive intake 17 (56.6%) patients, peptic 7 (23.3%), postoperative 4 (13.3%), and congenital stricture in 2 (6.6%) patients. Successful dilatation up to 15mm was achieved in 27 (90.0%) patients. Two patients underwent surgery after treatment failure and one was refractory to multiple sessions of dilatation and was planned for surgery. No major morbidity nor any mortality was noted during study period.

Conclusion: Endoscopic dilatation of stricture oesophagus in children is an effective and safe way of management for stricture oesophagus of variant aetiologies and is easy to perform and offer great relief of dysphagia with low rate of complications.

INTRODUCTION
Oesophageal strictures in children may be congenital or acquired. Acquired form results from injuries to the oesophageal wall with subsequent thickening of its layers and eventual development of fibrosis. Patients have high morbidity with severe consequences such as malnutrition, food impaction and pulmonary aspiration. The aim of the treatment of oesophageal stricture is to alleviate dysphagia and to prevent recurrence and oesophageal narrowing and its complications.

The treatment options include endoscopic dilatation, use of removable self-expanding intraluminal stents and surgical management. Surgical intervention has high mortality and uncertain results and is therefore reserve for cases not responsive to endoscopic dilatation. Endoscopic wire guided dilatation is preferred for oesophageal aetiologies, as it is easy to use and offer great relief of dysphagia with low rate of complication. The aim of this study is to assess the safety and effectiveness of endoscopic wire guided dilatation of oesophageal stricture of various aetiologies in children.

MATERIAL AND METHODS
This prospective descriptive study was conducted in the department of Paediatric Surgery, Postgraduate Medical Institute, Lady Reading Hospital, Peshawar from January 2011 to December 2013. A total of 30 patients were studied during this period (two patients excluded because of lost follow up). Initial assessment consisted of detail history, clinical examination and review of contrast enhanced radiological examination of the oesophagus. All these patients were admitted to paediatric surgery ward after explaining to parents the whole protocol; disease diagnosis, management and possible complications of the procedure, that might arise during treatment or after. An informed written consent was taken before the procedure. After an overnight fasting all these patients underwent general endotracheal anaesthesia, soft tip metallic guide wire was passed across the stricture with the help of endoscope.
without fluoroscopy. Savary Gillard plastic dilator of increasing size were passed over the soft tip guide wire, started from smallest diameter (5mm) and the session continue with progressive increase in dilator size according to age of patient and relief of symptoms. The ideal final diameter of oesophageal lumen based on clinical parameters used in the follow up period were relief of dysphagia, weight gain and the interval between dilatation sessions. Patients were considered cured when not needing endoscopic dilatation for 4 months.

After the procedure nasogastric tube was passed and patients were kept nothing by mouth for 8-12 hours. Nasogastric tube was removed on 1st post-operative day and gradual introduction of liquid sips, semi-solid food and finally fully allowed oral diets. All patients were advised follow up to outdoor department at interval of 2 weeks and earlier if develops dysphagia or vomiting. Post-operatively all patients were put on oral antibiotics for 7 days and oral proton pump inhibitors for 4 weeks to prevent GERD and to decrease stricture recurrence and need for repeat dilatation.

RESULTS

A total of 30 patients were included, age ranging between 6 months and 11 years, with mean age 3.66±2.23 years. 08 (26.6%) were females and 22(73.3%) were male. These patients were subjected to 197 sessions with a range of 2-15 sessions per patients (Mean 6.56 sessions). Predominant cause of stricture oesophagus was secondary to corrosive intake 17 patients (56.6%), followed by peptic stricture 7 patients (23.3%), postoperative stricture 4 (13.3%) of these two patients were post trachea-oesophageal fistula repair surgery (6.6%), one operated for inflammatory pseudotumor of esophagus (3.3%) and one post fundoplication for achalasia cardia (3.3%), and congenital stricture 2 patients (6.6%).

Successful dilatation up to 15 mm size of dilator was achieved in 27 patients (90%) and were discharged from dilatation sessions before the end of this study, two patients (6.6%) underwent surgery because of no response to endoscopic dilatations. One post operative patient in whom surgery was performed for inflammatory pseudotumor of esophagus is under sessions of dilatation with poor response even after 13 sessions. 02 patients managed for oesophageal stricture during this study period were not included because of lost follow up after first successful sessions. Generally patients with corrosive strictures were resistant to dilatation and needed more sessions compared to other types of stricture ie postoperative, GERD induced and congenital strictures. Aetiology, mean age of presentation and outcome are presented in table 1 & 2.

DISCUSSION

Oesophageal strictures in children are varied; the majority cases of stricture oesophagus are congenital, post corrosive intake, post-operative and peptic due to GERD. Corrosive intake is the commonest cause of stricture oesophagus in developing country like Pakistan and India, while in developed countries it is the postoperative, with highest prevalence.

Management of oesophageal strictures in children are still a challenge to the paediatrician, surgeon and the gastroenterologist inspite of the great advances and different therapeutic options currently in use. The last decade witnessed a shift to more interventional endoscopic dilatation on the expense of surgical replacement, most authority recommend that every effort should be made to preserve patients own oesophagus. Our study describes a developing country experience with semi-rigid guide wire guided Savoury Gillard Dilator in children.

Corrosive oesophageal strictures in children are predominant, and in our study 17 cases 56.6% were corrosive induced, similar reports are present from other developing countries. These strictures tend to be long, tortuous, and rigid and require more sessions of dilatation as compared to postoperative or peptic strictures, and as seen in Adnan MH et al study that corrosive strictures required more dilatation sessions (7.9±5.5) and lower discharge rate (77%) as compared to other causes of stricture. Further, corrosive stricture carry more risk for perforation.

Gastro-oesophageal reflux (GER) is a common disorder in children; however, only 1.5% children with

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**Table-1: Etiological classification and mean age of presentation**

<table>
<thead>
<tr>
<th>Type of stricture</th>
<th>Frequency</th>
<th>Age of presentation (yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive induced</td>
<td>17 (56.6%)</td>
<td>4.5</td>
</tr>
<tr>
<td>GERD associated</td>
<td>07 (23.3%)</td>
<td>2.28</td>
</tr>
<tr>
<td>Post surgical</td>
<td>04 (13.3%)</td>
<td>3.75</td>
</tr>
<tr>
<td>Congenital</td>
<td>02 (6.6%)</td>
<td>1.25</td>
</tr>
</tbody>
</table>

**Table-2: Dilatation sessions required and Outcome of endoscopic dilatation**

<table>
<thead>
<tr>
<th>characteristic</th>
<th>Corrosive induced</th>
<th>GERD associated</th>
<th>Post surgical</th>
<th>congenital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>17</td>
<td>07</td>
<td>04</td>
<td>02</td>
</tr>
<tr>
<td>Number of dilatation sessions</td>
<td>137</td>
<td>30</td>
<td>23</td>
<td>07</td>
</tr>
<tr>
<td>Sessions/case</td>
<td>8.05</td>
<td>4.3</td>
<td>5.75</td>
<td>3.5</td>
</tr>
<tr>
<td>Successfully treated cases</td>
<td>15</td>
<td>07</td>
<td>03</td>
<td>02</td>
</tr>
<tr>
<td>Required surgery</td>
<td>02</td>
<td>00</td>
<td>01</td>
<td>00</td>
</tr>
<tr>
<td>Perforation as complication</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Overall success</td>
<td>88.23%</td>
<td>100%</td>
<td>75%</td>
<td>100%</td>
</tr>
</tbody>
</table>
severe gastro esophageal reflux are reported to have stricture esophagus. In our series 23.33% patients had strictures secondary to GER. Generally peptic strictures show a good response to endoscopic dilatation with combination of proton pump inhibitors. However if esophagitis persists and there is associated hiatal hernia, response to endoscopic dilatation is poor.

Strictures secondary to surgical repair of oesophageal atresia or surgical treatment of corrosive strictures usually show better response to endoscopic dilatation, requiring less sessions of dilatation to achieve the desired oesophageal intraluminal diameter. Postoperative oesophageal stricture was managed in 13.33% of children in our study. In these patients prior surgeries were performed for tracheoesophageal fistula (2 patients), inflammatory psuedotumor of oesophagus (one patient) and one post fundoplication for achalasia cardia.

Congenital oesophageal strictures are relatively uncommon with incidence of 1:25000 to 50000 live births with various aetiology. Different studies with echoendoscopy have been used to find aetiology and plan management. Conservative management yields good results and surgery is reserved for refractory cases. In two of our patients the underlying cause of oesophageal stricture was congenital. All were managed with Savoury Gillard Dilator.

Oesophageal rupture is the most serious complication of oesophageal dilatation. In our study, fortunately, we didn’t encounter this complication. Generally the incidence of this complication is low and reported to be 0.8% in a large series of 257 dilatations performed by Adnan MH et al. In his study both cases were diagnosed early and were recovered with conservative management. Early diagnosis of oesophageal perforation with rapid implementation of treatment is the most important prognostic factor for reducing morbidity and mortality among these patients.

Treatment failure, cost and rate of complications are the major limiting factors in application of different procedure in the management of oesophageal stricture. Oesophageal strictures can be dilated with balloons or boogies without much difference regarding efficacy and rate of complications. However, Balloons are more costly than durable boogies but less traumatic. The anatomical and endoscopic characteristics of the stricture, the experience of the endoscopist and the time of presentation of the stricture whether early or delayed also effects the preference for choice of instrument used. Other techniques reported in the literature for management of oesophageal stricture in children are injection of corticosteroids into the stricture or topical Mitomycin C application and temporary non-metal stents. These have primarily been reported for use in the setting of refractory strictures.

Endoscopic dilatation is very effective way of treating stricture oesophagus in children. Efficacy reported is in strictures secondary to corrosive ingestion which ranges 60 to 80%. In our study it was 88.2% successful in corrosive induced stricture oesophagus while overall efficacy is 90%. In addition to corrosive induced stricture one patient who has postoperative stricture who had failed to cure with endoscopic dilatation. In this patient surgery was performed initially for inflammatory pseudotumor of oesophagus and now having complaints of dysphagia even after 13 dilatation sessions and is planned to treat with surgery. However, GERD induced and congenital oesophageal strictures responded well to endoscopic dilatation and all these patients cured in our study without complications.

CONCLUSION

Our study shows that endoscopic dilatation of stricture oesophagus in children is an effective and safe way of management for stricture oesophagus of variant aetiologies. It is easy to perform and offer great relief of dysphagia and has low rate of complications. Low cost and short hospital stay make this procedure more attractive specially for resource-limited countries like ours.

REFERENCES

13. Ekberg O, Borgstorm A, Fork FT, Lovadahl E.Endoscopic ba-


Role of Prophylactic Antibiotic in Prevention of Wound Infections following Lichtenstein Inguinal Hernioplasty

Siddique Ahmad FCPS (General Surgery), Yousaf Jan FCPS (General Surgery)\(^1\), Waqas MBBS\(^3\), Shaukat Hussain MBBS\(^4\), Aurangzeb Khan MBBS\(^5\)

ABSTRACT:

**Background:** Inguinal hernia is one of the commonest conditions encountered in clinical practice. Mesh repair is becoming the most popular technique for inguinal hernia repair. The use of antibiotic prophylaxis during Lichtenstein inguinal hernia surgery is controversial.

**Objective:** To determine the role of single dose intravenous antibiotic prophylaxis over no antibiotic prophylaxis in the prevention of wound infection following Lichtenstein inguinal hernioplasty in patients with no other co-morbid conditions.

**Methods:** This prospective study was conducted at surgical unit Hayatabad Medical Complex Peshawar from March 2010 to August 2011. A total of first consecutive 150 cases of inguinal hernia were randomized to receive 1.5 gram intravenous cefuroxime (group-A) before the incision or an equal volume of placebo (group-B). All patients underwent Lichtenstein inguinal hernioplasty with prolene mesh electively under spinal anaesthesia.

**Results:** A total of 150 patients were included in the study. Minimum age of patients in this study was 20 years and maximum 75 years with a mean of 44.06 in group A and 44.84 in group B. The total number of wound infections was 7 (4.0%), 2 (2.66%) in the group A and 6 (8%) in group B.

**Conclusion:** We conclude that there is no benefit of intravenous single dose antibiotic prophylaxis in the prevention of wound infection following Lichtenstein inguinal hernioplasty in patients with no other co-morbid conditions.

**Keywords:** Inguinal hernia, Lichtenstein repair, antibiotic prophylaxis.

INTRODUCTION

Hernia constitutes 10-15% of all surgical procedures, 80% being inguinal.\(^1\) It is more common in males than females in a ratio of 20:1.\(^2\) Of the various methods for adult inguinal hernia repair, mesh repair is rapidly becoming the most popular technique. Of the open mesh repair technique, Lichtenstein hernia repair is most frequently performed. This technique is a tension free repair of weakened inguinal floor using a polypropylene mesh.\(^3\)

Antibiotic prophylaxis refers to a very brief course of an antimicrobial agent initiated just before an operation begins.\(^4\) Intravenous route is the mode of prophylactic antibiotic delivery used most often in modern surgical practice.\(^5\) The ideal timing in prophylaxis for optimal serum drug level is 30-60 min before surgical incision,\(^6\) and postoperative administration of antibiotics is now generally considered to be of no benefit in routine practice.\(^7\) Recommendations are clear for their use in contaminated and clean-contaminated cases but picture is not so clear in clean surgical cases. Open inguinal hernia repair using prosthetic mesh is an example of such clean cases where the preoperative use of antibiotics is debated.

Surgical site infection (SSI) is the most frequent complication in inguinal herniorrhaphy.\(^8\) Reported rate of wound infection following inguinal hernioplasty vary from 0%-9%.\(^9\) To prevent this mesh infection, antibiotic prophylaxis is often indicated and recommended.\(^10\) The use of antibiotics for prophylaxis is becoming a serious problem due to the risk of contribution to developing bacterial resistance and the significant increase in health care costs.\(^11\) Effective prophylaxis can almost always be achieved with a single dose of antibiotic.\(^12\) Wound infection after hernia repair has been associated with a four–fold increase in the recurrence rate.\(^13\)

There is no clear consensus on whether or not antibiotic prophylaxis is effective in elective inguinal hernia repair. The European Hernia Guidelines advise that there is no indication for routine use of antibiotic prophylaxis in elective open or laparoscopic groin hernia repair in low risk patients, but that prophylaxis should be considered for patients with risk factors for wound infections like age > 70 years, with co-morbidities, duration of surgery and routine use of drain- age and prosthesis. One randomised controlled trial recently found no significant difference in risk of infection between use of prophylaxis and placebo.\(^15\)
In an effort to clarify the effectiveness of antibiotic prophylaxis, we conducted this study to document the effect of pre-operative antibiotics in the wound infections after Lichtenstein hernia repair.

Objective: To determine the role of single dose intravenous antibiotic prophylaxis over no antibiotic prophylaxis in the prevention of wound infection following Lichtenstein inguinal hernioplasty in patients with no other co-morbid conditions.

MATERIAL AND METHODS

After having permission from the Ethical committee of the hospital, this prospective study was conducted at Hayatabad Medical Complex Peshawar from March 2010 to August 2011. A total of 150 patients with inguinal hernia, never had an allergy to cephalosporin. Those aged over 20 years old were included after informed consents obtained. Patients with age < 20 years, obstructed/strangulated/recurrent hernia, allergic to injection cefuroxime, immunosuppressive diseases (diabetes mellitus, HIV, malignancy), known liver or renal impairment, patients on steroid or antibiotic within a week before surgery, huge or scrotal hernia were excluded from the study.

All patients were admitted in the ward through an OPD and evaluated carefully preoperatively. These patients underwent a thorough physical and clinical examination, noting the history of illness, site of hernia, duration and type of hernia. Routine investigations were sent in all patients and fitness for general anaesthesia was assessed. The patients were guided and explained about the nature of the study. Risks and benefits of the prophylactic antibiotics were discussed and informed consent to be included was taken.

All included patients were equally divided into two groups by simple random sampling technique. Group A (n=75) antibiotic prophylaxis group and Group B (n=75) no antibiotic prophylaxis group (placebo). Group A patients (trial group) were given 1.5 gram cefuroxime in 10 ml distilled water intravenously 30 minutes before surgery after test dose, and group B (placebo group) were given 10 ml normal saline as placebo at the same time. Under strict aseptic conditions and spinal anaesthesia, all patients underwent open Lichtenstein inguinal hernioplasty using monofilament polypropylene mesh which was fixed with 2/0 prolene by senior registrars or consultants. Operative findings and time was recorded.

Patients were discharged on second postoperative day, and the wounds were inspected at the time of discharge while the first dressing changed. They were called in the out-patient department for follow up at 8 days, 2 weeks and 30 days postoperatively for assessment of wound infection and other complications. During each follow up visit, detailed history regarding presence or absence of pain over the incision site, redness, local bulging, any discharge from the wound were taken, and local examination was done to look for erythema, heat, tenderness and any discharge from the wound for C/S. Any patient showing signs of wound infection was appropriately treated and all records were maintained.

Wound infection: It was defined as following.16
• purulent discharge from the incision site, with or without positive culture and sensitivity report
• Non purulent discharge from incision site with positive culture and sensitivity report
• Incision site deliberately opened by surgeons in the presence of least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness or heat.
• Diagnosis of infection by the surgeon.

Category of wound infection:
• Superficial incisional surgical site infection: Infection occurring within 30 days after surgery involved only skin and/or subcutaneous tissue.
• Deep incisional surgical site infection: Infection occurring within 1 year after surgery involving fascial muscle layers and also the mesh.

RESULTS

Total of 150 patients, seventy five in each group were enrolled into the study. All of the patients were males. Minimum age of patients in this study was 20 years and maximum 75 years with a mean of 44.06 in group A and 44.84 in group B. Maximum number of patients were between 31 years to 60 years of age (Table 1). Duration of illness ranged from 3 month to 17 years. Surgery duration ranged from 45 minutes to 75 minutes. Out of 150 patients, 97 (64.6%) patients had right sided, 52 (34.6%) patients had left sided and 26(17.3%) had bilateral hernia (Table-1)

Postoperative complications during hospital stay:
Out of 150 patients, 5 patients (3.28%) went into urinary retention needed Foley's catheterization in the ward. Three patients (2%) developed scrotal hematoma treated by scrotal elevation. Four patients (5.33%) in group A and 3 (4%) in group B had increasing wound pain subsided with oral analgesics. None of the patient had wound infection or systemic complication like chest infection, DVT during hospital stay (Table-2)

Treatment outcome at first follow up at 8 day:
Out of 75 patients in group A, only one patient (1.33%) had purulent wound discharge as compared to three patients (4%) in group B. Suture were opened, pus drained and sent for gram stain and culture sensitivity. Patients was advised for oral cefuroxime 250 mg for 5 days with daily dressing. On follow up culture showed no growth except in one patient showing growth of staphylococcus aureus.
sensitive to Nafcillin and Augmentin. Three patients (4%) in group A had wound tenderness with edema treated conservatively (Table 3). Two patients (2.66%) in group A and one patient (1.33%) in group B had bruises around the wound. Two out of three patients with scrotal hematoma developed during hospital stay subsided at first follow up and stitches were removed.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Group A (n=75)</th>
<th>Group B (n=75)</th>
<th>Total (n=150)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>08 (10.6%)</td>
<td>06 (8%)</td>
<td>14 (9.3%)</td>
<td>0.8614</td>
</tr>
<tr>
<td>31-40</td>
<td>20 (26.6%)</td>
<td>12 (16%)</td>
<td>32 (21.3%)</td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>22 (29.3%)</td>
<td>24 (32%)</td>
<td>46 (30.6%)</td>
<td></td>
</tr>
<tr>
<td>51-60</td>
<td>25 (33.3%)</td>
<td>20 (26.6%)</td>
<td>45 (30%)</td>
<td></td>
</tr>
<tr>
<td>60-70</td>
<td>12 (16%)</td>
<td>08 (10.6%)</td>
<td>20 (13.3%)</td>
<td></td>
</tr>
<tr>
<td>&gt; 70</td>
<td>10 (13.3%)</td>
<td>08 (10.6%)</td>
<td>18 (12%)</td>
<td></td>
</tr>
<tr>
<td>Sex distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>75 (100%)</td>
<td>75 (100%)</td>
<td>150 (100%)</td>
<td>1.000</td>
</tr>
<tr>
<td>Females</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Duration of illness in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>45 (60%)</td>
<td>36 (48%)</td>
<td>81 (54%)</td>
<td>0.1659</td>
</tr>
<tr>
<td>&gt; 1 year</td>
<td>62 (82.6%)</td>
<td>32 (42.6%)</td>
<td>94 (62.6%)</td>
<td></td>
</tr>
<tr>
<td>Side distribution of hernia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>60 (80%)</td>
<td>37 (49.3%)</td>
<td>97 (64.6%)</td>
<td>0.6771</td>
</tr>
<tr>
<td>Left</td>
<td>35 (46.6%)</td>
<td>17 (22.6%)</td>
<td>52 (34.6%)</td>
<td></td>
</tr>
<tr>
<td>Bilateral</td>
<td>15 (20%)</td>
<td>11 (14.6%)</td>
<td>26 (17.3%)</td>
<td></td>
</tr>
<tr>
<td>Duration of surgery in mint</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 50</td>
<td>58 (77.3%)</td>
<td>52 (69.3%)</td>
<td>75 (50%)</td>
<td>0.3560</td>
</tr>
<tr>
<td>&gt; 50</td>
<td>17 (22.6%)</td>
<td>23 (30.6%)</td>
<td>75 (50%)</td>
<td></td>
</tr>
</tbody>
</table>

**Table-1: Baseline characteristics of both groups**

<table>
<thead>
<tr>
<th>Complications</th>
<th>Group A (n=75)</th>
<th>Group B (n=75)</th>
<th>Total (n=150)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary retention</td>
<td>2 (2.66%)</td>
<td>3 (4%)</td>
<td>5 (3.33%)</td>
<td>0.6492</td>
</tr>
<tr>
<td>Scrotal hematoma</td>
<td>1 (1.33%)</td>
<td>2 (2.66%)</td>
<td>3 (2%)</td>
<td>0.5598</td>
</tr>
<tr>
<td>Wound discharge</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.00</td>
</tr>
<tr>
<td>Wound pain</td>
<td>4 (5.33%)</td>
<td>3 (4%)</td>
<td>7 (4.66%)</td>
<td>0.6987</td>
</tr>
<tr>
<td>Wound infection</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.000</td>
</tr>
</tbody>
</table>

**Table-2: Post op complications during hospital stay**

<table>
<thead>
<tr>
<th>Complications</th>
<th>Antibiotic prophylaxis group (n = 75)</th>
<th>No antibiotic prophylaxis group (n = 75)</th>
<th>Total n =150</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound infection</td>
<td>1 (1.33%)</td>
<td>3 (4%)</td>
<td>4(2.66%)</td>
<td>0.3128</td>
</tr>
<tr>
<td>Wound tenderness and edema</td>
<td>3 (4%)</td>
<td>0</td>
<td>3 (2%)</td>
<td>1.000</td>
</tr>
<tr>
<td>Wound bruises</td>
<td>2 (2.66%)</td>
<td>1 (1.33%)</td>
<td>3 (2%)</td>
<td>0.5598</td>
</tr>
<tr>
<td>Wound discharge</td>
<td>1 (1.33%)</td>
<td>3 (4%)</td>
<td>4 (2.66%)</td>
<td>0.3128</td>
</tr>
<tr>
<td>Scrotal hematoma</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Table-3: Complications at first follow up**

_Treatment outcome at second follow up at 14 days:_ None of the patients from both groups had wound infection at this follow up. One patient from Group A and three patients from Group B who had wound infections during first follow up were also fine and there were no persistence of infection. Three patients (2%) one from group A (1.33%) and two from group B (2.66%) had intermittent wound pain treated with oral diclofenac sodium 75 mg. None of the patient in both groups had scrotal hematoma or wound discharge.

_Treatment outcome at third follow up at 30 days:_ There were total of 150 patients 75 in each group. Three patients (4%) from group B and one patient (1.33%) from group A had non purulent wound discharge. On C/S report, 2 patients out of three in group B and one patient from group A had positive results with growth of staphylococcus epidermidis in each patient from both groups and Escherichia Coli in second group B patient. All three wound infections were treated with oral vancomycin and ciprofloxacin respectively according to sensitivity report and sutured were opened. None of the patients from both groups had hernia recurrence, testicular atrophy and scrotal hematoma.

The overall rate of wound infection was 7 (4.66%),
Role of Prophylactic Antibiotic in Prevention of Wound Infections following Lichtenstein Inguinal Hernioplasty

two (2.66%) in group A and five (6.66%) in group B. Although not included in the study three patients (2%) developed scrotal hematoma, one (1.33%) in group A and two (2.66%) in group B. Eight patients (5.33%) had wound discharge, two (2.66%) in group A and six (8%) in group B. Three patients (2%) had wound bruises, one (1.33%) in group A and two (2.66%) in group B (Table 4).

Table 4: Overall comparison of complications in both groups

<table>
<thead>
<tr>
<th>Complications</th>
<th>Group A (n=75)</th>
<th>Group B (n=75)</th>
<th>Total (n=150)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound infection</td>
<td>2 (2.66%)</td>
<td>5 (6.66%)</td>
<td>7 (04%)</td>
<td>0.2462</td>
</tr>
<tr>
<td>Scrotal hematoma</td>
<td>1 (1.33%)</td>
<td>2 (2.66%)</td>
<td>3 (02%)</td>
<td>0.5598</td>
</tr>
<tr>
<td>Wound discharge</td>
<td>2 (2.66%)</td>
<td>6 (08%)</td>
<td>8 (5.33%)</td>
<td>0.1412</td>
</tr>
<tr>
<td>Wound pain</td>
<td>5 (6.66%)</td>
<td>5 (6.66%)</td>
<td>10 (6.66%)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

DISCUSSION

Inguinal hernia is the commonest problem amongst all external hernias and surgery for inguinal hernia is one of the most common procedures performed in a general surgical service, accounting for approximately one-third of all interventions. The age incidence is distributed in all decades of life. Incidence of inguinal hernia is race related and is at least three times more common in black Africans than in the white populations. Although many patients with hernia are asymptomatic, most of them have local symptoms and if left untreated, hernia itself has potential complications like irreducibility, strangulation, peritonitis and sepsis.

Of the various method for adult inguinal hernia repair, mesh repair is rapidly becoming the most popular technique. Of the open mesh repair technique, Lichtenstein hernia repair is most frequently performed. The Lichtenstein technique is a tension free repair of weakened inguinal floor using a polypropylene mesh. Recommendations are clear about prophylactic antibiotic for their use in contaminated and clean-contaminated cases but picture is not so clear in clean surgical cases. Open inguinal hernia repair using prosthetic mesh is an example of such clean cases where the pre-operative use of antibiotics is debated.

Surgical site infection (SSI) is the most frequent complication in inguinal hernioplasty. Reported rate of wound infection following inguinal hernioplasty vary from 0%-9%. To prevent this mesh infection, antibiotic prophylaxis is often indicated and recommended. The use of antibiotics for prophylaxis is becoming a serious problem due to the risk of contribution to developing bacterial resistance and the significant increase in health care costs. The low rate of wound infection and the straightforward treatment if they occur at all are the main arguments against routine antibiotic coverage during inguinal hernia surgery. However even under most scrupulous aseptic conditions and with a careful technique, post-operative wound infection still present a very serious problem.

Minimum age of patients in this study was 20 years and maximum 75 years with a mean of 44.06 in group A and 44.84 in group B. Maximum number of patients were between 31 years to 60 years of age (Table 1). Duration of illness ranged from 3 month to 17 years. Surgery duration ranged from 45 minutes to 75 minutes. Out of 150 patients, 97(63.6%) patients had right sided, 52 (34.6%) patients had left sided and 26(17.3%) had bilateral hernia.

Therefore, we conducted this study to document the effectiveness of prophylactic antibiotics in preventing wound infection following Lichtenstein inguinal hernioplasty. Total 150 patients were evaluated and they were randomized to have antibiotic prophylaxis group A (n=75) and no antibiotic prophylaxis group B (n=75). The overall rate of wound infection was 7 (4.60%), 2 (2.66%) in group A and 5(6.66%) in group B in our study. Statistical analysis showed no significance of pre-operative antibiotic prophylaxis (p-value = 0.2462).

During the first follow up, out of 150 patients (75 in each group), 1 patient (1.33%) from group A and 3 patients (4%) from group B developed wound infections. During second follow up at 14 days, none of the patients from both groups had wound infections, as compared to 1 patients (1.33%) from group A and 2 patients (2.66%) from group B developed wound infections at 30 days follow up. Therefore the overall rate of wound infection was 7 (4.0%), 2 (2.66%) in group A and 5 (6.66%) in group B in our study. A study conducted by Anfenacker and his colleagues reported 1.7% of wound infection after Lichtenstein open mesh repair and there is no significance difference between antibiotic prophylaxis and placebo group. Taylor et al conducted a prospective randomized double blind, multicentre study of 619 patients, and showed there was no statistically significant difference between antibiotic and placebo group in each centre. Perez et al and Aamir et al also showed that there was no statistically significant difference between anti-
A antibiotic and placebo group and therefore routine use of prophylactic antibiotic in Lichtenstein mesh hernioplasty is of no benefit (Table 5).

The overall rate of wound infection in our study was 7 (4.60%). This is comparable to wound infections in various studies by Aufenacker et al21 (1.7%), Yerdel et al23 (4.83%), Perez et al24 (3.03%), Otezia et al25 (0.40%, Aamirjaz et al26 (7%) Table 5.

### Table-5: Our wound infection rate comparison with different studies in both groups

<table>
<thead>
<tr>
<th></th>
<th>Antibiotic (group A)</th>
<th>No antibiotic (group B)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aufenacker et al21</td>
<td>8 (1.6%) n=503</td>
<td>9 (1.8%) n=505</td>
<td>17(1.7%) 1008</td>
</tr>
<tr>
<td>Yerdel et al23</td>
<td>1 (0.7%) n=136</td>
<td>12 (9%) n=133</td>
<td>13(4.8%) 269</td>
</tr>
<tr>
<td>Perez et al24</td>
<td>4 (2.2%) n=180</td>
<td>7 (3.9%) n=180</td>
<td>11(3.03%) 360</td>
</tr>
<tr>
<td>Otezia et al25</td>
<td>1 (0.8%) n=124</td>
<td>O (0%) n=123</td>
<td>1(0.40%) 247</td>
</tr>
<tr>
<td>Aamir et al26</td>
<td>2 (4%) n=50</td>
<td>5 (10%) n=50</td>
<td>7(7%) 100</td>
</tr>
<tr>
<td>Our study</td>
<td>2 (2.6%) n=75</td>
<td>5 (6.6%) n=75</td>
<td>7(4.0%) 175</td>
</tr>
</tbody>
</table>

The pus samples taken from all seven patients with wound infections were cultured and showed growth of Staphylococcus aureus in one case, Staphylococcus epidermidis in two cases and Escherichia Coli in one case with no growth in three cases. All patients were treated with oral antibiotics according to C/S report with drainage of the wound and mesh removal was not needed in any of the infected cases. Although not included in the study three patients (2%) developed scrotal hematoma, one (1.33%) in group A and two (2.66%) in group B. Eight patients (5.33%) had wound discharge, two (2.66%) in group A and six (8%) in group B. Three patients (2%) had wound bruises, one (1.33%) in group A and two (2.66%) in group B (Table 4). No recurrence of the hernia was noted because of the short follow up of the study.

At present, there is still no definite benefit from preoperative prophylactic antibiotic for prevention of post inguinal hernioplasty wound infections. This surgical procedure still has many measures for infection prevention like proper surgical site skin preparation, aseptic technique, patient selection, surgical technique, type of mesh graft and finally duration of surgery. From this study the authors could only explain about superficial surgical site infection. For deep surgical site infection, which is a primary endpoint, one year follow up is still needed to be done, for completion of CDC criteria.26

The shortcoming of our study was a small sample size; perhaps a large sample size could give us more thorough insight into the problem. Another subject that must be assessed in antibiotic prophylaxis is cost effectiveness. Wound infection rate could be as low as 1% in some centres, therefore the costs of antibiotic prophylaxis in such cases must be carefully evaluated against the potentials benefits.

### CONCLUSION

There is no benefit of intravenous single dose antibiotic prophylaxis in the prevention of wound infection following Lichtenstein tension free inguinal hernioplasty in patients with no other co-morbid conditions. Because large number of inguinal hernia repair performed in low risk patients (estimated 70% of all hernias) discarding the use of single dose antibiotic prophylaxis will reduce the overall financial costs of the hospitals.

Therefore we conclude from this study that in Lichtenstein inguinal hernia repair routine use of prophylactic antibiotics is not needed, except in some high risk patients such as immune-compromised or poorly controlled diabetes mellitus.

### REFERENCES

Role of Prophylactic Antibiotic in Prevention of Wound Infections following Lichtenstein Inguinal Hernioplasty


Letter to the Editor

Dear Prof. Yasin Durrani,

I have just received the new issue of Ophthalmology Update and have found the interesting articles as ALWAYS and also new features incorporated - case presentations with color photo, which will have a great impact for practicing ophthalmologists. I am happy that the drugs representing the latest advances in ocular pharmacotherapy are available in Pakistan. With many thanks and very, very best wishes,

Warmest regards,
Prof. Marianne Shahsuvaryan,
MD, Ph.D, D.Sc (Medicine)
Professor of Ophthalmology,
Yerevan State Medical University,
Republic of Armenia
INTRODUCTION
Bevacizumab (Avastin) is a recombinant humanized monoclonal IgG1 antibody that inhibits human vascular endothelial growth factor (VEGF). It has been administered intravitreally in VEGF-mediated diseases such as proliferative diabetic retinopathy, choroidal neovascularization\(^1\) and central retinal vein occlusion.\(^2\) VEGF plays a major role in mediating neovascularization in eyes with proliferative diabetic retinopathy (PDR).\(^3\) We describe a patient who had cessation of retinal neovascularization in proliferative diabetic retinopathy, one week following adjunctive intravitreal bevacizumab.

CASE REPORT
A 50-year-old, non-insulin dependent diabetic male patient presented in eye OPD with NVDs despite pan-retinal photocoagulation (PRP). On presentation, his vision was 20/25 OD and 20/20 OS. Fundus examination showed intraretinal hemorrhages in four quadrants, moderate PRP, and small macular oedema OD. There were flat new vessels on the disc (NVD) OD. There was ½ disc area of NVD, and NVEs OS.

Five weeks after further PRP, vision decreased to 20/40 OD. The examination OD showed flat NVDs. The NVDs OS had regressed following laser and vision was stable. Fluorescein angiography (Fig.1) showed extensive leakage from NVDs OD.

As the patient had persistent leakage from NVDs after aggressive PRP, he was offered intravitreal bevacizumab OD, after a full discussion of its off-label nature and potential risks. Using a sterile protocol,\(^4\) 0.05 cc (1.25 mg) of bevacizumab was injected intravitreally OD. One week later, vision measured 20/25 OD and the NVDs appeared less vascularized OD. Fluorescein angiography (Fig.2) showed cessation of leakage from NVDs. Patient’s last follow up was six weeks after injection, and on FFA, It still showed no leakage.

DISCUSSION / COMMENTS
This case illustrates cessation of leakage from NVDs 1 week following adjunctive intravitreal bevacizumab. Although it may be argued that PRP caused regression of NVDs. As PRP is the standard of care for high-risk PDR,\(^5\) it was only after maximal PRP that we offered the patient adjunctive treatment. As mentioned earlier that six weeks after injection, there was no leakage, so it can be a good adjunctive treatment along with PRP. Further studies are needed to determine the role of bevacizumab in the management of PDR.

REFERENCES
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