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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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Corneal ulcer is a very common acute clinical problem which is not properly understood and usually mismanaged. When a patient comes to a clinician, he should ask the pertinent question: Why in this Particular Patient? Unless the question is answered accurately, the patient is bound to be inadequately treated. Hence, it is advisable to treat the patient as a whole and not just the acute ophthalmic condition! What is a corneal ulcer? We must understand its pathophysiology for its proper management. A corneal ulcer is a disruption of epithelium which may or may not involve the stroma-characterized by edema and cell infiltration and if the epithelial is involved only without cell infiltration we call it an abrasion.

There are certain facts regarding the cornea:
(1) A healthy ocular surface is immune to bacterial penetration and development of an ulcer.
(2) A healthy tear film is highly protective because of its mucins that act as scavengers, restrict and prevent bacterial adherence to the intact corneal surface. Its immunoglobulins and lysozymes are further bactericidal. As far as the pathogenesis is concerned, at least one of the following three major factors should be present to produce a corneal ulcer:

a) A damaged or abraded corneal epithelium.
b) Virulent bacteria that can invade an intact corneal epithelium e.g. Neisseria gonorrhoea, N. meningitides, Corynebacterium Diphtherae.
c) Decreased host immunity: due to old age, malnutrition, TB, Hepatitis, AIDS, prolonged use of topical steroids, diabetes, auto-immune disorders. Hence, non-virulent bacteria may invade an intact corneal epithelium e.g. Streptococci, Staphlococci. Now there are 4 stages in the development of a corneal ulcer and its proper management, these stages need to be well understood:

i) Progressive Cell Infiltration: The host (patient’s) inflammatory response to bacterial penetration of corneal epithelium results in vasodilatation of peripheral corneal vessels, leakage of fluid and cells (polymorphs and lymphocytes) into the area to curb the bacterial attack. This results into the next stage and is seen as an infiltrate around the epithelial defect.

ii) Active Ulceration: The dilated, engorged vessels produce a circum-corneal congestion and a red eye. The chemical toxins released by the bacteria encourage more polys and lymphos to move into the area and attack each other, thereby releasing chemical mediators of acute inflammation e.g. cytokines and leukotriens to attract more cells into the area to fight and kill the invading bacteria. This stage is characterized by a painful, red eye, heaping up of ulcer margins due to edema and cell infiltration, a necrotic base due to destruction...
of polys, bacteria and underlying epithelium and stroma. Now this stage worsens and is prolonged if the bacteria are more virulent and the immunity of the patient is weak, until it is curbed by bactericidal drugs. As bacterial toxins penetrate the aqueous, acute inflammatory infiltrate (polys and lymphos) make the aqueous sticky and the cells settle down at the bottom of anterior chamber as a Hypopyon (a sterile cell infiltrate).

3) **Stage of Regression:** If the bacterial invasion is curbed by host’s immunity or appropriate antibiotics, vasodilatation and cell infiltration decreases as the debris at the base of ulcer is removed by macrophages, the necrotic area reduces.

4) **Stage of Cicatrification:** the last cells to invade the ulcer area are fibroblasts (the repairing cells). They lay down collagen which seals and bridges the corneal defect over which the corneal epithelium grows. The depth of this corneal scar depends on the extent of damage done by the acute inflammatory response and how quickly it is controlled.

**Complications** only arise if the acute inflammatory response is not controlled quickly and appropriately, resulting in gross ocular morbidity. However, they can all be prevented. As the epithelial defect deepens due to necrosis of its base, the thinned cornea begins to bulge outwards even in the presence of normal IOP. The inflammatory toxins entering the aqueous result in the leakage of cells and proteins from engorged iris vessels, making the iris sticky and promoting PAS. These in turn, gradually block the angle and raise the IOP. Hence iris-lens diaphragm moves forwards, AC shallows and iris sticks to the sticky endothelium. With further raise in IOP, the thinned cornea gives way, the Descemet’s membrane, a toughest structure of the cornea, first bulges out through the corneal defect but soon gives way, resulting in all the following complications.

a) Descemetocle ➔ Corneal perforation ➔ Corneal Fistula ➔ Iris Prolapse
b) Secondary Glaucoma
c) Cataract
d) Development of Uveitis, Endophthalmitis or Panophthalmitis

Now regarding management, it should on the following lines:

I) **Evaluation of the patient, laboratory investigations, use of topical and oral antibiotics.**

II) **General Therapy:** Using Cycloplegics, Lowering IOP

III) **Treating associated Lid conditions** like entropion, trichiasis, distichiasis and blephritis.

IV) **Using analgesics,** Vit C,

V) **Complete rest,** good diet and fresh air.

VI) **Efficient follow up.**

**Patient evaluation:**

1) **Find the cause of an ulcer:** trauma, Contact Lens, blepharitis, dry eye, corneal exposure, trichiasis/distichiasis. Draw the ulcer presentation in the notes to monitor treatment response:

2) **Lab Investigations:** to confirm the cause: Blood CP, ESR, Fasting Blood Sugar. Corneal Scraping at ulcer margin for Gram & Giemsa Stain, Blood Agar Culture, KOH 10% (Fungal).

3) **Management: Specific.** i) **Topical antibiotics:** Ciprofloxacin / Ofloxacin: initial loading dose: every 5 min for half an hour, then hourly for 48 hrs. After 48 hrs, evaluate the patient. If improving i.e. reduced pain, redness of the eye, lid swelling, reduced size of infiltrate / blunting of its edges, then reduce to 4x per day for 10 days and antibiotic ointment at night. If no improvement, noted then stop all treatment, re-scape and change the antibiotic. It could be a resistant infection or drug toxicity (congested lower fornix while upper is white), look for the possible fungal infection and treat accordingly on the above lines, using antifungal regime. (details in a review article on inside pages).

ii) **Oral Antibiotics** Ciprofloxacin: only for peripheral corneal ulcers (so the antibiotic can penetrate from limbal vessels. Doxycycline 100mg BD prevents corneal/scleral melting and controls lid disease.
General Therapy: Cycloplegia: pupil should be kept fully dilated to reduce pain and prevent complications like PAS, raised IOP, Iris prolapse.

4) Lower IOP: at the very start of patient presentation and continue till cornea is fully healed, in order to prevent all complications. Avoid prostaglandin analogues as they promote acute inflammation. Start with Diamox orally initially as acute inflammation prevent ocular drug penetration; as the inflammation is controlled, switch to topical drugs.

5) Treat associated lid diseases.

6) Add lubricants (preferably preservative free as preservatives add to the toxicity) in the 3rd stage once acute inflammation is under control, to wash the toxins, necrotic debris and support the ocular surface.

7) Systemic analgesics, Vitamin C (to neutralize toxins and promote ulcer healing).

8) Rest, good diet and fresh air to improve immune status of the patient.

Follow Up: Once treatment is completed, the corneal ulcer is to be followed through two stages which have to be managed appropriately to prevent long-term complications. Once the antibiotic eye drops are started, initially as a loading dose, the first follow-up should be after 48 hours and not earlier.

WHY? The antibiotic stops bacterial proliferation and invites cell infiltration to kill as well as remove the debris; the more cells (polys and lymphos) that are invited to scavenge the bacteria, there is more release of their inflammatory mediators (leukotriens and cytokines) for the initial 24 hours. Hence the patient may complain of more pain and the eye may be more red initially which should not confuse the treating clinician. Therefore, the first follow-up should be after 48 hrs when the response to therapy can be properly assessed. At this time, the antibiotic should be reduced to 4 x per day and antibiotic ointment at night after documenting a positive response. All bacteria are killed within 1 week to 10 days of therapy after which the antibiotic begins to cause toxicity to the limbal stem cells which are going to cover the epithelial defect. Hence, all antibiotic eye drops and ointment should be stopped abruptly so the ulcer can enter the healing phase. Prolonged, unnecessary use of topical antibiotics delay the healing phase and antibiotic toxicity continues to make the eye red and irritable, which is wrongly assumed to be due to continued bacterial infection or lack of response to treatment. IOP lowering and keeping the pupil fully dilated are also the mainstay of acute therapy in addition to the antibiotics. Antibiotics should never be tapered as resistant bacterial strains emerge. The follow-ups should continue every 48 hrs till healing starts.

The HEALING PHASE: Once bacteria are killed and polys and lymphos have done their job, macrophages are invited into the ulcer area to scavenge and clear up all necrotic matter from the battle-field. Once that is done, fibroblasts start laying down collagen to fill the defect over which limbal stem cells lay down the epithelium.

This important stage needs supportive therapy already mentioned above, especially lubricant eye drops (preservative free) and ointment at night which improves tissue healing. IOP lowering and pupil dilatation should continue till cornea is fully healed and congestion relieved. The follow-up in this stage can be after 3-4 days depending upon the patient’s response to therapy.

In summary the ulcer which is a very common clinical problem associated with a lot of visual morbidity if not managed properly with prompt diagnosis and appropriate treatment, can result in the above complications. The key to the management in the acute stage is appropriate broad spectrum antibiotic, full pupil dilatation and lowering of IOP. The IOP lowering eye drops should be continued well into the healing phase till total epitheliazation of the ulcer and restoration of corneal thickness occurs. The patient needs a close follow-up every 2 days initially and then weekly. As soon as the ulcer sterilization occurs (in 10 - 14 days), the use of antibiotics should be controlled.

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**Vitamin B12 Levels in Patients investigated for Optic Atrophy without Ocular or Systemic Diseases**

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**ABSTRACT**

**Purpose:** To determine levels of vitamin B12 in patients investigated for optic atrophy without any ocular or systemic diseases.

**Methods:** This retrospective review study was conducted in Khyber Teaching Hospital, Peshawar from April 2014 to April 2015. All patients with optic atrophy were investigated. Those who were diagnosed with ocular and (or) CNS or systemic co morbid conditions which would explain the optic atrophy were excluded from this study. Patients included in the study had serum vitamin B12 levels checked from a single laboratory. Automated Humphrey visual field analysis was carried out on all patients. Peripheral smear to exclude megaloblastic or pernicious anemia and neurological examination to exclude peripheral neuropathy was also carried out on all patients.

**Results:** Total number of patients in our study were 20. There were 13 males (65%) while 7 (35%) females comprised our study group. Mean age of the patients was 41 years (18 years – 52 years). Visual acuity ranged from 6/6 to hand movements using the Snellen visual acuity chart. Total number of patients with reduced Vitamin B12 levels were 16 (80%). Total number of males with reduced Vitamin B12 levels were 13 (81%) while 3 (19%) females had reduced levels. Mean Serum Vitamin B12 levels in these patients was 164.92 pg/ml (96- 206 pg/ ml). Regarding visual field defects, 10 (62%) patients had central or cecocentral defects while 4 (25%) patients presented with completely wiped out visual fields. Optic disc findings in 9 (56%) patients included temporal disc pallor, while 5 (31%) patients had optic atrophy. Peripheral smear revealed none of the patients had signs of megaloblastic anemia. 2 (12.5%) patients had signs of peripheral neuronal disease spectrum of vitamin B12 deficiency.

**Conclusion:** Vitamin B12 deficiency may be an under looked cause of un-explained optic atrophy with central visual fields defects.

**INTRODUCTION**

Vitamin B12 deficiency causes many neurologic manifestations. Optic neuropathy is one of the rare manifestations of vitamin B12 deficiency¹,²,³, it is a worldwide problem and affects all age groups.⁴ It is one of the most common nutritional disorders and should be suspected in patients with risk factors for malnutrition.⁵ Vitamin B12 deficiency affects the anterior visual pathway. The exact pathophysiology of how this damage takes place is still not very clear, however many clinicians agree that it is a multifactorial process and under nutrition is the principal cause of optic nerve damage.⁶ Clinically, the papillomacular bundle within the optic nerve is affected. This usually presents as temporal disc pallor, central or centro-caecal scotoma, color vision deficit and reduced visual acuity may be present.

In nutritional optic neuropathies, the optic disc may be normal or slightly hyperemic in the early stages. In a small group of patients with hyperemic discs, one could find small splinter hemorrhages on or off the disc. Several months to years later in the course of the disease, one might find papillomacular bundle dropout and temporal disc pallor, followed by optic atrophy.⁷

Systemically Vitamin B12 deficiency can cause serious developmental regression, hypotonia and cerebral atrophy in infants.⁷ Vitamin B12 deficiency not only affects the optic nerves but also has deleterious effects on spinal cord, peripheral nerves and brain. Emphasis should be given to early detection, as timely management can reverse the effects of B12 deficiency.⁸

A patient with reduced vision or optic atrophy without any systemic disorder can be due to low vitamin B12 levels. Early treatment with oral and (or) parenteral B12 supplementation may prevent severe visual loss.

**MATERIALS & METHODS**

This retrospective chart review study was conducted in Eye A Unit, Khyber Teaching Hospital. We reviewed all records of patients admitted for investigating cause of optic atrophy/disc pallor with
visual field defects from April 2014 to April 2015. All the patients had presented with complaints of gradual dimness of vision. Ophthalmic examination included checking vision using the Snellen charts, best corrected vision (BCV), pupillary responses, measurement of intraocular pressures (IOP), anterior segment evaluation including gonioscopy to exclude angle etiologies. All patients underwent dilated fundus examination using 90D (Volk®) lens and optic nerve head evaluation using 60D (Volk®) lens.

These patients were phased every 2 hours for 24 hours to exclude IOP spikes as cause of optic atrophy. All patients had Humphrey visual fields analysis and central corneal thickness measured. Patients suspected of having optic atrophy/disc pallor secondary to central nervous system ischemia or demyelination underwent MRI imaging of brain using T1W and T2W with FLAIR sequence. Hematologic investigations included full blood counts (FBC), erythrocyte sedimentation rate (ESR), peripheral smear, fasting lipid profile, prothrombin time (PT), activated partial thromboplastin time (APTT), blood sugar to exclude diabetes. All patients also had serum vitamin B12 levels analyzed from a single laboratory to maintain uniformity in results.

Patients whose optic atrophy was attributed to being caused by any type of glaucoma, ischemia of optic nerve head, cerebral ischemia and (or) demyelization, space occupying lesion of central nervous system or other secondary cause in CNS were excluded from this study. Only patients who had optic atrophy without any identifiable cause from these investigations in absence of other systemic disease were included in study. Patients included in study with above criteria, who had low Vit B12 levels had a physician consult to exclude peripheral neuropathy.

RESULTS

Total number of patients in our study were 20. Majority of patients were males, 13 (65%) while 7 (35%) females comprised our study. Mean age of the patients was 41 years (18 years - 52 years). All the patients presented with dimness / blurring of vision. Visual acuity ranged from 6/6 to hand movements using the Snellen visual acuity chart. None of these 20 patients had any identifiable cause of disc pallor / atrophy or systemic co morbidity.

Total number of patients with reduced Vitamin B12 levels were 16 (80%). Total number of males with reduced Vitamin B12 levels were 13 (81%) while 3 (19%) females had reduced levels. Mean Serum Vitamin B12 levels in these patients was 164.92 pg/ml (96- 206 pg/ml). Normal range of Vitamin B12 for this laboratory was 208- 936 pg/ml.

Regarding visual field defects, 10 (62%) patients had central or cecocentral defects (Figure 1) while 4 (25%) patients presented with completely wiped out visual fields. Optic disc findings in 9 (56%) patients included temporal disc pallor, while 5 (31%) patients had optic atrophy (Figure 2). Regarding color vision defects, only 2 (12.5%) had red- green desaturation as detected on Ishihara color vision testing.

In hematological profile, none of the patients with low vitamin B12 levels had signs of megaloblastic anemia or pancytopenia. 2 (12.5%) patients complained of burning feet sensations, which was attributed a part of peripheral neuronal disease spectrum of vitamin B12 deficiency. None of these patients had dyslipidemia. All patients had HbA1c below 6.5% and blood pressures below 140/90 mm/Hg.
DISCUSSION

Vitamin B12 deficiency causing optic disc pallor and (or) atrophy is a rare entity with a handful of cases reported in literature. Yet it is an important but reversible type disease which needs to be diagnosed early as treatment can prevent further deterioration of symptoms or even reverse them. According to some authors, Vit B12 deficiency should be considered in all cases of optic neuropathy because early intervention can prevent irreversible visual loss and optic atrophy. Many risk factors leading to varied etiologies have been implicated in B12 deficiency. Some of these include strict vegetable diet, excessive use of proton pump inhibitors and selective H2 blockers as antacids, alcoholism, pernicious anemia, malabsorption syndromes like Crohn’s disease, parasitic infestation and surgical procedures like bariatric surgery.

An understanding of the vitamin B12 absorption cycle helps illuminate the potential causes of deficiency. The acidic environment of the stomach facilitates the breakdown of vitamin B12 that is bound to food. Intrinsic factor, which is released by parietal cells in the stomach, binds to vitamin B12 in the duodenum. This vitamin B12–intrinsic factor complex subsequently aids in the absorption of vitamin B12 in the terminal ileum. In addition to this method of absorption, evidence supports the existence of an alternate system that is independent of intrinsic factor or even an intact terminal ileum. Approximately 1% of a large oral dose of vitamin B12 is absorbed by this second mechanism.

An experimental study conducted by Chester et al, published in 1980, looked into effects of artificially induced vitamin B12 deficiency in monkeys and its effects on visual system. Visual impairment was noted in all seven of the deficient animals that were evaluated by clinical observations. Ophthalmoscopie examination disclosed optic atrophy in six of the seven deficient monkeys. Degeneration of the visual pathway was demonstrated by pathological examination in eight of the deficient group of nine. Loss of ganglion cells was noted in the maculae of two of three deficient animals with completed studies.

A study conducted by Ozkasap et al in 2013 compared the retinal nerve fiber layer thickness (RNFL) in 66 children with diagnosis of vitamin B12 deficiency with 66 age matched normal children. The thickness of the superior retinal nerve fiber layer (RNFL) in the vitamin B12 deficiency group was significantly lower than that of the control group (p = 0.037). Although the average thickness of the RNFL was lower in the patient group, there was no statistically significant differences (p = 0.216). Chavala S et al presented a case in 2005 of a 68 years old male presenting with decreased central vision for months and was found to have low vitamin B12 levels. His condition improved following parenteral B12 therapy.

Areekul S et al reported a case of vitamin B12 deficiency optic neuropathy in a 19 years old boy following jejunum, ileum, ascending colon and transverse colon resection because of gangrene. His visual acuity was 5/200 in both eyes with centro cecal scotomas in both eyes. Other neurologic and ophthalmic examinations were found to be normal. The patient was given intramuscular injections of 1,000 micrograms of cyanocobalamin. Four months later, his visual acuity improved, serum vitamin B12 level and the bone marrow returned to be normal.
Jalil A et al\textsuperscript{16} reported a case of bilateral optic neuropathy in an 11 year old girl with low B12 levels. She presented with sudden, severe, sequential optic neuropathy. She was treated with steroids followed by plasma exchange, but the vision continued to deteriorate to eventual bilateral blindness over the next few months.

**CONCLUSION**

Reduced vision in a patient otherwise systemically fit with optic disc pallor or atrophy can be due to low vitamin B12 levels. Optic atrophy presents earlier than other systemic manifestations. Early treatment with oral and/or parenteral B12 supplementation may prevent severe visual loss.

**REFERENCES**


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**IMPORTANT NOTE**

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INTRODUCTION

Vernal kerato-conjunctivitis (VKC) is a type 1 hypersensitivity reaction mediated by IgE in response to specific allergen mainly pollens with an estimated prevalence of 15-20%. It is bilateral, seasonal recurrent disease mostly affecting 5-15 years age group, characterized by severe inflammation of the conjunctiva with the formation of giant papillae of the superior tarsal conjunctiva, gelatinous hypertrophy of the limbus and keratopathy. It is mostly seen in boys and tends to resolve at puberty. It is a form of ocular allergy which can be associated with severe visual complications. VKC is characterized by intense itching, redness, excessive watering of eyes, burning, photophobia, characteristic ropey, stringy mucous or serous discharge and corneal complications such as superficial punctuate keratopathy and shield ulcer. The disease usually starts in the spring season, continues throughout the summer and subsides in winter with seasonal recurrences of exacerbation and remission. Several therapeutic measures are required to control signs and symptoms of the disease and to avoid potential long-standing or permanent inflammatory processes. Although topical anti-allergic and anti-inflammatory eye drops are the mainstay of treatment for VKC, a gold standard treatment has not yet been established for this disease.

Ketotifen fumarate ophthalmic solution is a benzocyclohepta-thiophene derivative used for alleviating the signs and symptoms of VKC. It has three independent pharmacological mechanisms that appear to contribute to its anti-allergy effects: inhibition of histamine H1 receptors, mast cell stabilization, and prevention of eosinophil accumulation. Olopatadine hydrochloride 0.1% on the other hand has been developed as a derivative of dibenzoxepin used in the treatment of VKC. Olopatadine acts via a selective antagonistic reaction on the H1 histamine receptor at the end organ and by stabilizing conjunctival mast cells to inhibit the release of pro-inflammatory mediators. In preclinical testing, olopatadine showed prolonged, selective antihistaminic activity in addition to inhibition of mediator release from human mast cells in vivo. The purpose of the study is to compare the relative efficacy of Olopatadine Hydrochloride 0.1% and Ketotifen Fumarate 0.025% for the relief of symptoms of VKC.

ABSTRACT

To compare the efficacy of Olopatidine Hydrochloride 0.1% and Ketotifen fumarate 0.025% in vernal keratoconjunctivitis.

Study design: Randomized control trials.

Material & Methods: The study was conducted in the Out Patient Department of Hayatabad Medical Complex, Peshawar from May 2014 to May 2015. A total of 110 patients were divided into two groups of 55 patients each. Group “A” were given topical Olopatidine Hydrochloride 0.1% twice a day whereas group “B” were given Ketotifen Fumarate 0.025% three times a day. Patients were followed at week 1, 2 and after 4 weeks to check for the improvement of symptoms.

Result: 110 patients were included in the study and were divided into two groups of 55 patients each. Age range was from 3-16 years with a mean age of 8.73±3.64. Olopatidine Hydrochloride provide better relief of symptoms of itching, watering, redness and burning than Ketotifen Fumarate (p<0.05) in patients with VKC.

Conclusion: Olopatidine Hydrochloride 0.1% is more efficacious than Ketotifen Fumarate 0.025% for symptomatic improvement in patients with VKC.
Complex, Peshawar from May 2014 to May 2015.  
**Data Collection:** 110 patients with diagnosed VKC were included in the study with age range from 5-16 years and were divided randomly in 2 groups (Group “A” and “B”) of 55 patients each. In group “A” patients were given topical Olopatidine hydrochloride 0.1% twice daily a day and in group “B” Ketotifen fumarate 0.025% thrice a day were prescribed. All the patients were followed on day 7, 14 and after 28 days. Main outcome measures were itching, watering, redness and burning sensations. Efficacy of the drug was determined by comparing symptoms of the patients between the two groups. Improvements in symptoms were graded by patients as no improvement (grade 0), mildly improved (grade 1), moderately improved (grade 2) or complete improvement (grade 3). Other anti-allergic drugs were stopped to avoid bias in the study results.  
**Data analysis:** Data was analyzed by using SPSS version 11. The level of statistical significance was p<0.05. Chi-Square Test was used as the test of significance to compare the proportion of relief of symptoms between the two groups.  
**RESULTS**  
A total of 110 patients were included in the study and were divided randomly into two groups “A” and “B” with 55 patients each. Patients in group “A” were treated with topical Olopatidine hydrochloride 0.1% two times a day whereas patients in group “B” were prescribed Ketotifen Fumarate 0.025% three times a day and were followed after 1 week, 2 and 4 weeks and relief in symptoms were asked from the patients as no improvement, mild improvement, moderate improvement and complete improvement.  
Out of 110 patients 62 (56.36%) patients were male and 47 (44.64%) were female. Age range was from 3 years to 16 years with mean age of 8.73 ± 3.64 years. All the patients showed good compliance to the treatment. At the completion of study both drugs were effective in reducing the symptoms of VKC, but the efficacy of Olopatidine hydrochloride was more than Ketotifen fumarate (p>0.05)  

### Symptomatic improvement in patients with Olopatidine Hydrochloride 0.1%  

<table>
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### Symptomatic improvement in patients with Ketotifen Fumarate 0.025%  

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<th>%</th>
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**Comparison of Efficacy of Olopatidine Hydrochloride 0.1% & Ketotifen Fumarate 0.025% in Vernal Keratoconjunctivitis**

**DISCUSSION**

VKC is a common, more prevalent condition in sub-continent caused by IgE mediated hypersensitivity response usually affecting children with seasonal recurrences. In this condition other mechanisms and cells contribute to a more complex clinical profile. The mast cell is considered to play a vital role in causing signs and symptoms since Bacon AS et al, found increased level of histamine, tryptase, PGD2 and leukotriene C4 in the tears of patients with VKC after conjunctival allergen challenge.8 The selection of any specific anti-allergic drug depends upon the severity of disease. Nowadays drugs with multiple mechanism of action are available like olopatidine hydrochloride and Ketotifen fumarate. The efficacy of both these drugs in allergic conditions has been established in multiple studies.9,10 The efficacy and tolerability of olopatadine hydrochloride and Ketotifen fumarate ophthalmic solutions have been demonstrated in comparative study in patients with allergic conjunctivitis by Kateralis et al. 11 In a study done by Anguilar AJ it was found that, compared with ketotifen, olopatadine provided superior efficacy and a more rapid resolution of the signs and symptoms of VKC as we also observed in our study. 12 In an environmental study, Leonardi & Zafirakis found that a greater percentage of patients preferred olopatadine hydrochloride to Ketotifen fumarate.13 Lainer et al. also reported that olopatadine hydrochloride is significantly more effective than Ketotifen fumarate in controlling the itching, redness and chemosis associated with VKC.14 In a placebo-controlled study, Avunduk et al. reported that, compared with other anti-allergics, olopatadine

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Comparison of Efficacy of Olopatidine Hydrochloride 0.1% & Ketotifen Fumarate 0.025% in Vernal Keratoconjunctivitis

Olopatadine hydrochloride is more efficacious and better tolerated in patients with allergic conjunctivitis. In our study, we also found that olopatadine hydrochloride was more efficacious than Ketotifen fumarate at preventing ocular signs and symptoms of VKC.

CONCLUSION

Olopatadine hydrochloride 0.1% and Ketotifen Fumarate 0.025% both are used for the treatment of VKC but the efficacy of Olopatadine Hydrochloride is comparatively better than Ketotifen Fumarate for the relief of symptoms of VKC.

REFERENCES


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Clinical & Morphological Characteristics of IOFB Presented to a Tertiary Care Centre of Khyber Pakhtunkhwa

Mohammad Idris FCPS¹, Muhammad Alam FCPS², Muhammad Zubair Masud FCPS³
Hasan Yaqoob FCPS, FRCS⁴, Bilal Khan FCPS⁵

ABSTRACT
Objective: To determine the clinical and morphological characteristics of IOFB in penetrating ocular injury presented to a tertiary care centre of Khyber Pakhtunkhwa for management.
Study design: prospective, interventional case Series.
Place and duration: At Department of Ophthalmology, Govt Lady Reading Hospital, Peshawar from 1st July 2011 to 31st Jan 2013.
Methodology: 37 cases with intraocular foreign body from outdoor department were admitted for management. Patients were examined after detailed history and important findings noted.
Results: The study sample comprised of 37 cases. Male were in majority (70.2%). Mean age was 33± 12 years. 23 (62.1%) patients have small foreign body ranging from 1mm or less. 22 (59.5%) Intracoirecular foreign bodies were elongated in shape. 19 (51.3%) were found on retinal surface. 15 (40.5%) foreign bodies were found to be metallic. Perception of light to no perception of light vision was noted in 20(54.05) cases. Counting finger or better vision was noted in 17 (46) cases. BBI and late presentation was the common reason for poor visual outcome.
Conclusion: IOFB is a common and important clinical problem. Small, elongated FBs were common although any sort of FB can enter the eye. FBs like wood and stone were strongly associated with endophthalmitis. Visual prognosis was poor in majority of the eyes, delayed presentation and Bomb Blast Injuries (BBI) were the top reasons.
Key words: Clinical characteristics, morphological characteristics, IOFB, ocular trauma, visual outcome.

INTRODUCTION
In certain parts of the world, trauma is one of the most common causes of visual morbidity and ocular problems especially when associated with IOFB.¹ Its incidence is on the rise due to increase use of weapons and wars especially in our part of the world.² In our region the bomb blast injuries, working while chiseling or hammering and accidental entry of stones etc are the most common reasons for IOFB.³ Different types of IOFBs like metal, wood, stone, plastic and even hair can enter the globe and cause serious damage. Every IOFB can cause complications.³ Occupation, age, gender, area of accident, all give valuable information about the different characteristics of IOFB like nature, location, size, shape and even prognosis about vision.⁶ Ultrasound and B-scan is a simple and easy diagnostic test which not only detects the presence of IOFB but also gives us the exact size, nature and location of IOFB.⁷
Most of the victims are male and young patients working on fields which are exposed because of their occupations. Thus, lack of awareness regarding protective goggles and early referral to eye specialist for urgent management is lacking.⁸,⁹ Metals, infected foreign bodies and organic foreign bodies have worse prognosis. BBI victims have multiple injuries and complicated trauma and are especially the risk group.³ IOFBs are of different size and shape. Round, elongated, irregular, large or small, any FB can enter the eye and can cause ocular damage. Sharp and large size IOFBs are more damaging.¹⁰

Objective: to determine the clinical and morphological characteristics of IOFB in penetrating ocular injury presented to a tertiary care centre of Khyber Pakhtunkhwa for management So that any IOFB if detected should be managed on time.

In ocular trauma, IOFB is a common and important clinical problem. FBs like wood and stone were strongly associated with endophthalmitis. Which needs systemic antibiotics and should be used in any trauma case particularly contaminated ones. Visual prognosis are poor in majority of the cases due to BBI and delayed presentation.

METHODOLOGY
This study was carried out at Department of Ophthalmology, Govt Lady Reading Hospital,
Peshawar from 1st July 2011 to 31st Jan 2013. We received 37 cases from outdoor department and were admitted for management. This was a prospective, interventional case series of consecutive patients with IOFBs. Patients were examined after detailed history and important findings noted. Different variables were recorded for the purpose of the study: age, gender, cause of trauma, occupation, various morphological features of IOFB, presenting best-corrected visual acuity (BCVA), slit lamp and fundus examination, ultrasound examination when ophthalmoscopy was not possible, foreign body localization based on orbital CT scan, size, site, and type of the foreign body, consequences of retained IOFB including complications, time interval since injury, details were recorded. All patients underwent surgical removal of the IOFB. Final visual acuity at 6 month follow up visit was noted. Data was collected on special proforma and was analyzed with the help of SPSS Version 16. Non probability consecutive sampling technique was used. All patients with history of intraocular foreign body were included in the study. Patients with history of ocular disease especially diabetic retinopathy, high myopia, past ocular surgery and bleeding disorders were excluded from the study.

RESULTS

We evaluated thirty seven cases of intraocular foreign body. Various clinical characteristics are shown in table 1. For ease of description we divided the age of the patients into three groups in years. Age ranges from five years to sixty three years. Mean age was 33+/−12 years. So majority of our patients were young who spent life in outside environment. 26(70.2%) patients were male and only 11 (29.8%) were female. Different causes of the IOFB were determined. Hammering a chisel was the main cause and it was seen in 15 (40.5%) cases. Bomb blast injury was seen in 13 (35.1) patients and sports or accidents were seen in 4 (10.8), while other causes reported unknown by the patients were 5 (13.5) cases.

Different people involve in different sort of occupations who got IOFB. Labor were the commonest occupation which were seen in 18 (48.6%) cases. Sports and defense related people were seen in 11 (29.7%), students and children in 5 (13.5%) and others / accidental cases were only 3 (8.1%).

Finally visual progress at six month follow up was determined and presented in the table 1. Most cases end up in poor vision. Perception of light to no perception of light vision was noted in 20 (54.05) cases and counting finger or better vision was noted in 17 (46) cases. BBI and late presentation were the common reason for poor visual outcome. Different morphological features are shown in table 2. Size, shape, and location are studied and their frequency noted. 23 (62.1%) patients have small foreign body ranging from 1-2mm or less in size. 8 (21.6 %) patients have foreign body larger than 2mm but less than 4mm. Larger foreign bodies e.g. more than 4mm were noted in 6 (16.2%) patients. The largest foreign body size was 7x4 mm which was a stone with big scleral perforation. Smallest foreign body size was 1x0.25 mm which was referred from Kabul, Afghanistan, a labor while hammering a chisel. Mean size of foreign body was 3x2 mm, so most of the foreign bodies were entering the globe.

Shapes of intraocular foreign bodies were divided into three groups. Majority of the Intraocular foreign bodies 22 (59.5%) were elongated. 10 (27.02%) intraocular foreign bodies were round and only 5 (13.5%) were irregular in shape. Any shape of foreign body is important especially elongated and it is concluded that any FB can enter the eye. Shapes of intraocular foreign bodies were divided into three groups. Majority of the intraocular foreign bodies 22 (59.5%) were elongated. 10 (27.02%) intraocular foreign bodies were round and only 5 (13.5%) were irregular in shape. Any shape of foreign body is important especially elongated and it is concluded that any FB can enter the eye. Location of foreign body was studied based on clinical and imaging techniques. 11 (29.7%) IOFBs were found in vitreous cavity, 19 (51.3%) IOFBs were found on retina, 3 (8.1%) on the lens and only 5 (13.5%) IOFBs were recovered from anterior chamber. In 15 (40.5%) cases, metal foreign body was found. In 6 (16.2%) cases wood was found and in 7 (18.9%) accidents, stone was found. In 9 (24.3%) cases other types of foreign bodies were found.

Table 1: Clinical characteristics (N=37)

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DISCUSSION

With successive wars in the twentieth century, there has been a relative increase in injuries to the eye compared to injuries of other parts of the body. The main causes of eye injury have changed with advances in techniques and weaponry of warfare, with blast fragmentation injuries accounting for 50-80% of cases.11 In our study, the most common causes of open globe injury are domestic accidents and occupational injuries. Awareness of the factors predicting a poor visual outcome such as initial visual acuity, posterior extent and length of wound, presence of hyphaema and presence of vitreous prolapse may be helpful during counseling of patients with open globe injuries.12

In our study, labor was the commonest occupation and these were the main victim of IOFB. BBI is very common in our part of the world and 35% cases were victim of BBI. According to different studies31,13 despite early referral, BBI were having worse prognosis and despite proper management and early intervention, results and final visual outcome were poor and disappointing. Several studies confirm that trauma of any type is common in male14 in our study male were in majority also. Similarly young to middle age are the common group of people exposed to both accidental as well as occupational trauma.85 In our study most of our patients were less than 40 years age.

Penetrating ocular injuries with retained posterior segment foreign bodies are challenging cases requiring urgent attention by vitreoretinal surgeons. De Souza S et al, reported the rates of retinal detachment and endophthalmitis were 41% (17/41) and 17% (7/41) respectively.15 The nature of the foreign body determines the clinical behavior.16 Removal of organic foreign bodies, however, is mandatory since these objects usually lead to secondary infection, like endophthalmitis.17 Several studies have shown that the visual prognosis is poor. In a study, 63% patients had final visual acuity of less than 5/200 at final follow-up. In another study, visual acuity on admission between 6/60 to PL comprises highest number (64%) and also on discharge between 6/60 to PL comprises highest number of cases (50%).16

In our study, the final visual acuity was hand movement vision in majority 60% of the cases and main reason besides endophthalmitis was BBI and late presentation as well as postoperative complications resulted in an attempt to remove IOFBs from the globe. Perception of Light (PL) visual acuity was in 35% cases. The average final visual acuity we get was PL in 56% cases and counting finger or better in 44% cases at 6 months follow up. We lost 05 patients at follow up.

We correlated morphological features of IOFB and studied the size, shape, location and cause of different types of FBs as well as type of IOFB. Studies have shown that the location, size, shape, associate ocular damage, type of the material of IOFB play important role in ocular damage and final visual outcome. so the prognosis in open-globe injuries with intraocular or retrobulbar foreign bodies depends on the size and type of the foreign body, presence and location of retinal lacerations, additional involvement of other intraocular structures, preoperative visual acuity, and timing of surgery. Such factors are important in preoperative counseling of the patient and for planning surgery.13,17,19 In another study, a prominent foreign body of 18 mm in length that passed through the iris, lens and vitreous.20 Studies have shown that in majority the visual outcome is disappointingly poor.18,21 In a study, the average IOFB size was 3.9 x 15.1 mm. Patients with greater size of IOFB had worse initial visual acuity.21 We studied that most of FBs were small with average size of 3x2 mm. the largest FB was 7x4mm which was a stone with big sclera perforation and smallest being 1x0.25mm. Sharp objects are more damaging because of its ability to penetrate in the eye more easily. According to a study, blade-shaped IOFBs penetrated to the posterior segment (97%) more frequently (P<0.05) than disc (74%), cylinder (7.5%), or sphere (7.5%) shapes despite having the second lowest mass. Intraocular foreign bodies of greater mass were
Clinical Morphological Characteristics of IOFB

associated with worse outcomes. The commonest shape of FB was elongated 70%, irregular 40% and round FBs are 28% cases. We also noted that elongated FB was more damaging that any other type and we noted that these elongated FBs were more associated with vitreous hemorrhage, scleral and corneal perforation and less damage and retinal detachment. Large sharp objects are more damaging. The greater the size the more extensive is the damage. So it is concluded that size is an important factor. The commonest location of FB we found was vitreous 51.3%, followed by retina 29.7% Anterior chamber 10.8 % and lens in only 8.10% cases.

CONCLUSION

In ocular trauma, IOFB is a common and important clinical problem. Small, elongated FBs were common although any sort of FB can enter the eye. FBs like wood and stone were strongly associated with endophthalmitis. It needs systemic antibiotics should be advocated in any trauma particularly contaminated ones. Visual prognosis was poor in majority of the eyes; delayed presentation and BBI were the top reasons.

REFERENCES


Fig 1: Different Intra Ocular Foreign Bodies recovered from the globe:
(photo by DR MOHAMMAD IDRIS, eye unit, Lady Reading Hospital, Peshawar)
Pattern of Common Eye Diseases in Children Visiting Eye Department at Govt. Naseerullah Khan Babar Memorial Hospital, Peshawar

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Dr. Zahid Jadoon M.Sc, (Com. Ophth)3

Govt. Naseerullah Khan Babar Memorial Hospital, Kohat Road, Peshawar

ABSTRACT

Purpose: To assess the pattern of common eye diseases in children visiting the eye OPD at NBM Hospital Peshawar, to help in planning eye care services and to develop health policies for children in this community to redress preventable and blinding disorders in children.

Material & Methods: A retrospective analysis of the OPD data over the previous 4 years 2010-2014 taking into consideration the presenting complaints, gender, age 0-16 years, visual acuity aided and unaided, refractive errors, signs of eye diseases involving anterior segment of the eye and ocular alignment.

Results: In total 3160 children were seen between 2010-2014. Male were 1896 (60%), female were 1264 (40%) and 632 (20%) were less than 1 years, 1074(34%) were 1-7 years, 1454 (46%) were 7-15 years. The commonest eye problem seen was refractive errors 41.45%. Hypermetropia resulting in accommodative esotropia accounted for 26.5% with a male preponderance. Astigmatism and myopia was seen in 15% between 2-7 years of age. Congenital nasolacrimal duct obstruction (NLDO) was the most common disorder seen 16% in children below in one year with no lateral or sexual predilection. This was followed by Bacterial Conjunctivitis (19%) Vernal Kerato Conjunctivitis (14.8%) and Ocular trauma was seen in 131 patients (4%). Vitamin A deficiency was seen in (2.9%) and others such as congenital cataract in (0.5%) Amblyopia, (0.3%) Keratitis and Corneal opacity (0.3%) Ophthalmia Neonatorum (0.4%) Pre-septal cellulities, Styes, and Chalazion in (0.7%).

Conclusion: Refractive accommodative Esotropia with underlying hyperopia was the most common eye problem encountered with male preponderance followed by conjunctivitis, VKC, and refractive errors in 1-7 yrs old. Congenital nasolacrimal duct obstruction was a common disorder seen below 1 year old. Vit A deficiency was seen in (2.9%). Further studies are required to determine the aetiology, risk factors associated with these conditions. Health policies need to be modified to develop large scale more effective intervention measures to prevent blinding eye condition such as Amblyopia (a preventable cause of unilateral / bilateral blindness) associated with refractive accommodative squint by refraction and spectacle correction. Prevent Vitamin A deficiency in children and ocular trauma by public health education and School health services. Vit “A” capsules should be distributed with polio vaccination to VAD deficient children to decrease ocular morbidity from this condition.

INTRODUCTION

Eye disease in children can be a cause of ocular morbidity and mortality. The pattern of eye diseases presenting to eye OPD varies according to the level of health awareness, education, socio economic status of the population and access to the health facilities, diet, customs and traditions major environmental factors prevalent in that region and seasonal variation of some diseases. Hence spectrum of ocular problems varies from country to country and even from region to region in the same country.1 If not diagnosed or treated in time these eye disease can lead to blindness. Sadly most of them are preventable, as determined by WHO/ vision 20/20,2 such as Amblyopia from untreated squint, blindness from vitamin A deficiency, ocular trauma and the sequela of microbial infections not receiving timely treatment such as keratitis, and corneal opacities.

The commonest causes of childhood ocular disorders require the attention of health professionals for complete management and early referral to avoid visual impairment and blindness. Since these disorders are preventable, health education is necessary to create awareness in the communities for early presentation to the eye care centers and timely management.
Early diagnosis is required in above mentioned eye diseases to prevent serious consequences in children. These diseases have a devastating effect on a child’s psychological and physical development and their ability to learn and perform in school. Vision is an important prerequisite for learning and Communication. Childhood blindness is second only to cataract in terms of “blinding years”.

The aim of this analysis was to find the common pattern of eye diseases in children presenting to the eye OPD at Naseerullah Babar Memorial Hospital so that appropriate health policies and intervention measures could be developed to address preventable blinding visual disorders in children in this community.

MATERIALS & METHODS

This is a retrospective hospital based study of the OPD data from 2010-2014 of children <16 years of age with eye diseases between age 0-16 year with diseases affecting the anterior segment of eye and adnexa oculi presenting to the Eye OPD NBM Hospital Peshawar. Children were placed into 3 categories, less than 1 year, 1 to 7 years and 7-16 years of age. They were further categorized into male and female. Proportion of children with various eye disease on gender basis was determined. The data retrieved was the presenting complaint, aided and unaided visual acuity, refractive error, ocular alignment and signs in the anterior segment of the eye and adnexa. (refer to table 1 and 2).

This information was retrieved by records of methods of examination such as visual acuity using snellen test (for school going children) refraction (objective subjective and cycloplegic refraction) slit lamp examination and fundoscopy.

After examination patients were provided treatment accordingly and those needing further evaluation were called follow-up.

RESULTS

Data of all 3160 children presenting.

Between 2010-2014
Male = 1896 (60%)
Female = 1264 (40%)

Among three age groups
632 (20%) were less than 1 year
1074 (40%) were 1-7 years
1454 (39.8%) were 7-15 years

Children with various eye disease were seen mostly affecting the anterior segment such as refractive accommodative esotropia, refractive errors, Congenital nasolacrimal duct obstruction, Allergic conjunctivitis (VKC), Vitamin A deficiency, ocular trauma and others such as keratitis, corneal opacities, bacterial and adenoviral conjunctivitis, trachoma, sty, chalazion, blephritis, and pre-septal cellulitis.

Overall our study shows a large proportion of children suffering from refractive errors (41.5%). Age wise distribution shows that children in age group 1-7 presented with the highest proportion of refractive accommodative esotropia (26.5%) while myopia and astigmatism (15%) was more commonly seen in age group 7-16 years.

This was followed by bacterial conjunctivitis (19%), allergic conjunctivitis (14.8%), Ocular trauma (mostly subconjunctiral heamorrhage, corneal abrasion, mild hyphema, and lid lacerations etc.) occurred in (4.1%) vitamin (A) deficiency (VAD) was also seen in (2.4%) other such as congenital cataract (0.5%) keratitis & corneal opacities (1.19%) ophthalmia Neonatorum (0.4%), preseptal cellulitis and various lid infections sty, chalazion (0.7%) were seen less frequently. In children less than one year old congenital Nasolacrimal duct obstruction was very common (16%). (Refer to table 3). It resolved spontaneously with conservative management (Crigler massage and topical antibiotic treatment) in most of the cases.

Table 1: Distribution of children on gender basis

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1896 (60)</td>
</tr>
<tr>
<td>Female</td>
<td>1264 (40)</td>
</tr>
<tr>
<td>Total</td>
<td>3160 (100)</td>
</tr>
</tbody>
</table>

Table 2: Distribution of children (0-15 years by age)

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>632 (20)</td>
</tr>
<tr>
<td>1 – 6 years</td>
<td>1270 (40.2)</td>
</tr>
<tr>
<td>7 – 15 years</td>
<td>1258 (39.8)</td>
</tr>
<tr>
<td>Total</td>
<td>3160 (100)</td>
</tr>
</tbody>
</table>

Table 3: Proportion of children (0-15) with diseases on gender basis.

<table>
<thead>
<tr>
<th></th>
<th>Male n (%)</th>
<th>Female n (%)</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refractive Errors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refractive Accommodative Esotropia</td>
<td>531 (16.8)</td>
<td>370 (11.7)</td>
<td>837 (28.5)</td>
</tr>
<tr>
<td>Myopia &amp; Astigmatism</td>
<td>271 (8.6)</td>
<td>203 (6.4)</td>
<td>474 (15)</td>
</tr>
<tr>
<td>Bacterial Conjunctivitis</td>
<td>300 (9.5)</td>
<td>300 (9.5)</td>
<td>600 (19)</td>
</tr>
<tr>
<td>Congenital NLDO</td>
<td>258 (8.16)</td>
<td>247 (7.8)</td>
<td>505 (16)</td>
</tr>
<tr>
<td>Allergic conjunctivitis (VKC)</td>
<td>303 (9.6)</td>
<td>164 (5.2)</td>
<td>467 (14.8)</td>
</tr>
</tbody>
</table>
The spectrum of ocular problems varies from country to country and even region to region in the same country. The most common ocular disorder found in our study was refractive errors (41.45%) with convergent squint due to refractive accommodative esotropia (26.5%) between 1-7 years of age with male preponderance, Myopia and Astigmatism (15%) between 7-15 years which is similar to a study conducted in Tikrit Iraq (12.1%).7 In our study Amblyopia was seen only in 9 patients (0.3%) which compares with a study in Karachi (0.05%) and in Nigeria (0.08%).8,9

Accommodative esotropia is the most common type of squint in childhood. The incidence is estimated at 2% of the population it is found in patients with moderate amount of hyperopia.10

The excessive convergence associated with accommodation to overcome a hyperopic refractive error can cause a loss of binocular control and lead to the development of esotropia. Commonest age at presentation is 2 years but can present from infancy to later in childhood.

Spectacle correction is the initial treatment. Full cycloplegic correction is given initially. Single vision spectacles are used in most cases and have been shown to control esotropia in 2/3rd cases. Bifocals can be used if eyes are orthophoric for distance but there is more than 10 prism diopters of esotropia at near fixation. The minimum power (upto 3-5 diopter) is recommended.

**Physical Examination:** Cycloplegic refraction is done with most often a mixture of 1% cyclopentolate and 2.5% phenylephrine is used. Atropine can be used if above is ineffective or to confirm that maximal hyperopic correction has been prescribed.

**Follow up:** Should be done to monitor Amblyopia,
assessments of ocular alignment and binocular visual development.12 The greatest risk is development of Amblyopia (unilateral blindness) and loss of binocular visual potential. Deterioration of control of esotropia is greater in patients with a high AC/A ratio, earlier age of Amblyopia. Delay in treatment and non-compliance with treatment can result in loss of binocular potential and Amblyopia which is a cause of preventable blindness in children.

In our study the higher number of children seen with this problem could be attributed to the increased awareness about the condition amongst the parents of our community. (refractive errors was the third commonest eye problem encountered in our study with hypermetropia (26.5%) astigmatism and myopia (15%). This compares with study conducted in Eye the Department Khyber Teaching Hospital Peshawar (12.8%).13,14

Bacterial Conjunctivitis (19%) was the second most commonly seen disorder in our study and this compares with a study in Ethiopia (35%)3 and various ocular morbidity surveys which have estimated the magnitude of eye diseases amongst children.15,16,17

In a survey conducted in Nigeria, refractive errors account for (14.3%) and in Iraq (14.6%) of the eye disorders presenting to the Eye OPD.7 Refractive errors are a leading cause of low vision in children as shown by a school screening in Nigeria.7 In our study Allergic conjunctivitis (VKC) was seen in (14.8%). Similar study in Tikrit, Iraq, shows allergic conjunctivitis in (27%).7

Bacterial Conjunctivitis is the most common ocular surface disorder in children.2,17,18,20,21 This is likely due to the dry and dusty environment, largely rural communities and hot summers which favors allergic conjunctivitis. This is a risk factor for the development of chronic allergic conjunctivitis in children.

In our study congenital nasolacrimal duct obstruction was seen in (16%) of children less than one year of age, as compared to 5.2% in a study conducted in Tikrit Iraq.8 It resolved in 90% cases with “Crigler massage”. Topical antibiotic eye drop was prescribed to avoid secondary bacterial conjunctivitis.22,23,24 In our study vitamin A deficiency was seen in (2.4%) which is alarming, as it shows only the tip of the iceberg; it was detected only in children presenting to eye OPD.

Further study and large scale survey is needed to know the true prevalence in the community. Vitamin “A” deficiency is a leading cause of preventable blindness in children. It is a public health problem in Africa and South East Asia. WHO estimates 14 million children to have some eye damage due to VAD 350,000 or may become partially sighted or blind from VAD. About 60% die within few month of going blind.25,26,27 WHO global initiative is worldwide elimination of vitamin “A” deficiency by promoting breast feeding, vitamin “A” supplementation and promotion of vitamin. A rich diets and food fortification for vulnerable rural families, including growth of vitamin “A” rich fruits and vegetables in home gardens. In VAD deficient children the periodic supply of high dose vitamin “A” in swift simple low cost high benefit intervention has also produced remarkable results in decreasing mortality by 23% overall and by 50% for acute measles sufferers.28,29,30,31,32

The supplements and food fortification have been shown to be effective interventions. Supplement treatment for night blindness includes high doses of vitamin A (200,000 IU) to be taken by mouth, which is administered orally. Food fortification like wheat, sugar and milk11 consumption of orange fruits and vegetables rich in carotene provides pro Vit A.

In our study ocular trauma in children was seen in (4.1%) which is similar to a study in a rural eye hospital in Ethiopia (11.8%).3 This requires attention of all health professionals for proper management and early referral because eye injuries remain a major cause of unilateral visual impairment worldwide and a common cause, of non congenital unilateral blindness in childhood Eye injuries are sustained during unsupervised play and domestic activities.

Public health education is necessary for prevention of childhood injuries and early presentation of children to the hospital for treatment.33,34,35,36,37 Better supervision at school, play and home both by parents and teachers will result in decreasing the incidence of ocular trauma in children.

CONCLUSION

The most common causes of childhood ocular morbidity in this study were refractive errors (41.45%) with refractive accommodative esotropia (26.5%) due to underlying hypermetropia, and (15%) were myopia and astigmatism. Bacterial conjunctivitis was seen in (19%), Allergic conjunctivitis (14.8%) ocular Trauma accounted for (13.3%) and Vit“A” deficiency (2.4%) in children between 2-7 and 7-15 years. In children less than 1 year age, congenital Nasolacrical duct obstruction was seen more commonly (16%). These disorders require the attention of all health professionals for complete management and early referral because they lead to permanent visual impairment and blindness. All these disorders are preventable Health education in necessary for the prevention of eye diseases as well as creating awareness in the communities for early presentation to the eye care centers and early and
timely management.

Despite some limitations the result of this study gives useful information on the epidemiology of paediatric / childhood eye diseases presenting to the hospital. Future population based surveys and prospective clinical studies focusing on paediatric ocular morbidities should be performed to know the true prevalence of childhood eye diseases and better services planned to decrease ocular mortality and morbidity from these conditions.

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Frequency and the types of Astigmatism amongst the Children aged 5 to 15 years at Tertiary Care Hospital

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Abdus Sami Memon³, Amir Yasir BSVS⁴

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ABSTRACT
Aim: To determine the frequency and the types of Astigmatism among the children aged 5 to 15 years at tertiary care hospital.

Methods: It was an observational, cross-sectional, descriptive type of study. The study was conducted at the Pediatric Eye Department of a tertiary eye care hospital from 1st October 2014 to 31st March 2014. Every consecutive patient come into pediatric eye department of aged 5 to 15 years during this period was included in this study.

Results: Total 1169 were examined from which 132 (11.2%) patients had astigmatism in both eyes. Of these 71 (53.5%) were male and 61 (46.5%) were female. Among all types of astigmatism simple myopic astigmatism accounted 28 (21%), simple hyperopic astigmatism was 16 (12%), Compound Myopic Astigmatism was 57 (43%), Compound hyperopic Astigmatism was 20 (15%) and Mixed Astigmatism was 11 (9%). Only 12 patients had astigmatism in one eye.

Conclusion: Astigmatism is a common refractive problem and is especially significant in children because of its effect on visual development. This study shows that compound myopic astigmatism increases with the age may be due to more near work and high studying intensities.

Keywords: Astigmatism, Refraction, Myopia.

INTRODUCTION
Astigmatism is a condition in which the parallel rays of light cannot focus on one point, when the accommodation is rest. Astigmatism may be an error of curvature of the cornea or lens and its refractive index. It is the commonest refractive problem. Uncorrected refractive errors are the main cause of vision impairment in children ages 5 to 15 year group. To the correction of refractive errors including provision of spectacles even in low prevalence of reduce vision in school age children is to be considered a public health perspective. Astigmatic error becomes more significant due to its high prevalence, its implications on visual developments in early years of life, unlike myopia and hypermetropia, astigmatism imposes considerable optical defocus at all viewing distances. Increasing astigmatism is associated with an increased risk of developing amblyopia. The occurrence of astigmatism has been documented in 8% to 10% of adults. The reported prevalence of this refractive error in children was quite varied, and was influenced by age. In infants, studies have reported prevalence rates as high as 70% for astigmatism of more than 1 Dioptré (D). Other studies have indicated that the prevalence of astigmatism decreased in older children to about 12-13% by the age of 10 years. A change in the axis of astigmatism with age was also described. Racial variations were also known to influence the prevalence and degree of astigmatism. They reported this refractive error in children is quite vary and is influenced by the age according to the WHO in 2002. 161 million people were visually impaired from different eye diseases and it is estimated that an additional 153 million have visually impairment globally due to uncorrected refractive error. WHO estimated 19 million children below age 15 years are visually impaired of these 12 million children are visually impaired due to refractive errors, a condition that can be easily diagnosed and corrected, 1.4 million are irreversibly blind for the rest of their lives. In addition, astigmatism has been reported to be associated with development of Amblyopia and progression of myopia. These effects of astigmatism might be more significant if presented in a developing visual system.

Astigmatism is high in age group of 5 to 15 years especially the compound myopic astigmatism which may be due to more close work, high studying intensities and growing age. Effective of populations with high prevalence of astigmatism through public education programs, early identification and correction of astigmatism is very significant.

¹²³Assitant Professors. ⁴Associate Professor, ⁵Optometrist.

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Received: July 2015 Accepted: August 2015
MATERIAL & METHODS:

**Settings:** Pediatric Eye Department of Al-Ibrahim Eye Hospital, a tertiary care hospital in the vicinity of Karachi.

**Duration:** 6-months (1st October 2014 to 31st March 2015)

**Sample Size:** Every consecutive patient came in Pediatric Eye Department of Tertiary Care Hospital age 5 to 15 years during six (06) months period.

**Inclusion Criteria:** All new patients from 5–15 years old children diagnosed of having astigmatism attending the OPD of Pediatric Eye Department of Tertiary Care Hospital during the study period was included.

**Exclusion Criteria:**
- Greater or less than 5–15 years old patient.
- Patient on follow-up:

**Study Design:** It was an observational, cross-sectional, descriptive type of study.

**Data Collection Procedure:** All the patients attending Pediatric Eye Department OPD ages of 5–15 years are invited to participate, the purpose and procedure of the study were explained to the parents before obtaining informed consent. In addition, the ophthalmic examination was carried out and verbal consent was also obtained from the parents before the examination.

The protocol was approved by the ethical committee of the hospital proforma of all the patients was filled up for personal details of the patient. Examination included visual acuity testing by Snellen chart test at the distance of 6 meters and near vision chart at 40cm respectively. First monocular than binocular, if patient have vision less than 6/6 or worse in one eye or both eyes and improving with pinhole was the sole criteria for the refraction. Ocular movements and pupillary reflex was examined, and cover-uncover test to detect strabismus was performed. The refraction was done by both methods subjective and objective. Refraction was performed objectively on all patients using streak retinoscope, Sphero-Cylindrical method of refraction was used to neutralize the movements (one meridian was neutralized by spherical lens and the perpendicular meridian was neutralized by and appropriate cylindrical lens whenever was required). Subsequently, retinoscopic finding was subjectively verified. In spherical prescription Duo-Chrome test was done for under correction in myopic patient. Half Dioptre cross cylinder was used to verify and to refine the axis and power of any cylindrical lens. Anterior segment and fundus examination was also done using direct Ophthalmoscope.

**RESULTS**

Total 1169 patients were examined in which 699 were males and 468 were females. The age of the patients ranged from 5-15 years. Out of these 132 (11.2%) patients were found who have astigmatism in both eyes. Among all types of Astigmatism, Compound Myopic Astigmatism 57 (43%) was most common and and least was Mixed astigmatism 11 (9%). Other types are simple myopic astigmatism accounted 28 (21%), Simple Hyperopic Astigmatism was 16 (12%), Compound Hyperopic Astigmatism was 20 (15%) Only 12 patients had astigmatism in one eye was shown in Table 1.

<table>
<thead>
<tr>
<th>Frequency of astigmatism by type:</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound Myopic Astigmatism</td>
<td>57 (43%)</td>
</tr>
<tr>
<td>Compound Hyperopic</td>
<td>20 (15%)</td>
</tr>
<tr>
<td>Simple hyperopic</td>
<td>16 (12%)</td>
</tr>
<tr>
<td>Simple Myopic</td>
<td>28 (21%)</td>
</tr>
<tr>
<td>Mixed</td>
<td>11 (9%)</td>
</tr>
</tbody>
</table>

Most of the astigmatism was found in the age group of 11 to 15 years while least age was from 5 to 10 years. We found that all patients who had astigmatism in which 71 (53.5%) were males and rests were females. (Table2).

<table>
<thead>
<tr>
<th>Frequency of Astigmatism ay age</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10 years</td>
<td>54 (38.2%)</td>
</tr>
<tr>
<td>11-15 years</td>
<td>78 (61.8%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency of Astigmatism by gender</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>71 (53.5%)</td>
</tr>
<tr>
<td>Female</td>
<td>61 (46.5%)</td>
</tr>
</tbody>
</table>

The most common type of astigmatism in males was about 31(40.3%) of compound myopic astigmatism and 6 (7.8%) of mixed astigmatism. In other types of astigmatism males had simple myopic astigmatism which was about 17 (24%) and 11 (18%) had simple hyperopic astigmatism. In females the most common type of astigmatism was compound myopic astigmatism which was about 26 (38.8%) and 5 (8%) of mixed astigmatism. In other types of astigmatism females had simple myopic astigmatism which was about 11 (18%) and 9 (15%) had simple hyperopic astigmatism was shown in Table 3.

<table>
<thead>
<tr>
<th>Type of Astigmatism</th>
<th>Gender</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Simple Myopic</td>
<td>17 (24%)</td>
<td>11 (18%)</td>
</tr>
<tr>
<td>Simple Hyperopic</td>
<td>11 (18%)</td>
<td>9 (15%)</td>
</tr>
<tr>
<td>Compound Myopic</td>
<td>31 (40.3%)</td>
<td>26 (38.8%)</td>
</tr>
<tr>
<td>Compound Hyperopic</td>
<td>10 (14%)</td>
<td>10 (16%)</td>
</tr>
<tr>
<td>Mixed</td>
<td>6 (7.8%)</td>
<td>5 (8%)</td>
</tr>
<tr>
<td>Total</td>
<td>71 (53.5%)</td>
<td>61 (46.5%)</td>
</tr>
</tbody>
</table>
DISCUSSION

Astigmatism is an important refractive error in children because it imposes considerable optical defocus at all viewing distances during the years of ocular maturation. Although debatable, astigmatism is the possible cause of meridional amblyopia. In addition there is evidence of difficulty of correcting high astigmatism in clinical practice, leading to rejection of eye wear in children, with decrease in classroom performance as a result of unsatisfactory vision.

The axes of astigmatism differed between races, suggesting a heritable component in a more recent study showed the importance of dominant inheritance in astigmatism. Compared with the myopia, the proportion of the variance of astigmatism explainable by genetic factors appeared to be relatively lower. In infants the severity of astigmatism was reduced from 1 to 3 years. Although the high occurrence of astigmatism in the eyes of infants is well established, the reason for this is not clear. Astigmatism decreases as child grows and reduces significantly by the age of 18 months. Therefore, it is generally believed that cylindrical error, unless huge, my not affect the retinal image of very young eyes. However, it has been suggested that, as child grows older, myopia can progress in uncorrected astigmatism. The role of astigmatism on visual development has not yet been completely defined. The prevalence of astigmatism has varied in different studies in different populations.

In our study the frequency of astigmatism in patients’ age from 5 to 15 years was 11.2%. A national study was done in Karachi in 2008 ages of patients were 1-14 years they showed the ratio of astigmatism was 48.16%. In this study the ratio of astigmatism was very high, may be due to large sample size and age of patients. Another study was done by Sethi, et al show the frequency of astigmatism was 6%. Out of these (10%) were below 3 years, (74%) of children were between 3-10 years. Only (16%) were between 11-15 years that’s why the ratio of astigmatism was low. Another study done by Fotouchi A et al, showed overall rate of astigmatism as (18.7%). A study was done by Seang-Mei Saw et al, shows the prevalence of astigmatism was (18.5%). Another study done by Louis Tong et al, showed the prevalence rate of astigmatism was (19%). In our study the frequency of astigmatism in males was (53.7%) and in females was (46.2%). Playing video games and computer use may be associated with astigmatism severity, although the prevalence of astigmatism was not associated with any near work factors. Another reason for reduced prevalence among females could be reduced uptake of eye care services by females in our community.

In our study the frequency of compound myopic astigmatism was high in age group 2(11-15 years) 43.8%. the ratio of myopic astigmatism was high due to study of children in this age, the patients age from 11-15 years, are studying in schools or madrassas and close near work may lead to myopic astigmatism. An increase in studying intensities may lead to increases in astigmatism occurrences.

A study was done in Karachi in 2008. In this study the ratio of myopic astigmatism was high (76.60%). The ages of the patients were 1-40 years. In this study the ratio of myopic astigmatism was high may be due to increase age group. In our study the rate of myopic astigmatism increased with age. In contrast, the rate of hyperopic and missed astigmatism decreased with age.

CONCLUSION

It was observed that the due to various reasons astigmatism was high in age of 5 to 15 years, the compound myopic astigmatism was high in this age group, it may be due to more near work and high studying intensities as well as growing age. The importance of further efforts directed towards developing and effective screening methods for populations with high prevalence of astigmatism, by initiating the public education programs regarding the importance of early identification and correction of astigmatism.

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Ping-pong gaze in hepatic encephalopathy

A 55-years old patient with advanced alcoholic hepatic encephalopathy showing spontaneous, slow, horizontal, conjugate eye deviation, alternating every 2 to 4 seconds from one extreme to the other. Eye movements were smooth and continuous without interruption. Pupillary reaction was normal. He had rigidity of all four limbs, clonus in the lower extremities, and Babinski signs positive. MRI of brain revealed chronic microangiopathic changes, with no electroencephalographic relation. The plasma ammonia level was elevated to 359 μmol per liter (12 to 48 μmol per liter). Neuroophthalmologic motility pattern was seen as a transient, reversible phenomenon with advanced hepatic encephalopathy. After 48 hours of IV Glucose, his plasma ammonia level returned to 28 μmol per liter with resolution of hepatic encephalopathy and ping-pong gaze. The patient was discharged home with normal mental status 1 week after presentation..............(on line)

Curtesy: Vaduganathan, M.D, M.P.H
Jacob H. Johnson, M.D.
ABSTRACT

Background: Govt. Naserullah Babar Memorial Hospital Kohat Road Peshawar (NBHM) is a main leading provincial hospital situated in an industrial estate and a catchment area of surrounding rural population of approximately one million people. Ocular trauma is frequently seen in patients attending the Eye OPD of NBHM.

Aims & Objective: To determine the prevalence, incidence, pattern and causes of ocular trauma and its complications in patients presenting to the Eye OPD at Nasirullah Babar Memorial Hospital Kohat Road Peshawar so that effective preventive measures can be planned and implemented to prevent ocular trauma in this community.

Materials & Methods: A total of 55704 patients attended the Eye OPD between 2010-2014, out of which 3218 (5.7%) patients had sustained some form of ocular trauma. The majority of patients affected were young adult males 2958 (85%) while 278 (11%) were females and 131 (4.0%) were children below 15 years. Refer table 1. The preponderant age group affected was the first two decades of life 16-25 -35 years (51%) refer table 2. As this is industrial estate area, approximately (92%) injuries occurred in young adult males, at work, (mostly Foreign bodies on cornea. Comparatively less ocular trauma was seen in females (8.6%) mostly at home due to (alkali, lime burns, thermal burns to the eye from pressure cooker blast, domestic fights etc). Refer Table 3.

Results: The commonest causes were corneal foreign bodies due to hammer and chisel injuries (81.54%) agricultural trauma (12%) chemical injuries (2.98%) thermal burns (0.49%) Arc welding (0.49%) blunt ocular trauma (with fist or pen, cricket ball) (1.98%). Serious globe injuries due to road traffic accidents were less commonly seen (0.49%) refer table 4. No visual impairment (VA 6/6 -6/18) was seen in 2063 (64.10%); visual impairment (VA < 6/18 – 6/60) in 395 (12.27%) and severe visual impairment occurred in (VA < 6/60 3/60) 183 (5.6%). Blind by WHO Definition < 3/60 – NPL) was seen in 280 (8.70%) patients It was unilateral blindness due to corneal infection / corneal opacities. Refer Table 5. Bilateral trauma was observed in 155 (4.8%). Refer Table 3. Complications observed were corneal foreign bodies siderosis in (80%) Traumatic hyphema in (4%) Traumatic mydryiasis, in (3%) traumatic cataract in (1%), Fungal keratitis (2.5%) and or corneal abscess was seen in (7%), while recurrent corneal erosions occurred in (0.5%) of cases and conjunctival tear / cyst in (1%). Refer table 7.

Conclusion: This study highlights the incidence, causes and complications of ocular trauma in young adult males of this industrial estate area. The study emphasizes the need for health education, creating awareness and importance of wearing appropriate protective devices at work to prevent ocular trauma. Government and health policy makers could play important role in prevention of ocular trauma by imposing and implementing protective eye health policies.

INTRODUCTION

Ocular injury is an important cause of preventable unilateral loss of vision, particularly in developing countries work place, including agricultural, are reported to be the commonest causes of eye injury in young adults10,11 the higher incidence of ocular trauma in young adult men is multi-factorial such as work related, sports related, and reluctance to wear protective devices at work. Similar correlations have been demonstrated in other studies also.10,11,12

In developed countries the introduction of effective preventive strategies and changes in work practices and life style have led to fewer injuries. Almost 100 years ago more than (70%) of all serious injuries occurred in the workplace.12,13,14 With heavy industry and no knowledge of protective device, industrial accidents were common. Appropriate standards for eye protection were introduced and decline of heavy industry further reduced this cause and type of injuries. The road traffic accidents took over as the most common cause of serious ocular injury in 1960’s
Ocular trauma is a public health issue and is emerging a major cause of ocular morbidity. Hence preventive steps must be taken to avoid deleterious outcomes of these injuries. This study reflects that the trauma was seen mostly in males (the working force of a country) especially men working in industrial areas suffer from hammer on chisel type, resulting in lodging of metallic foreign bodies on cornea. Now, this tragedy can be prevented by the health policy makers under legislative cover through wearing of protective goggles at work which should be provided free of cost to the laborers. Arc welders and farmers working in agricultural areas should also wear them, to reduce the incidence of corneal infections and avoidable blindness. Better supervision in home, school and at play will reduce ocular trauma in children.

In general the more serious types of ocular trauma such as ruptured globes and corneal lacerations requiring surgical reconstruction are less frequently seen. Ocular injury is an important cause of preventable unilateral loss of vision, particularly in developing countries. Work place related injuries, including agricultural trauma are reported to be the commonest cause of eye injury in young adult. The higher incidence of ocular trauma in young adult man is multifactorial such as work related, sports related and reluctance to wear protective devises at work similar correlations have been demonstrated in other studies also.

Sports and leisure activities become the main source of eye injuries in 1980’s Home is now the most common location. In the past children suffered a high amount of serious eye injuries However this pattern has changed over time perhaps due to better supervision of children. Ocular trauma has been recently highlighted as a major cause of ocular mortality and morbidity. It is a serious problem for Health and economy. Worldwide approximately 1.6 million people are blind from eye injuries, 2.3 million are bilaterally blind and 1.9 million have unilateral visual loss. Ocular trauma from road traffic accidents has dramatically declined from the law of wearing seat belts and introduction of laminated windscreens, similarly if appropriate standards for eye protection such as wearing of protective goggles (Polymethylmethacrylate) in work places like industries and factories will reduce hammer chisel injuries, injuries from arc welding, agricultural trauma, chemical injuries and sports related ocular trauma.

**MATERIAL & METHODS**

A Total of 55704 patients attended the Eye OPD between 2010-2014, out of which 3218 (5.7%) patients had sustained some form of ocular trauma. The majority of patients affected were young adult males 2958 (91-92%) while 278 (8.6%) were females and 131 (4.0%) were children below 15 years. Refer table 1. The preponderant age group affected was the first two decades of life 16-25 and 26-35 years (51%) refer table 2.

This is a retrospective analysis of the OPD data of patients with ocular trauma presenting to the Eye OPD WBMH between 2010-2014 with a view the develop effective plan and strategy to reduce ocular morbidity from these preventable causes of blindness. Ocular trauma can occur in a variety of situations, such as industrial accidents, assault with blunt objects or fist, penetrating or firearm injuries, sports injuries, household accidents with blunt or sharp objects, chemical and thermal injuries.

**RESULTS**

As this is Industrial Estate area approximately (80%) injuries occurred in young adult males, at work, (mostly Foreign bodies on cornea. Comparatively less ocular trauma was seen in females (11%) mostly at home due to (alkali, lime burns, thermal burns to the eye from pressure cooker blast, domestic fights etc). Refer Table 1. The common causes were corneal foreign bodies due to hammer and chisel injuries (81.54%) agricultural trauma (12%) chemical injuries (2.98%) thermal burns (0.49%), arc welding (0.49%) blunt ocular trauma (with cricket ball) (1.98%). Serious globe injuries due to road traffic accidents were less commonly seen (0.49%) refer table 6.

No visual impairment (VA 6/6 - 6/18) was seen in 2063 (64.10%), visual impairment (VA < 6/6 - 6/60) in 395 (12.27%) and severe visual impairment occurred in (VA < 6/60 - NPL) 183 (5.6%). Blind by WHO Definition < 3/60 - NPL) was seen in 280 (8.70%) patients It was unilateral blindness due to corneal infection / corneal opacities Refer Table 5. Bilateral trauma was observe in 155 (4.8%) Refer Table 3.

Complications observed were corneal foreign bodies siderosis in (80%) traumatic hyphema in (4%), traumatic mydryiasis in (3%) traumatic cataract in (1%), fungal keratitis (2.5%) and or corneal abscess was seen in (7%), while recurrent corneal erosions occurred...
in (0.5%) of cases and conjunctival tear / cyst in (1%). Refer table 7.

In this study prevalence of ocular trauma was more commonly seen in young adult males in the first two decades of life. Young adults at work are most vulnerable. This being an industrial agricultural area, most of the injuries were mechanical (hammer and chisel type) resulting in lodging of iron foreign bodies on the cornea. Similarly agricultural trauma resulting in corneal infection was seen often during the harvesting season. Corneal infection leading to blindness from corneal opacities due to delayed presentation and repeated attempts at self treatment is a cause of loss of preventable disability in this study.

### Table 1: Frequency of Patients with Trauma

<table>
<thead>
<tr>
<th>Total patients 2010-14</th>
<th>Patients with ocular trauma n(%)</th>
<th>Male n(%)</th>
<th>Female n(%)</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>55704</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Age and gender distributions

<table>
<thead>
<tr>
<th>Age group</th>
<th>Male</th>
<th>Female</th>
<th>Children</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 15 years</td>
<td>96</td>
<td>35</td>
<td>131</td>
<td>4%</td>
</tr>
<tr>
<td>16-25</td>
<td>836</td>
<td>81</td>
<td>917</td>
<td>28.5%</td>
</tr>
<tr>
<td>26-35</td>
<td>641</td>
<td>83</td>
<td>724</td>
<td>22.5%</td>
</tr>
<tr>
<td>36-50</td>
<td>739</td>
<td>35</td>
<td>774</td>
<td>24.06%</td>
</tr>
<tr>
<td>Over 50 years</td>
<td>426</td>
<td>26</td>
<td>452</td>
<td>14.06%</td>
</tr>
<tr>
<td>Age data NA</td>
<td>202</td>
<td>18</td>
<td>220</td>
<td>6.836%</td>
</tr>
<tr>
<td>Total</td>
<td>2958</td>
<td>278</td>
<td>3218</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 3: Eye Injured in

<table>
<thead>
<tr>
<th>Eye</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both</td>
<td>155</td>
<td>4.8 %</td>
</tr>
<tr>
<td>Right</td>
<td>1488</td>
<td>46.25%</td>
</tr>
<tr>
<td>Left</td>
<td>1575</td>
<td>48.95%</td>
</tr>
<tr>
<td>Total</td>
<td>3218</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 4: Frequency: Place of Injury

<table>
<thead>
<tr>
<th>Place of injury</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work place industrial</td>
<td>2574</td>
<td>80%</td>
</tr>
<tr>
<td>Agricultural</td>
<td>386</td>
<td>12%</td>
</tr>
<tr>
<td>Home</td>
<td>112</td>
<td>3.5%</td>
</tr>
<tr>
<td>School &amp; play ground</td>
<td>64</td>
<td>2%</td>
</tr>
<tr>
<td>RTA</td>
<td>16</td>
<td>0.5%</td>
</tr>
<tr>
<td>Chemical thermal &amp; arc welding</td>
<td>66</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>3218</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 5: Visual acuity in the injured Eye

<table>
<thead>
<tr>
<th>VA</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/6-6/18</td>
<td>2063</td>
<td>64.10%</td>
</tr>
<tr>
<td>6/18 – 6/60</td>
<td>395</td>
<td>12.27%</td>
</tr>
<tr>
<td>&lt; 6/60 – 3/60</td>
<td>183</td>
<td>5.6%</td>
</tr>
<tr>
<td>&lt;3/60</td>
<td>280</td>
<td>8.70%</td>
</tr>
<tr>
<td>Data NA</td>
<td>297</td>
<td>9.2%</td>
</tr>
<tr>
<td>Total</td>
<td>3218</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 6: Causes Of Injury

<table>
<thead>
<tr>
<th>Causes of injury</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corneal foreign bodies</td>
<td>2624</td>
<td>81.54</td>
</tr>
<tr>
<td>Agricultural trauma</td>
<td>286</td>
<td>12</td>
</tr>
<tr>
<td>Chemical injury</td>
<td>96</td>
<td>2.98</td>
</tr>
<tr>
<td>Thermal injury</td>
<td>16</td>
<td>0.49</td>
</tr>
<tr>
<td>ARC welding</td>
<td>16</td>
<td>0.49</td>
</tr>
<tr>
<td>Blunt trauma</td>
<td>64</td>
<td>1.98</td>
</tr>
<tr>
<td>Road Traffic Accidents (RTA)</td>
<td>16</td>
<td>0.49</td>
</tr>
<tr>
<td>Total</td>
<td>3218</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 7: Complications of Trauma

<table>
<thead>
<tr>
<th>Complications of trauma</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corneal &amp; Conjunctival Foreign bodies w/siderosis</td>
<td>2374</td>
<td>80%</td>
</tr>
<tr>
<td>Conjunctival tear / cyst</td>
<td>30</td>
<td>1%</td>
</tr>
<tr>
<td>Hyphaema</td>
<td>119</td>
<td>4%</td>
</tr>
<tr>
<td>Traumatic mydriasis</td>
<td>89</td>
<td>3%</td>
</tr>
<tr>
<td>Self sealed corneal lacerations</td>
<td>30</td>
<td>1%</td>
</tr>
<tr>
<td>Traumatic cataract</td>
<td>30</td>
<td>1%</td>
</tr>
<tr>
<td>Keratitis (Fungal)</td>
<td>74</td>
<td>2.5%</td>
</tr>
<tr>
<td>Corneal abscess</td>
<td>207</td>
<td>7%</td>
</tr>
<tr>
<td>Recurrent corneal erosion</td>
<td>15</td>
<td>0.5%</td>
</tr>
<tr>
<td>Total</td>
<td>3218</td>
<td>100%</td>
</tr>
</tbody>
</table>
DISCUSSION

Ocular trauma is a important cause of avoidable and preventable unilateral/bilateral blindness. Ocular trauma has recently been highlighted as a major cause of visual morbidity. Worldwide approximately 1.6 million people are blind from eye injuries. 2.3 million blind bilaterally and 9 million ocular trauma is a serious problem for health and economy according to the United State. Eye Injury Registry 95% ocular injuries occur in males, most of them are 30 years of age.1,2,3,4

The pattern of ocular trauma varies from place to place, depending on geographical location, socioeconomic status and literacy level. Some population groups are at increased risk of Eye injuries because of greater exposure to hazards. After trachoma corneal opacity as result of trauma as a emerging cause of blindness and has shown as increase in the recent years.5 Young adult males are more prone to ocular trauma and this affects their psychological and economic status.6,7

Most of the eye injuries are preventable.8,9 There is a need for epidemiological studies for a better understanding of ocular trauma to develop and implement preventive strategies. This study aims to determine the prevalence, incidence, pattern and causes of ocular trauma and its complications and proportion of trauma related visual impairment in the local population presenting to the Eye OPD at Naseerullah Baber Memorial Hospital, Peshawar so that effective preventive measures can be planned and implemented to prevent ocular trauma in this community.

Govt. Naseerullah Baber Memorial Hospital Kohat Road Peshawar (NBMH) is the main leading provincial hospital situated in an Industrial Estate and a catchment area of surrounding rural population of approximately one million. Ocular trauma is frequently seen in patients attending the Eye OPD of NBMH.

In this retrospective analysis of data retrieved from 2010-2014. A total Nos. of 55704 patients attended the Eye OPD, out of this 3218 (5.7%) patients presented with ocular trauma in this duration. The commonest ocular trauma seen was corneal damage from (hammer and chisel), injury with foreign bodies (iron particles), embedding in the cornea (81.54%) in young adult males working in industrial estate, resulting siderosis and sometimes leading to infection and corneal abscess in (6.4%) of patients, necessitating prolonged treatment with topical antibiotics and/or systemic and topical antifungal drugs, which was very costly and also resulted in ocular morbidity. Delayed presentation, repeated attempts at self removal of Corneal foreign bodies and resulted in secondary corneal infection and corneal opacity with decreased vision. This could be avoided by regular use of protective goggles (polymethyl-methacarbonate) at work.

The second commonest eye injury observed was agricultural trauma (12%) resulting in keratitis (2.29%) often fungal in farmers during harvesting season. Agricultural trauma is a common cause of ocular injuries in this study and compares with studies in India, Malavi and rural Nepal.7,8 The third common type of injury was blunt trauma, due to fist fights, resulting in Hyphema (3.69%) Traumatic mydriasis (2.76%) self sealed corneal laceration (.93%), recurrent corneal erosions (0.49%) sometimes conjunctival tears or traumatic cysts were also observed (1%). Refer to Table 6. Chemical injury with alkali or sulphuric acid burns due to car battery explosion were seen in (2.96%) cases thermal burns to cornea due to pressure cooker blast were seen in (0.49%) and trauma from arc welding was seen in (0.49%). Road traffic accidents resulting in severe open globe injuries, penetrating or perforating injuries were seen less frequently (0.49%) of patients. Refer table 5.

CONCLUSION

Ocular injuries are an emerging cause of ocular morbidity. Ocular trauma is a serious problem for health and economy. In this study most of the trauma seen was in males under 30 years of age. It was seen in men working in industrial areas and was of hammer on chisel type resulting in lodging of foreign bodies (iron) on cornea. This can be prevented by the health policy makers to implement by law, the wearing of protective goggles at work and these should be provided free of cost to the laborers. Arc welders and farmers working in agricultural areas should also wear them, to reduce the incidence of corneal infections and avoidable blindness. Better supervision in home, school and at play will reduce ocular trauma in children. Ocular trauma is a public health issue, in particular, because preventive steps may be taken, to avoid deleterious outcomes of ocular injuries.

REFERENCES


First National Pediatric Ophthalmology Conference
Association of Pediatric Ophthalmology Pakistan (APOP)

Sunday, 21st February 2016
Pearl Continental Hotel Lahore

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CASE REPORT

Visual Field defects are common in glaucoma. However they may also be seen in various other neurological conditions. The purpose of this case report is to reemphasize the importance of visual field assessment as a preliminary investigation in all cases of optic disc enlargement so that proper diagnosis could be made early and effective treatment instituted in time.

A 45 years old female, house wife presented to the out-patients Eye Department of NBM Hospital, with the complaint of painless progressive loss of vision, which was gradual, more in the left eye and associated with headache. She had no history of nausea or vomiting. She had acromegalic features with broad spade like hands, was obese and had sparse eye brows with loss of hair and a slow monotonous voice. She was not hypertensive or diabetic and there was no past ocular history of surgery or trauma. However she was on topical anti glaucoma therapy for the past two years. She consulted the out patients department for refraction to correct her deteriorating vision.

On ocular examination Her visual Acuity was:
OS 6/18
OS CF (Unaided)

With refraction it was corrected to:
OD 6/6
OS 6/60 (aided)

Her intraocular pressures were 10mm OD and 10 mmHg, Pupils OD round briskly reactive. OS sluggish and showed Relative afferent pupillary defect. Anterior chamber was quiet in both eyes. Lens and cornea were normal both eyes. Fundoscopy revealed bilateral symmetrical advance disc cupping with slit like pores in the lamina cribrosa and left disc pallor comparable with optic atrophy. Gonioscopy showed open angles in both eyes. Keeping in view the bilateral advance symmetrical disc changes we decided to assess her visual Fields. Goldman perimetry was done which showed the classic Bi-temoporal Hemianopia characteristic of pituitary adenoma. CT SCAN was done with contrast and 2mm see sections of the brain with specific view of the pituitary fossa. It showed macro-adenoma, compressing the optic chiasm. She was referred to a Neurosurgeon for further management. She underwent a transphenoidal hypophysectomy, for her pituitary tumor. Ocular review after Neurosurgery showed stable visual acuity with glasses, no further progression of disc changes. She was taken of the anti glaucoma medication.

DISCUSSION

Although increased cup disc ratio is a feature of glaucoma, however it can also be seen in pituitary tumours compressing the optic chiasm, resulting in bilateral symmetrical increased C/D ratio causing bitemporal or quadrantonic homonymous hemianopia.

In glaucoma, there is bilateral but a symmetrical increase in C/D ratio with tissue loss at superior and/ or inferior poles, thinning of the neuro-retinal rim often associated with areas of para-papillary atrophy or choroidal sclerosis and is associated with localized
field defects1-4 or disc haemorrhages. Pituitary adenomas are the most common primary intracranial tumor to produce neuro-phthalmological features. The estimated prevalence rate in general population is 17%5. A pituitary adenoma may present with visual field defects, classically bitemporal hemianopia. It arises from the compression of the optic nerve by the tumor. The specific area of the visual pathway at which compression by these tumors occurs, is at optic chiasma, which is central in 80%. In 10% the optic chiasma is pre fixed, tumors involve the optic tract first whereas in the remaining 10% optic chiasma is a post fixed and tumor damages the optic nerve first6-9 (junctional scotoma10. The differential diagnosis includes pituitary tuberculoma, especially in developing countries and in immuno-compromised11 patients. The diagnosis is confirmed by testing hormone levels, and by radiographic imaging of the pituitary (for example, by CT scan or MRI). There may be diplopia if the tumor extends laterally into the cavernous sinus and involves the abducent (6th) Nerve. See saw Nystagmus may occur. Color desaturation across the vertical mid line of uniocular field loss is an early sign of chiasmal compression.

Hormone secreting pituitary adenomas cause one of several forms of hyperpituitarism. According to frequency, the most frequent are prolactin secreting pituitary adenoma. Non secreting pituitary adenomas are in second place, growth hormone (GH) secreting are in third place, Adreno-corticotrophic (ACTH) hormone secreting tumours in fourth, and the rarest are the thyroid stimulating hormone (TSH) secreting adenomas. The most common combination being growth hormone and prolactin secreting adenoma. Growth hormone causes gigantism in children and acromegaly in adults.12 On Fundoscopy most of the cases show normal optic disc, if altered it can be a diffuse atrophy or more typically the “band” or “bow-tie” atrophy that occupies a more or less horizontal band across the disc with relative sparing of the superior and inferior portions where the majority of the spared temporal fibers enter.12

Various types of headache are common in patients with pituitary adenomas such as chronic and episodic migraine and more uncommonly various unilateral headaches, primary stabbing headache and cluster headache.13 During the last years OCT (Optical Coherence Tomography) has been used to establish and quantify the axonal loss in severe neurological diseases. OCT can measure peripapillary retinal nerve fiber layer (RNFL) thickness, a parameter which has been found to be reproducible and useful for the diagnosis, prognosis and follow up of optic nerve axonal damage in several neurological diseases14,15,16 including pituitary adenoma. OCT is also used to determine nerve fiber layer thickness and axonal damage in glaucoma.
Significance of Visual Field Assessment in a Suspected Case of Glaucoma & Correlation with Neurological Visual Field Defects

CONCLUSION

This case report indicates the significance of automated perimeter for assessing the visual fields in all glaucoma patients as it may uncover some underlying neurological conditions. Pituitary adenomas are a common pathology with a wide spectrum of features and ophthalmological manifestation. The visual field defects are characteristics and respect the vertical meridian whereas in glaucoma the field defects have specific pattern and respect the horizontal meridian. This is due to different mechanism of axonal nerve fiber damage involving different parts of the optic disc and retina as explained. If an Ophthalmologist comes across such a case it can best be managed in a multidisciplinary way.

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ABSTRACT

Aims of Study: Neodymium: Yttrium Aluminium Garnet (Nd: YAG) laser is used in the treatment of posterior capsule opacification (PCO) to improve visual acuity. PCO causes significant reduction in visual acuity in patients who had cataract surgery. This study is aimed at determining the visual outcome and complications of patients who received Nd: YAG laser application following PCO. Visual outcome and complications of Nd: YAG laser posterior capsulotomy: an experience at CMC Hospital Larkana.

Study Design: Prospective observational study.

Place and Duration: Department of Ophthalmology Chandka Medical College Civil Hospital Larkana from March 2011 to March 2013.

Patients and Methods: The study comprises 500 patients selected from OPD from March 2011 to March 2013, who underwent Nd: YAG laser posterior capsulotomy. Abraham capsulotomy contact lens was placed onto the eye. The aiming beam was focused on the posterior capsule 1 mm inside the IOL edge. Nd: YAG laser was applied to create an opening in the posterior capsule.

Result: In this study there were 260 males and 240 females with mean age of 61.4 years. The mean duration between cataract surgery and capsulotomy was 1.4 years. At last follow up the visual acuity improved in 86.3% cases. There was marked improvement in the best corrected visual acuity after laser application, (61.8%) cases had visual acuity of 6/9 to 6/6. (33.2%) cases had visual acuity of 6/18 or better after 4 weeks of laser application. Only 16 (3.2%) eyes had visual acuity of 6/24 and 9 (1.8%) eyes had visual acuity of less than 6/60. These patients were suffering from age related macular degeneration. Mean laser shots applied were 22.3 (SD=6.5) with a mean power 1.3 ml SD (.04). Acute complications in first week included bleeding from iris, pitting to the IOL, hanging flap, transient rise in intraocular pressure, transient anterior chamber reaction, cystoid macular edema which resolved over a period of six months. Retinal detachment was noted in six cases after a period of at least Two years follow up.

Conclusion: Nd: YAG laser posterior capsulotomy is a safe and effective procedure with good visual outcome which can be adopted by skilled ophthalmologists without any significant harm to the patients.

Key words: Laser, posterior capsular opacification, visual impairment, complications.
threatening retinal detachment. In our setup Nd: YAG laser posterior capsulotomy is a routine procedure for managing PCO, so its merits and limitations should be addressed. This study is designed to see the visual improvement and related complications after Nd: YAG laser posterior capsulotomy. The possible complications associated with this technique are elevation of intraocular pressure.\textsuperscript{6} Damage of Intraocular lens\textsuperscript{6,7}, hanging flap, acute iritis, transient anterior chamber reaction, cystoid macular edema (CME) is occasional complication of Nd: YAG laser posterior capsulotomy and is less common when capsulotomy is delayed for six (6) or more months after surgery.\textsuperscript{8} Retinal detachment is a rare complication and care should be taken in high risk patients like those having retinal detachment (RD) in the other eye or high myopes.\textsuperscript{8}

Keeping all above facts in our mind we designed our study to note the visual outcome and prevalence of different kind of complications with ND: YAG laser posterior capsulotomy.

**PATIENTS & METHODS**

An observational prospective cohort study conducted at the department of Ophthalmology, Chandka Medical College and Civil Hospital Larkana after obtaining informed consent from all the participants between March 2011 and March 2013. Patients with visually significant posterior capsular opacification were selected from the outpatient department of Ophthalmology civil hospital Larkana. Patient were excluded from the study if there was a history of uncontrolled glaucoma, advanced glaucoma, hazy cornea, very dense posterior capsular opacification, any posterior segment pathology likely to cause decreased vision after treatment. Baseline data was obtained for each patient before initiation of treatment on a prescribed proforma of each patient underwent complete workup which included a full ocular and medical history, best corrected Snellen’s visual acuity, slit lamp biomicroscopy, Goldmann’s applanation tonometry, gonioscopy and fundoscopy. Pupils were dilated with Tropicamide 1% and Phenylephrine 10% eye drops. Immediately before the laser procedure a single application of Proparacaine 0.5% was instilled onto the eye scheduled for Nd: YAG laser capsulotomy.

All the capsulotomies were performed by a qualified ophthalmologist. Five hundred eyes of five hundreds patients underwent the procedure with a pulse duration of 4 nanosecond, a spot size of 8 micron, and pulse energies ranging from 0.5-2.0 mJ, coupled to a slit lamp delivery system with a 1064 nm Laser beam. With the patient seated at the slit lamp system, Abraham capsulotomy contact lens was placed onto the eye. The aiming beam was focused on the superior capsule 1 mm inside the IOL edge. Nd: YAG laser was applied with a 8.0 micron spot size and a power of 0.5 to 2.0 mJ and pulse duration of 4.0 nanosecond, to create small openings in the capsule from 12 to 7 ‘o’clock position and then from 12 to 5 ‘o’clock position or laser shots at the center of the posterior capsule and widen the opening in cruciate pattern.

Postoperatively, patients were prescribed Prednisolone 0.1 % eye drops four times a day for 5 days and Timolol maleate eye drops 0.5% two times a day for one week. Patients were examined at 1 hour, 1 day, one week, two weeks 1 month, 3 months and 6 months, one year and then every six months, patients were advised to report any visual complaint to the principal investigator after the laser application. At each visit patients were invited to report any symptoms of ocular morbidity and the eye was examined which included visual acuity measurement, slit lamp biomicroscopy and Goldman applanation tonometry. In addition gonioscopy and fundoscopy were also performed. Complications were defined as intraoperative and during first week after treatment. Long term complications were defined as the abnormal findings at last follow up which was at least two years after which patient was censored. Patients were also censored if a complication like retinal detachment took place. Statistical analysis was performed on SPSS version 15 for windows. Frequency distribution tables were used to present the data. Mean and standard deviation were used for continuous variables. Categorical variables were presented as proportions and percentages.

**TABLE 1:** Visual outcome and pre laser visual acuity

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Visual acuity</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Less than 6/60</td>
<td>301</td>
<td>60.20%</td>
</tr>
<tr>
<td>2.</td>
<td>Less than 6/24</td>
<td>153</td>
<td>30.60%</td>
</tr>
<tr>
<td>3.</td>
<td>6/18</td>
<td>46</td>
<td>9.20%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>500</td>
<td>100</td>
</tr>
</tbody>
</table>

**TABLE 2:** Visual outcome and post laser visual acuity

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Visual Acuity</th>
<th>3rd Hours</th>
<th>24th Hours</th>
<th>1st Week</th>
<th>2nd Week</th>
<th>4th Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Less than 6/60</td>
<td>41</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>9</td>
</tr>
<tr>
<td>2.</td>
<td>6/60 to 6/24</td>
<td>176</td>
<td>124</td>
<td>120</td>
<td>111</td>
<td>16</td>
</tr>
<tr>
<td>3.</td>
<td>6/18 to 6/12</td>
<td>203</td>
<td>236</td>
<td>231</td>
<td>221</td>
<td>166</td>
</tr>
<tr>
<td>4.</td>
<td>6/9 to 6/6</td>
<td>80</td>
<td>116</td>
<td>125</td>
<td>144</td>
<td>309</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>
TABLE 3: Complications after nd-yag laser posterior capsulotomy

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Complications</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bleeding from the iris</td>
<td>04</td>
<td>0.8</td>
</tr>
<tr>
<td>2</td>
<td>Pitting of IOL</td>
<td>112</td>
<td>22.4</td>
</tr>
<tr>
<td>3</td>
<td>Hanging Flap</td>
<td>16</td>
<td>3.2</td>
</tr>
<tr>
<td>4</td>
<td>Transient IOP rise</td>
<td>243</td>
<td>48.6</td>
</tr>
<tr>
<td>5</td>
<td>Transient anterior chamber reaction</td>
<td>73</td>
<td>14.6</td>
</tr>
<tr>
<td>6</td>
<td>Cystoid macular edema</td>
<td>46</td>
<td>9.2</td>
</tr>
<tr>
<td>7</td>
<td>Retinal detachment</td>
<td>06</td>
<td>1.2</td>
</tr>
</tbody>
</table>

TABLE 4: Incidence of retinal detachment after nd: yag laser capsulotomy

<table>
<thead>
<tr>
<th>S. No</th>
<th>Study</th>
<th>Follow up</th>
<th>Incidence</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>314</td>
<td>4 weeks</td>
<td>None</td>
<td>Shaikh et al&quot;</td>
</tr>
<tr>
<td>2</td>
<td>460</td>
<td>6 months</td>
<td>0.87 %</td>
<td>Dawood et al&quot;</td>
</tr>
<tr>
<td>3</td>
<td>104</td>
<td>1 year</td>
<td>1.6</td>
<td>Burq &amp; Taqill</td>
</tr>
<tr>
<td>4</td>
<td>341</td>
<td>5 years</td>
<td>2.0</td>
<td>Ranta et al&quot;</td>
</tr>
<tr>
<td>5</td>
<td>789</td>
<td>3 years</td>
<td>0.86</td>
<td>Steinitz et al</td>
</tr>
<tr>
<td>6</td>
<td>2110</td>
<td>6 months</td>
<td>0.5</td>
<td>Stark et al&quot;</td>
</tr>
<tr>
<td>7</td>
<td>500</td>
<td>4 weeks</td>
<td>None</td>
<td>Khanzada et al*</td>
</tr>
<tr>
<td>8</td>
<td>730</td>
<td>3 years</td>
<td>1.7</td>
<td>Ahmed &amp; Quraishy</td>
</tr>
<tr>
<td>9</td>
<td>500</td>
<td>2 years</td>
<td>1.2</td>
<td>M Amin &amp; Syed Imtiaz Ali Shah</td>
</tr>
</tbody>
</table>

RESULTS

In this study there were 260 (52%) males and 240(48%) females with mean age of 61.4 year (SD=12.26). The mean duration between cataract surgery and capsulotomy was 1.4 years. 167 (22.8%) patients were from rural area of Sindh 232 (46.4%) from Larkana 126 (25.2%) and 42 (8.4%) from different areas of Baluchistan. Initial visual acuity ranged from 6/18 to less than 6/60. Table I. Mean laser shots applied were 22.3 (SD=6.5) with a mean power 1.3 mJ (SD=0.04). Visual acuity improved after laser application, (61.8%) cases had visual acuity of 6/9 to 6/6. (33.2%) cases had visual acuity of 6/18 or better after 4 weeks of laser application. Only 16 (3.2%) eyes had visual acuity of 6/24 and 9 (1.8%) eyes had visual acuity of less than 6/60. These patients were suffering from age related macular degeneration (Table II). Acute complications in first week included bleeding from iris, pitting to the IOL, hanging flap, transient rise in intraocular pressure, transient anterior chamber reaction, cystoid macular edema which resolved over a period of six months(Table III). Retinal detachment was noted in six cases after a period of at least two years follow up (Table IV).

DISCUSSION

In this study we have included in analysis only those cases who have completed the follow-up of at least two years to document the visual acuity and retinal complication of YAG laser capsulotomy. Incidence of retinal detachment observed by different observers is shown in Table 4. In our series incidence of retinal detachment is 1.2% which is not different from finding of other researchers for the same follow up period.10,11,12,13,14 When we perform a capsulotomy by using a Racquet shaped method and cruciate pattern, we focus the light on the capsule as there is a little danger of intraocular lens damage. This makes less disruption to anterior vitreous face.12,13,14 In addition we have used less amount of energy not more than 2.0 MJ in any case and usually less than 1.0 mJ. At a lesser amount of energy settings laser act on cutting mode rather than disruptive mode.15,16

CONCLUSION

The posterior capsule opacification is a common complication after cataract surgery worldwide and it can be managed safely by Neodymium-YAG laser posterior capsulotomy. Nd YAG laser procedure can improve visual acuity among patients with posterior capsular opacification and relatively associated with minimal complications, it is almost safe when performed after six months of the cataract surgery.

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Incidence of Serous Macular Detachment Patients with Macular Edema Secondary to Diabetes Mellitus

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Prof. Mustafa Iqbal FCRCOPth⁴, Saleemullah Khan MBBS⁵
Department of Ophthalmology, Khyber Teaching Hospital, Peshawar
& Ashraf Memorial Hospital, Abbottabad

ABSTRACT

Purpose: To determine incidence of serous macular detachments in patients with cystoid macular edema due to diabetes mellitus.

Methods: This retrospective study was conducted in Khyber Teaching hospital from December 2014 till August 2015. Diabetic patients having CME were identified from ward databases. OCT of macula of these patients were reviewed for signs of serous macular detachments. Patients having prior retinal surgery, other ocular pathologies or significant vitreomacular traction were excluded from the study. Patients having CME with CMT of >350µ were included in study. Other tests like FFA, HbA1c levels, renal profile and hypertension were also taken into account.

Results: Total number of eligible records for this study was 236 eyes of 168 patients. Total number of male patients was 96 (57%) and 72 (43%) female patients comprised the study group. Mean age of the patients was 53 years (Range 38-75 years). Total number of cases with SMD were 16 (6.7%) eyes of 9 patients. Central macular thickness of all eyes in study was 410µ (350µ- 689µ). However CMT of eyes with SMD was 472µ (350µ-693µ). There was a difference of 62µ in CMT of eyes with SMD as compared to eyes without CMT (p<0.001)

Conclusion: SMD with CME in diabetic patients is detectable on OCT and presents with increased CMT and worse visual acuity compared to patients without SMD.

INTRODUCTION

Diabetic macular edema (DME) is the most common cause of reduced vision in working age population.¹ According to a recent survey, prevalence of diabetes among males in Pakistan population is 12.14%, while 9.83% females are diabetic.⁶ Diabetic macular edema presents with reduced vision and is seen clinically as areas of retinal thickness, cystic changes in inner retina and areas of exudates around leaking aneurysms. Macular changes seen on Optical Coherence Tomography (OCT) include diffuse retinal thickening, cystoid changes with or without serous macular detachments and epiretinal membrane formation.¹ Risk factors for developing diabetic macular edema include poor glycemic control manifested by high HbA1c levels² and high systolic and diastolic blood pressure.⁸

Cystoid macular edema in diabetics results from extensive and (or) focal leakage from micro- aneurysms and dilated capillary segments. The fluid is initially located between the outer plexiform and inner nuclear layers; later it may also involve the inner plexiform and nerve fiber layers, until eventually the entire thickness of the retina becomes edematous. In the fovea, the fluid accumulates in the form of cystic spaces.⁹ The term ‘cystoid’ rather than ‘cystic’ is used because the fluid-filled spaces do not possess the epithelial layer that is present in a true cyst.

Serous macular detachments in patients with diabetic cystoid macular edema represents additional damage and a cause for severe vision loss in patients. Signs of SMD are not evident on routine Fluorescein angiograms. OCT of macula can demonstrate SMD and this should be offered to every patient with clinically significant macular oedema (CSMO).

Various studies have looked at incidence of SMD in cystoid diabetic macular edema, and have reported an incidence of 15% to 31%.¹⁰,¹³ Studies regarding the natural history and visual effects of SMD in cystoid DME have suggested that eyes having SMD in addition to cystoid DME suffer from greater visual loss, develop sub-retinal exudates, the efficacy of grid laser treatment in these eyes is compromised because of the sub-retinal fluid and have a poor prognosis following vitrectomy.¹⁴,²⁰

To our knowledge, no study has so far looked at the incidence of SMD in patients with DME in our population which usually has a poor glycemic control
and presents with a significantly raised HbA1c.

MATERIALS & METHODS

This retrospective study was conducted at Eye A Unit of Khyber Teaching Hospital from December 2014 till 1st July 2015. Patients with DME were identified from ward databases. Final eligibility was determined by reviewing patients clinical and OCT scan records for the following criteria in at least one eye: (1) No prior vitrectomy or retinal surgery, (2) Central Macular Thickness (CMT) of ≥ 350µ using Spectralis OCT, (3) presence of cystoid macular edema with or without SMD within the central subfield (area of 1 mm diameter centered on fovea), (4) absence of tractional changes on OCT and (5) absence of other retinal or choroidal pathologies. For those patients who had scans performed on multiple visits, the earliest scan that showed the maximum amount of retinal thickening or the presence of SMD was chosen. Central macular thickness in all selected OCT's was done using the in-built caliper available with every print.

All eligible patients had complete history taken and ophthalmic examination done. Special emphasis in history was to exclude contra indications to intravitreal therapy like recent history of stroke or myocardial infarction. Duration of diabetes and type of treatment undertaken was also noted. Examination included checking visual acuities, best corrected vision, tonometry using Goldman applanation tonometer, anterior segment evaluation using a slit lamp biomicroscope and dilated fundus examination using 90D and 60D lens.

Hematological investigations included daily fasting and two post prandial blood sugar levels, Glycosylated hemoglobin levels (HbA1c), fasting lipid profile, renal function tests including serum urea, serum creatinine and creatinine clearance levels and 8-hourly blood pressure monitoring. Fundus fluorescein angiography (FFA) was carried out on all patients to exclude macular ischemia as these patients were mostly booked to receive intravitreal Bevacizumab injections. Necessary precautions were taken to manage any unwanted side effects of the dye. Following treatment, all the patients were given 4-weekly appointments for follow-up and were asked to repeat OCT before every visit.

RESULTS

Total number of eligible records for this study was 236 eyes of 168 patients. All patients had macular edema of ≥350µ and cystoid spaces on OCT. Total number of male patients was 96 (57%) and 72 (43%) female patients comprised the study group. Mean age of the patients was 53 years (Range 38-75 years). Mean duration of diabetes in our study group was 12 years. One patient was type-I diabetic, all the rest were type-II diabetics. Total number of cases with SMD (Figure 1) were 16 (6.7%) eyes of 9 patients. Patients had different levels of associated diabetic retinopathy. In this study we found 5 eyes out of the 13 eyes with SMD to be having proliferative diabetic retinopathy. Rest of the eyes suffered from mild to severe non-proliferative diabetic retinopathy (NPDR).

Central macular thickness of all eyes in study was 410µ (350µ-689µ). However CMT of eyes with SMD was 472µ (350µ-693µ). There was a difference of 62µ in CMT of eyes with SMD as compared to eyes without CMT (p<0.001). FFA of these cases did not reveal leakage and later on pooling in area of SMD (Figure 2). Diagnosis of SMD could only be made on OCT findings. FFA also revealed enlarged FAZ in 36 (15%) eyes signifying macular ischemia. Intravitreal anti VEGF therapy was not given to these patients.

Average HbA1c of all cases was 8.6% (7.1-14.2%). Average HbA1c of patients with SMD was 8.9% (8.2-14.2%). Most common co morbidity in our study patients was nephropathy. Total patients having decreased creatinine clearance was 146 (87%), while 139 (83%) patients had proteinuria. Patients having uncontrolled blood pressure were 98 (58%) while 32 (19%) patients had deranged lipid profiles.

Figure 1: OCT of patient with bilateral SMD and cystoid macular edema.
manifested as an increase in thickness. Expansion in the plane perpendicular to the retinal surface is also accompanied by expansion in volume, thickness and length. Expansion due to accumulation of fluid. SMD. They suggested as the retina becomes edematous, it expands in volume, thickness and length. Expansion is based on mechanical lifting/buckling of retina upon neurosensory retina to lift or buckle away from the RPE, resulting in SMD.1

Studies have also looked into co morbidities in diabetic patients with SMD. A study conducted by Manoj S et al22 in India in 2013 looked into co morbidities of patients with SMD. They analyzed 34 patients with SMD and investigated them for presence of anemia, dyslipidemia, nephropathy, and cardiac disease. Results of the study showed that nephropathy was the most common co morbidity condition present in 82.3% of patients. (35.3%) had anemia, 12 (35.3%) had associated hypertension, and 11 (32.4%) had dyslipidemia. Another study conducted in India in 2010, by Turgut B et al compared the HbA1c levels of patients with and without SMD. They studied 60 patients in total, 30 without SMD (Group 1) and 30 with SMD (Group 2). The mean HbA1c levels were 8.16 ± 0.99% in group 1 and 10.05 ± 1.66% in group 2. The difference between the groups was statistically significant (P < 0.001).

CONCLUSION

Serous macular detachments in patients with diabetic cystoid macular edema represents additional damage and a cause for severe vision loss in patients. Signs of SMD are not evident on routine Fluorescein angiograms. OCT of macula can demonstrate SMD and this should be offered to every patient with clinically significant macular oedema (CSMO).

REFERENCES

Comparison Between Foldable (AcrySof) & Polymethyl Methacrylate (PMMA) IOLs in Formation of Posterior Capsular Opacification (PCO)

Sidrah Riaz FRCS, FCPS¹, Mazhar Z. Soomro DOMS², Shabana Choudary FCPS, FRCS³
Zaheerudin Aqil Qazi FCPS⁴, Tariq Khan FCPS⁵

ABSTRACT
Objective: The objective of this study was to compare foldable and polymethyl Methacrylate IOLs for formation of posterior capsular opacification in patients undergoing age related cataract surgery.

Study Design: Randomized clinical trial.

Setting: Layton Rehmatullah Benevolent Trust Hospital, Lahore.

Duration: From March 2010 to September 2010.

Subjects and Methods: The study included 200 patients undergoing cataract surgery and IOL implantation who were divided into two groups, each group comprising of 100 patients that fulfill the inclusion criteria. Foldable AcrySof IOL was implanted in group A and PMMA IOL was implanted in group B. The patients who underwent surgeries were followed and assessed for PCO formation at 01, 03 and 06 months period postoperatively.

Results: No case of PCO was found in both groups at one month follow up. At 03 months follow up PCO developed in 01 out of 100 eyes (0.5%) in group B and no case of PCO was found in group A (0%). At 06 months follow up PCO developed in 19 out of 100 eyes (9.5%) in group B and no case of PCO was found in group A (0%).

Conclusion: Implantations of Foldable Intraocular lenses (AcrySof) are associated with a reduced degree of Posterior capsular opacification formation and better visual outcome.

Key Words: Cataract, Intraocular lens, PMMA, AcrySof, Phacoemulsification, Extra capsular cataract surgery.

INTRODUCTION
Posterior capsular opacification (PCO) remains the most common complication of modern cataract surgery.⁶ It results in decreased visual acuity, impaired contrast sensitivity, glare and monocular diplopia.

Posterior capsular opacification (PCO) occurs in up to 50% of eyes following cataract extraction.³ Posterior capsular opacification (PCO) is a post-operative complication following cataract surgery and implantation of IOL. PCO is a misnomer as there is no posterior capsule opacification but this is migration of retained cell to posterior capsule and their proliferation. At 03 months follow up, the incidence of PCO among eyes with non-foldable IOL was 3% and in foldable IOL there was no opacification. At 3-6 months follow up, the incidence of PCO with non-foldable IOL and foldable IOL was 10% and 2% respectively.³ According to Sterling and Wood, incidence of late onset PCO after extracapsular cataract extraction and IOL implantation varies from 18.4% to 50%. Wilhelmus and Emery reported an average opacification time of 26 month after surgery, with a range from 3 months to 4 years. In older group of patients, the frequency of capsular opacification is lower.⁴ Clinically, components of PCO can be differentiated, namely a ‘Regenerative’ and a ‘Fibrotic’ component. The regenerative PCO occurs more frequently. It is caused by residual lens epithelial cells (LECs) from the lens equator region that migrates and proliferates in the space between the posterior capsule and the IOL. Fibrotic PCO is caused by trans-differentiated (LECs) from the anterior capsule that gains access to the posterior capsule and cause whitening and wrinkling of the capsule.⁵ Both components lead to a decrease in visual function when they affect the central region around the visual axis.

Implantations of foldable Intraocular lenses (AcrySof) are associated with a reduced degree of posterior capsular opacification (PCO) and better visual outcome as compared to PMMA IOLs.

PCO also has important implications in the developing world, where it may increasingly become a significant cause of treatable blindness. Treatment of PCO by Neodymium: YAG (Nd: YAG) laser capsulotomy is effective but can lead to other
complications, including an increase in intraocular pressure, cystoid macular edema, ocular inflammation and retinal detachment.\textsuperscript{6} Besides, Nd: YAG laser capsulotomy does not improve visualization of the peripheral retina and increases the cost of cataract treatment. Therefore, a great deal of effort has gone into developing new ways to prevent the formation of PCO. These efforts include modification in lens design, lens material, surgical technique and other approaches.\textsuperscript{7}

Recently different type of optic biomaterials have been developed for foldable intraocular lens (IOL). At present, the optics of most intraocular lenses are composed of either hydrophobic material such as foldable (AcrySof) or hydrophilic material such as Polymethyl Methacrylate (PMMA) IOL. The size, shape and biomaterial of lens may contribute to posterior capsule opacification. Type of IOL utilized influences PCO. Biomaterial composition and design of IOL has an effect on the incidence of PCO.\textsuperscript{8} Adhesive nature of biomaterial may be the factor for reducing the incidence of PCO with the use of acrylic lens Square-edged design of IOL reduces the occurrence of PCO (Nishi et al). Studies show that acrylic IOL’s have a lower incidence of PCO.\textsuperscript{8} The incidence of PCO can be minimized with modern cataract surgical techniques like continuous curvilinear capsulorhexis, thorough cortical clean up, posterior capsular polishing, in-the-bag implantation of IOL and IOL shape, biomaterial.\textsuperscript{3,8}

**METHODOLOGY**

Total 200 eyes were studied and divided into two groups according to the type of IOL implanted. Group A included 100 patients undergoing cataract surgery with foldable (acrylic) intraocular lenses (IOLs); Group B comprised 100 patients which received non-foldable (PMMA) IOLs during cataract surgery.

The patients with history of amblyopia, diabetic retinopathy, corneal scars pseudo-oexfoliation syndrome, developmental or congenital cataract, previous laser treatment, ocular tumor and patients with history of intraocular inflammation (uveitis, chorio-retinitis) were excluded. All patients having age related cataract with age 30 to 70 years were included.

Informed consent was taken from all the subjects included in the study. The source of information included hospital records of patients. All the information’s collected on a predesigned proforma regarding socio-demographic profile i.e. name, age, and socioeconomic background. A standardized surgical protocol had followed, any patient with surgical complications excluded, and all patients will receive standardized medication and follow-up. The patients who underwent surgeries were followed and assessed for PCO formation at 01, 03 and 06 months period postoperatively.

All the collected data was entered and analyzed using SPSS version 11.0. Mean and standard deviation was calculated for age. Gender was presented by calculating frequency and percentage. Qualitative assessment of posterior capsule opacification and its effects on visual acuity with two different IOLs (Foldable & PMMA) after cataract surgery had to be noted and tested by applying the Chi-square test. P value of less than 0.05 was considered as statistical significant.

**RESULTS**

In this study comparison was made between foldable (AcrySof) IOL and non foldable (PMMA) IOL regarding formation of posterior capsular opacification (PCO) after cataract surgery. The study population was divided into two groups; group A comprised of 100 patients in which Acrylic IOLs were implanted during cataract surgery and group B also comprised 100 patients in whom PMMA IOLs were used during cataract surgery. All patients were followed at 01, 03 and 06 months period postoperatively after cataract surgery; no case was missing at the end of study. Cases summary was shown in tables (Table 01, 01A, 01B & 01C).

In both groups total males were 103 (103%) and total females were 97 (97%) as shown in figure 01. There were 52 (52%) males and 48 (48%) females in group A and 51 (51%) males and 49 (49%) females in group B as shown in figure 02. The distribution of study population according to age is shown in table-02. In both groups, the age ranged from 45 to 70 years. The mean age (± SD) was 58.40 ± 8.187. No case of PCO (0%) was found in both groups at one month follow up as shown in figure 03. At 03 months follow up PCO was developed in 01 out of 100 eyes (0.5%) in group B and no case of PCO was found in group A (0%) as shown in Figure 04. At 06 months follow up PCO developed in 19 out of 100 eyes (9.5%) in group B and no case of PCO was found in group A (0%) as shown in figure 05.

Chi square test was done to determine the difference of success in the two groups at 06 months. It was statistically significant, p value 0.000 as shown in table 03.

<table>
<thead>
<tr>
<th>Table 01: PCO @ 3 months</th>
</tr>
</thead>
<tbody>
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<td>PCO Present</td>
</tr>
<tr>
<td>PCO Absent</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Comparison Between Foldable (AcrySof) & Polymethyl Methacrylate (PMMA) IOLs in Formation of Posterior Capsular Opacification (PCO)

Table 02: PCO @ 6 months

<table>
<thead>
<tr>
<th>PCO</th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>PCO Present</td>
<td>19</td>
<td>9.5%</td>
</tr>
<tr>
<td>PCO Absent</td>
<td>181</td>
<td>90.5%</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

PCO= posterior capsular opacification

Table 03: Distribution of Cases According To Age

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Total patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Percent</td>
</tr>
<tr>
<td>45_50 Years</td>
<td>55</td>
</tr>
<tr>
<td>51_60 Years</td>
<td>63</td>
</tr>
<tr>
<td>61_70 Years</td>
<td>82</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
</tr>
<tr>
<td>Mean</td>
<td>58.40</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>8.187</td>
</tr>
</tbody>
</table>

Chi Square = 20.994 df = 1 p Value = 0.0005

Figure 03: Comparison of PCO at 03 months follow up in foldable & pmma IOL

DISCUSSION

Cataract remains one of the major cause of blindness in old age group. A millions of people need surgery for this disease every year. History of surgical management of cataract span over 20 centuries having different surgical methods & procedures.

In view of the large amount of cataract surgery being performed, posterior capsular opacification has important medical, social, and economic implications, and consequently, there is considerable interest in its prevention.

PMMA was the first material used in the manufacture of IOLs; however, the introduction of Phaco-emulsification has prompted the use of foldable lenses to be inserted through smaller wounds. These two types of lenses have proved themselves to be nontoxic, highly biocompatible, and stable.
IOL biomaterial, shape, and size may contribute to PCO formation. Type of IOL utilized influences PCO. Biomaterial composition and design of IOL has an effect on the incidence of PCO. Studies show that acrylic IOL’s have a lower incidence of PCO. We consider that hydrogel material is surely associated with greater PCO on the basis of difference in growth pattern of lens epithelial cells. Adhesive nature of biomaterial may be the factor for reducing the incidence of PCO with the use of acrylic lens (Linnola) Square-edged design of IOL reduces the occurrence of PCO (Nishi et al). The AcrySof IOL has a sharp edge while the non foldable (PMMA) IOL has a round optic edge. There are clinical studies which have shown that IOL with sharp edge can prevent PCO. A recent systematic review based on Cochrane methodology included 26 prospective randomized controlled trials with a follow-up of at least 12 months and showed that in 5 out of 7 studies, visual acuity was better in sharp-edged IOLs than in round-edged IOL. The PCO score was significantly lower with sharp edged IOLs but did not differ significantly between 1- piece and 3-piece open-loop IOLs.

Patient related variables such as younger age, diabetes, and uveitis may increase the incidence of PCO formation and patients who had irregular or out of the range of 3–5 mm pupils, or with any other systemic or ophthalmologic disease were excluded from the study.

Our study demonstrates that the degree of PCO in the eyes with a non foldable (PMMA) IOL is more extensive than that in the eyes with an acrylic IOL. PCO in the presence of a non foldable (PMMA) IOL increased from the early postoperative period, but the increase virtually reached a peak by 06 months after surgery. At one month after surgery, the visual acuity was the same between eyes with acrylic IOL and PMMA IOL. No case of PCO was found in both groups at one month follow up. These findings are consistent with the study by Mahatme Vikas H and colleague. Similar results were also seen in study by Moin M and colleague.

At 03 months follow up PCO was developed in 01 out of 100 eyes (0.5%) in group B and no case of PCO was found in group A (0%), while incidence of PCO at 03 months among eyes with non-foldable IOL and foldable IOLs was 3% and 0% respectively in the study done by Mahatme Vikas H and colleague. The results of our study as compared to their study are better. Thereafter, however, visual acuity worsened significantly with time in eyes with the non foldable (PMMA) IOL, so that the visual acuity in eyes with an acrylic IOL was better than that in eyes with a non foldable (PMMA) IOL in the later postoperative period. At 06 months follow up PCO developed in 19 out of 100 eyes (9.5%) in group B and no case of PCO was found in group A (0%), while study done by Mahatme Vikas H and colleague incidence of PCO at 06 months among eyes with non-foldable IOL and foldable IOLs was 10% and 02% respectively. The results of the study done by Mahatme Vikas H and colleague and our study are comparable.

Thus, our results clearly show that PCO in the presence of a non foldable (PMMA) IOL impairs visual acuity more so than does that in the presence of an acrylic IOL. Similar results were shown in study by Moin M and colleague the clearer posterior capsules with polyacrylic lenses are reflected in the significantly lower PCO rates for this group (6.2% compared to 23.4% for PMMA). Hayashi et al found that the degree of posterior capsular opacification was significantly less in the hydrophobic acrylic IOL (AcrySof) compared to a hydrogel IOL (Hydro-view). Of the 100 eyes in each group, two (02%) in the acrylic group and 28 (28%) in the hydrogel group required Nd: YAG capsulotomy within 24 months after surgery.

In conclusion, the extent of PCO is substantially lesser in hydrophobic acrylic IOL implantation than that after PMMA IOL implantation. The rate of Nd: YAG capsulotomy was also lesser with the acrylic IOL than with the PMMA IOL, reflecting the fact that deterioration of visual acuity due to PCO was more pronounced in eyes with a PMMA IOL. Because of its hydrophilicity, PMMA material may allow active proliferation of lens epithelial cells and therefore may not be appropriate for use as an IOL material. Incidence of PCO is less with foldable IOL’s than non-foldable IOL’s. The incidence of PCO can be minimized with modern cataract surgical techniques like continuous curvilinear capsulorrhexis, thorough cortical clean up, posterior capsular polishing, in-the-bag implantation of IOL and IOL shape, biomaterial.

The results of current and previous studies suggest that posterior capsular opacification a postoperative complication after cataract surgery can be minimized with the use of foldable IOL as compared to non-foldable IOL.

CONCLUSION

Implantations of foldable Intraocular lenses (AcrySof) are associated with a reduced degree of posterior capsular opacification (PCO) and better visual outcome as compared to PMMA IOLs.

REFERENCES

Comparison Between Foldable (AcrySof) & Poly methyl Methacrylate (PMMA) IOLs in Formation of Posterior Capsular Opacification (PCO)


Comparison Between Foldable (AcrySof) & Polymethyl Methacrylate (PMMA) IOLs in Formation of Posterior Capsular Opacification (PCO)


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Managing Editor
INTRODUCTION

Lid defects involving the medial canthus and medial side of the eyelids have always been of great consideration for the Oculoplastic surgeons. Due to complexity of the structures and delicacy of cosmetic appearance of this region, the surgeons have to adopt the technique for reconstruction that suffices all the demands of this delicate area. Various procedures have been tried for reconstruction of different parts of the lids and canthi depending upon the location, size and thickness of the tumors or defect.

The ideal goal of reconstruction is to provide aesthetics and protection to the globe.¹ To attain these goals; reconstruction should ideally replace the delicate, thin, pliable, well vascularized and innervated tissues of the eyelids with those of its kind. For defects that cannot be closed with direct closure, structures adjacent to the eyelids may act as reservoirs for tissue harvesting and flap or graft transfer.² ⁶

The median forehead skin is one such good reservoir for lid, adnexal, nasal and various other facial reconstructions. There are conditions of the medial canthus, upper lid and lower lid which merit reconstruction of a large area. Median forehead skin provides an easily accessible and harvestable flap material for such reconstruction.

Conventionally the periorbital region was divided in following 4 zones.⁷ ⁹

- Zone I – upper eyelid;
- Zone II – lower eyelid;
- Zone III - medial canthus;
- Zone IV – lateral canthus

Single stage median forehead rotational flap (SSMFRF) is an effective procedure for lid reconstruction secondary to different causes of defects in the area of upper and lower eyelids and medial canthus. This modification reduces the number of surgical stages, hence reducing economical and psychological burden of the patient and the surgeon. It is associated with fewer complications, which are easily manageable. It shows promising results with good cosmetic appearance.

１Associate Professor. ２Ophthalmologist.

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Various surgeons have used forehead flap variations for reconstruction of medial canthus, upper and lower lids. Conventionally median forehead flap is performed as a two stage procedure. In first stage the flap is fashioned and reconstruction is done leaving a pedicle to allow vascular and structural conformity. In second stage the pedicle is cut and the cut edges are sutured. We performed this procedure in a single stage by accommodating the pedicle in an adjacent, continuous defect, hence reducing the number of surgical procedures which in turn reduces the burden of both patient and the surgeon in terms of time, economy and psychological stress of another surgery.

**MATERIAL & METHODS**

Patients were selected on non-probability purposive basis from Oculoplasty clinic, Isra Post Graduate Institute of Ophthalmology from January 2013 to December 2014. All the patients who underwent single stage median forehead rotational flap (SSMFRF) for lid reconstruction were included. Patients with complex reconstruction from multiple sources were excluded.

Preoperative and postoperative photographs of the patients were taken on every visit after informed consent. SSMFRF was planned in patients having defects on the upper lid, lower lid or medial canthus which cannot be closed with direct closure or local advancement flaps.

Majority of cases were performed under local anesthesia (Xylocaine 2% with Adrenaline 1:1000) except for two cases, which required general anesthesia. The tumor site (in case of tumor excision) was marked with Gentian violet dye leaving 2-4 mm of apparently normal skin depending upon the clinical evaluation of the tumor. A similar, slightly larger area was marked on the forehead skin along with its pedicle, making sure that the supratrochlear of supraorbital vessels are included in the pedicle. The base of the pedicle was marked up to the medial side of the eyebrow in a hinge fashion. A similar marking was done above the tumor meeting the pedicle at medial side of the eyebrow. A similar marking was done above the tumor meeting the pedicle at medial side of the eyebrow in a hinge fashion. Tumor was excised up to the desired depth and hemostasis achieved either by cautery, ligation or both. Specimen was saved in formaldehyde and sent for histopathology. We did not have the facility of standard frozen section or Mohs micrography at our institute, so excision well beyond the visible tumor was ensured.

The median forehead flap was dissected with 11 No. blade and fashioned up to the thickness of subcutaneous tissue with scissors up to the base of the pedicle. A defect similar in size and shape was created for the pedicle to fit in. After hemostasis the margins of the forehead wound were undermined by blunt dissection for direct closure. The forehead wound was closed by interrupted 4/0 polypropylene sutures.

The underside of the flap was shaved off all the fat and subcutaneous tissue and put in place. The flap was anchored at the recipient site with subcutaneous interrupted 6/0 vicryl sutures. The skin was approximated by interrupted 5/0 polypropylene sutures. The pedicle was fixed in the specified defect and sutured. A bolster was placed over the flap to avoid hematoma and ensure approximation without tension on the wound margins. Sterile bandage with antibiotic ointment was applied for 24 hours. Prophylactic oral antibiotic and NSAIDs prescribed.

The dressing was removed on 1st post-operative day and after assuring wound stability patients were discharged with additional topical antibiotic ointment. On 1st post-operative week the forehead sutures were removed along with alternate sutures of the flap. The oral medicine were stopped usually depending upon the wound condition. On 2nd week follow up the remaining flap sutures were removed. The remaining sutures were removed after one week. Patients were followed up for 3-6 months depending upon the cause of reconstruction as post tumor excision cases were followed as per histopathology report recommendation.

**RESULTS**

21 patients were included in this study. All patients underwent single stage median forehead rotational flap. Age of the patients range from 32 years to 78 years (mean of 59.28 years). 08 (38.09%) patients were male while 13 (61.90%) were female. 19 (90.47%) patients underwent surgery for reconstruction after tumor excision. Out of these 16 (84.21%) were proven to be Basal cell carcinomas, 02 (10.52%) were squamous cell carcinomas and 1 (5.26%) was melanoma. 16 (84.21%) patients had tumors at the medial canthus while 3 (15.78%) patients had tumors at medial aspect of the lower lid. 01 (13.04%) patient underwent surgery for cicatricial ectropion of the lower lid due to acid burn. 01 (4.76%) patient underwent surgery due to traumatic laceration and tissue loss. As far as complications are concerned 01 (4.76%) patient had forehead wound gaping which required re-suturing. 01 (4.76%) patient had wound dehiscence at the distal margin of the flap, which were dealt with re-suturing after refreshing the margins.

**Table 1: Causes of lid defects to be reconstructed**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Cause</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tumors</td>
<td>19</td>
<td>90.47</td>
</tr>
<tr>
<td>2</td>
<td>Traumatic tissue loss</td>
<td>02</td>
<td>9.52</td>
</tr>
</tbody>
</table>
Table 2: Distribution of types of lid tumors

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Type</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Basal cell carcinoma</td>
<td>16</td>
<td>84.21</td>
</tr>
<tr>
<td>2.</td>
<td>Squamous cell carcinoma</td>
<td>02</td>
<td>10.52</td>
</tr>
<tr>
<td>3.</td>
<td>Melanoma</td>
<td>01</td>
<td>5.26</td>
</tr>
</tbody>
</table>

Table 3: Post-operative complications

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Complication</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wound gap at donor site</td>
<td>01</td>
<td>4.76</td>
</tr>
<tr>
<td>2</td>
<td>Wound Dehiscence at flap recipient junction</td>
<td>01</td>
<td>4.76</td>
</tr>
<tr>
<td>3</td>
<td>Flap rejection</td>
<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

DISCUSSION

Large defects in various peri-orbital zones that cannot be covered by direct closure or local advancement flaps demand abundant tissue for reconstruction with adequate circulation to avoid failure or rejection. The forehead area is a good reservoir of donor tissue for various facial reconstructions. The broadness of the forehead allows fashioning a graft as vast as required. The entire length of the eyelids and medial canthal area can be covered by a forehead flap without disturbing the anatomy and cosmetic appearance of the donor area. The donor site can be easily closed by undermining the surrounding area. The normal midline furrow (more marked in elderly patients) helps in hiding the surgical scar. The presence of arterial supply, mainly the supratrochlear artery, within the pedicle of the midline flap renders it friendlier for acceptance at the recipient site.

Median forehead rotational flap is conventionally done as a two stage procedure. The first stage comprising the main surgical reconstruction while the second stage addressing the pedicle. The time between these two stages has been described by various surgeons between two to three weeks depending upon the extent of wound healing.

SSMFRF is a modification of conventional median forehead rotational flap which allows the surgeon to complete the procedure in a single stage without any cosmetic or structural compromise. The reduction in number of stage denotes a reduction in the surgical burden of the surgeon while on the patients end it reduces the cost, psychological stress of another surgery and the amount and time of post-surgical care. In this technique we made an additional wound near the main wound, taking advantage of the concavity between the medial end of eyebrow and the bridge of the nose, to fix the pedicle. The concavity of this area hides any additional scar.
Single stage reconstruction by median forehead flap has been used in nasal and facial defects by various surgeons. However as per available literature it was yet to be tried in medial canthal and medial parts of lids reconstruction. Although we used this technique without any major problem. However, there are some minor limitations that are possible in this regard. Any scarring or structural abnormality in the area for pedicle fixing can limit the use of single stage technique. Reconstruction of the lateral aspects of the lids or total lid loss also limits its efficacy as these conditions demand flaps with long pedicles which may be difficult to fix. Full thickness large defects of these zones do need separate procedures such as Cutler Beard and Hugh’s flaps. Total lid reconstructions have also been described by various surgeons using variations in forehead flap.

As far as complications are concerned, the only group of complication we encountered was wound dehiscence. We noticed one case of wound gapping at the donor site i.e. the forehead. Wound was freshened and re-sutured ensuring that there is no tension on the wound margins. There was one case in which wound dehiscence was noted at the distal margin of the flap probably owing to post-operative wound contraction. It was also dealt by re-suturing after freshening of the margins.

Forehead flaps have been used extensively and different modifications have been tried by various surgeons with promising results. These include scalping forehead flap, Galeal flap, expanded forehead flap, tunneled forehead flap and bucket handle flap. These techniques have been described by various surgeons to reconstruct the medial canthus, upper and lower lid. All these studies showed promising result with similar minor complications as it is in our study.

CONCLUSION

Single stage median forehead rotational flap (SSMFRF) is an effective procedure for lid reconstruction secondary to different causes of defects in the area of upper and lower eyelids and medial canthus. This modification reduces the number of surgical stages, hence reducing economical and psychological burden of the patient and the surgeon. It is associated with fewer complications, which are easily manageable. It shows promising results with good cosmetic appearance.

REFERENCES

Role of Tube Manipulation in Preventing DCR Failure

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INTRODUCTION
Nasolacrimal duct obstruction is a fairly common ophthalmic problem.¹ The mainstay of treatment is Dacryocystorhinostomy (DCR) which works through by-passing the obstruction by making an anastomosis between the lacrimal sac and the nasal cavity.² The main problem with this procedure is its failure rate which usually averages around 10%.³ Failure may be caused by fibrosis and occlusion of the osteotomy,⁴ common canaliculcer obstruction⁵ and inappropriate size or placement of the bony ostium.⁶

In order to improve the success rate various surgical modifications and adjuncts are used. However the External DCR remains the gold standard¹² with the use of adjuncts like silicon intubation and /or anti fibrotic agents like Mitomycin C.¹³ After all the efforts, failure still ensues in a significant number of cases. After failure of DCR usually a second DCR is attempted. Unfortunately review DCR has lesser success rate¹⁴ and is never easy for the surgeon as the anatomical landmarks are altered due to the aftermath of previous surgery.

In this study we have tried a simple and easy technique of manipulating the silicon tube in a cheese wiring fashion to prevent failure in our post-operative patients, which presented with signs of imminent failure such as non-resolving epiphora, positive regurgitation test and a blocked lacrimal passage on syringing. This technique is reserved for cases of DCR with lacrimal intubation. Cases of DCR without intubation or those with MMC cannot be dealt with this technique.

Tube manipulation is an easy, simple and effective maneuver to prevent DCR failure. The surgical and economic burden of review DCR can be prevented in a large number of cases through this technique.

MATERIAL & METHODS
Patients were selected on non-probability purposive basis from Oculoplasty clinic, Isra Post Graduate Institute of Ophthalmology from January 2012 to December 2014. All the patients who showed signs of imminent failure such as epiphora, positive regurgitation test and a blocked passage on syringing...
after DCR with intubation were included. Patients with DCR failure due to canalicular problems, trauma or facial malformations were excluded.

Tube manipulation procedure was explained to every patient and informed consent was taken. In most of the patients the procedure was done under topical anesthesia using proparacaine drops. However in younger patients procedure was performed under general anesthesia.

In supine position, under adequate illumination the loop of the tube between the puncta was grasped with non-traumatic forceps. The free end of the tube in the nasal cavity was identified and grasped with similar forceps. The two forceps were lifted slightly upwards and the maneuver was performed in a cheese wire fashion. This maneuver broke the fibrous tissue and broadened the narrowing anastomosis. A few drops of blood either through the punctum or the nose identified the success which was later confirmed on syringing. Broad spectrum antibiotic drops were prescribed after the procedure. The procedure was repeated on every visit on monthly basis up to six months. The details and particulars were noted on the designated proforma.

RESULTS

28 patients were included in this study out of 416 cases operated during the study period showing an overall 93.26% success rate. All patients underwent external DCR. Age of the patients range from 05 years to 72 years (mean of 32.82 years). 09 (32.14%) patients were male while 19 (67.85%) were female (table 1). Failure was prevented in 22 (28.57%) patients out of which 17 (77.27%) were females and 05 (22.72%) were males. Tube manipulation failed to restore patency in 06 (21.47%) patients out of which 02 (33.33%) were females and 04 (66.66%) were males. As far as complications are concerned, apart from 08 (28.57%) failures, 05 (17.85%) patients had punctual lacerations. 03 (10.31%) patients had their lacrimal tube broken (table 2).

Table 1: Gender distribution

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Gender</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>09</td>
<td>32.14</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>19</td>
<td>67.85</td>
</tr>
</tbody>
</table>

Table 2: Complications

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Complication</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Punctal laceration</td>
<td>05</td>
<td>17.85</td>
</tr>
<tr>
<td>2</td>
<td>Tube damage</td>
<td>03</td>
<td>10.71</td>
</tr>
<tr>
<td>3</td>
<td>Failure</td>
<td>08</td>
<td>28.57</td>
</tr>
</tbody>
</table>

DISCUSSION

DCR is the least favored surgery in ophthalmology. The splash of blood and the crackling of the nasal bone usually does not suit the aesthetics of a sophisticated ophthalmic surgeon. Almost 10% failure rate makes it more discouraging. The common reasons of failure are scarring, fibrosis, common canalicular obstruction, inadequate or malpositioned osteotomy and Sump syndrome.

The success rate of review DCR is even lesser, reported around 85%. Historically surgeons have tried heroic procedure to cure of epiphora, such as subconjunctival resection of lacrimal gland ductules and denervation of the lacrimal gland, but these resulted in devastated results.

A few modifications are advisable to increase the success rate such as silicon intubation, use of MMC, double stenting with Ryle’s tube etc. Frequent mobilization of tube and repeated syringing have also been reported to decrease failure.

In this study we have tried a simple and easy technique of tube manipulation. This maneuver can easily be performed in the clinic under adequate illumination and topical anesthesia. However children and young adults do need an operating room due to GA requirement. The procedure usually took 2-3 minutes and was repeated on monthly visit up to 6 months.

The results are promising in terms of decreasing the need of a second surgery. There are not much studies to compare with, however the initial results are encouraging and we will like other surgeons to try this at their settings and report it accordingly. The procedure was limited to the cases of DCR with intubation only. The procedure depends upon the presence of the tube in its usual location. In cases done with MMC or those with a lost tube this procedure cannot be attempted.

A few complications were also noted. The common
Role of Tube Manipulation in Preventing DCR Failure

one was the punctual laceration due the stretch of the tube. The tube was also damaged in a few cases due to trauma with the forceps and exaggerated handling, so gentle handling is advised to avoid these complication. This procedure failed in few patients in whom a review DCR was performed eventually. Interestingly among the failures males were more common than females. All other results have shown a female preponderance in this study. Perhaps the strong nasal anatomy can be blamed for this problem in males.

CONCLUSION
Tube manipulation is an easy, simple and effective maneuver to prevent DCR failure. The surgical and economic burden of review DCR can be prevented in a large number of cases through this technique.

REFERENCES
Validity of Grey Scale Ultrasonography (US) in Diagnosis of Acute Appendicitis in Children

Sana Wasim FCPS,1 Misbah Durrani FCPS2
Fazal Hussain Shah MBBS3, Bilal Altaf FCPS4

ABSTRACT
Background: Acute appendicitis is one of the important causes of abdominal pain and discomfort in children. The diagnosis of acute appendicitis in children is a challenge due to improper history and examination. Grey Scale Ultrasound (US) may be useful adjunct for surgeons to diagnose appendicitis in children.

Materials & Methods: We included 73 children with clinical diagnosis of acute appendicitis. Grey scale ultrasonography was done in all patients. Histopathological diagnosis was considered as gold standard. The sensitivity, specificity, positive predictive value (PPV) and negative predictive values (NPV) were calculated for US. Data was analyzed by SPSS version 22.

Results: In our study the frequency of acute appendicitis on histopathology (gold standard) was recorded in 84% (n=62) while it is absent in 15% (n=11) patients. The US examination showed 98.33% sensitivity, 76.92% specificity, 95.16% PPV and 90.91% NPV for the diagnosis of acute appendicitis in children.

Conclusion: The grey scale US is very useful investigation for the diagnosis of acute appendicitis in children in spite of sophisticated investigations like computed tomography (CT) and laprosopy, thus decreasing the cost and improving the outcome.

Keywords: appendectomy, Ultrasonography, Acute Appendicitis, Accuracy, Diagnosis.

INTRODUCTION
Acute appendicitis is very common non traumatic surgical emergency in children.1 However misdiagnosis or delay in diagnosing acute appendicitis can result in significant complications like perforation particularly in young children. To prevent high morbidity and mortality associated with this delay in diagnosis, most of the surgical authorities have advocated timely surgical intervention (early appendicectomy) however negative appendicectomy rate of 15-40% has been reported in literature which is associated with significant morbidity.2

Histopathology of appendix after surgery is considered as a gold standard in diagnosing acute appendicitis. However before surgery mostly acute appendicitis is diagnosed clinically on the basis of symptoms and physical findings and clinical evaluation alone. The clinical examination shows the highest negative appendectomy rate i.e. 12.2%.3 Because diagnostic delays arise chiefly from the interpretation of the history and physical examination results, diagnostic imaging has become an essential tool in the evaluation of children suspected of having appendicitis. Among various imaging modalities like CT scan US and magnetic resonance imaging (MRI), US is simple, easily available, noninvasive, convenient and cost effective with an overall accuracy of 75-90% in the diagnosis of acute appendicitis.4 Many institutions are now using US before CT scan to try to diagnose conditions such as appendicitis without exposing children to ionizing radiation. By validating US as safe and reliable method in diagnosing acute appendicitis in children, we can reduce significant number of negative appendectomies being done on the basis of clinical evaluation alone.

The grey scale Ultra-sonography (US) in diagnosis of acute appendicitis in children is safe, accurate and a cost effective method, which needs further studies to determine its true potential.

METHODS & MATERIALS
It was a cross sectional study. Total of 73 patients were analyzed after meeting the inclusion and exclusion criteria by non-probability consecutive sampling. The
Validity of Grey Scale Ultrasonography (US)

A study was conducted at the Department of General Surgery and department of Medical Imaging Holy Family Hospital Rawalpindi, in collaboration with Pathology Department of the same hospital. Duration of study was 6 months i.e. from June to 30th May 2014. All patients were examined clinically and appropriate laboratory investigations were carried out. All patients were subjected to Grey Scale Ultrasonography using real time apparatus of NEMIO 20 with a 3.75 MHz curvilinear probe and also 7.5 MHz linear probe. All the sonographic assessments were performed by a single person who had experience of US for 2 years. The sonographic findings were recorded. The surgery was carried out and histopathological findings were recorded.

**Inclusion Criteria:**
- Children with age ranging from 1-15 years
- Both male and female patients were included
- Patients with history of pain right iliac fossa, fever and leukocytosis

**Exclusion Criteria:**
- Previous history of abdominal surgery
- History of chronic infections like tuberculosis
- Appendicular mass found during clinical or sonographic examination
- Neoplastic conditions of the appendix

Patients were labeled as having acute appendicitis if following sonographic signs were present:
- Diameter > 6mm
- Lack of compressibility of appendix
- Appendicolith might or might not be present

Histopathology as gold standard.

**RESULTS**

In this study, a total of 73 patients were recruited after fulfilling the inclusion/exclusion criteria to determine the validity of grey scale ultrasonography in diagnosis of acute appendicitis in children keeping histopathology as gold standard. Mean age was 12.65±3.45 years (mean ± SD). Age distribution is shown in Table I. Maximum number of patients were from the group 11-15 years (68.4%, n=50), while there were no patients in the age groups of <5 years. Gender distribution of the patients is shown in Table II, which shows slight male dominance (males vs. females, 56.16% vs. 43.8%). The categorization of weight showed that 58% (n=43) patients were from group 11-20 kg (Table III).

The various sonographic parameters assessed were diameter, compressibility and status of fecolith in appendix. The 71% patients had diameter of <10 mm on ultrasonography (Table IV). 23% (n=17) patients showed compressibility while 76.71% (n=56) showed no compressibility. The fecolith was present in 42% (n=31) while it was absent in 57% (n=42).

The frequency of appendicitis on histopathology (gold standard) was recorded present in 87.67% (n=64) while absent in 12.32% (n=9). The frequency of appendicitis on grey scale ultrasonography was recorded; present in 76.71% (n=56) while absent in 23.28% (n=17). The grey scale US was found 79.68% sensitive, 55.55% specific with 91.07% and 23.52% PPV and NPV (Table V).

<table>
<thead>
<tr>
<th>Age (in years)</th>
<th>No. of patients</th>
<th>%</th>
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<tbody>
<tr>
<td>1-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-10</td>
<td>23</td>
<td>31.5</td>
</tr>
<tr>
<td>11-15</td>
<td>50</td>
<td>68.4</td>
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<tr>
<td>Total</td>
<td>73</td>
<td>100</td>
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<table>
<thead>
<tr>
<th>Gender</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>41</td>
<td>56.16</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>43.8</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight (in kg)</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11-20</td>
<td>43</td>
<td>58</td>
</tr>
<tr>
<td>21-30</td>
<td>20</td>
<td>27</td>
</tr>
<tr>
<td>31-40</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>100</td>
</tr>
</tbody>
</table>
Validity of Grey Scale Ultrasonography (US)

### Table 4: Diameter of appendix (n=73)

<table>
<thead>
<tr>
<th>Diameter of appendix (in mm)</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>7-10</td>
<td>29</td>
<td>39</td>
</tr>
<tr>
<td>11-15</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>16-20</td>
<td>03</td>
<td>05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>73</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

### Table 5: Sensitivity, specificity, PPV, NPV

<table>
<thead>
<tr>
<th>Results of Ultrasound</th>
<th>Histopathology</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td>US Positive</td>
<td>True positive(a)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>False positive (b)</td>
<td>5</td>
</tr>
<tr>
<td>US Negative</td>
<td>False negative(c)</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>True negative (d)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>a + c 64</strong></td>
<td><strong>b + d 9</strong></td>
</tr>
<tr>
<td></td>
<td><strong>n 73(100)</strong></td>
<td></td>
</tr>
</tbody>
</table>

Sensitivity = \(a / (a + c) \times 100 = 79.68\%\)
Specificity = \(d / (d + b) \times 100 = 55.55\%\)
Positive predictive value = \(a / (a + b) \times 100 = 91.07\%\)
Negative predictive value = \(d / (d + c) \times 100 = 23.52\%\)

**DISCUSSION**

Acute appendicitis is one the most common and challenging diagnosis in surgical practice. It’s well known that the most important discriminative and diagnostic tools for acute appendicitis are detailed history taking and physical examination performed by an experienced surgeon. In children the history and physical examination is even more cumbersome, so making the diagnosis of acute appendicitis even more difficult and challenging so that the experienced surgeons may land upon normal appendix or perforated one during surgery.5

The lab investigations like C-reactive protein assay, plain abdominal film and various scoring systems are non-specific and cannot be used as the definitive diagnostic tests as negative appendectomy rates are quite high.5 US when added to clinical examination and labs reduce, the negative appendectomy rate and complications. The complication rates are more in first 48 hours of presentation.6,7 the use of CT scan with rectal contrast has negative appendectomy rate of approximately 23% but the exposure of radiation is considerable.8,9 CT scan shows sensitivity of up to 96% and specificity of up to 97% in acute appendicitis in children.1

Chang, Y. J., et al. conducted study on children <3 years and found that the overall sensitivity, specificity, accuracy, PPV, and NPV of abdominal US in acute appendicitis 95.0%, 90.3%, 92.9%, 92.6%, and 93.3%, respectively.10 Similar results were shown in another study too with only difference of low sensitivity(83.3%).11 In our study, we recorded 79.68% sensitivity, 55.55% specificity, 91.07% PPV and 23.52% NPV. We may infer that this difference may have arisen due to the age group selection but study results by Shirazi, A. S., et al.7 on adult population (92.7% sensitivity, 94.5% specificity, 93% accuracy, 94.4% PPV and 92.5% NPV) can be compared to the research work of Chang, Y. J., et al.10 The revised criteria for diagnosis of appendicitis improves outcome. The criteria can be set at appendiceal diameter >7mm and wall thickness 1.7mm. This criterion can give the highest sensitivity (98.7%) and specificity (95.4%).9 However Hussain, S., et al.12 showed that >6mm diameter under compressibility is most accurate with high PPV (94%). Kim, S. H., et al. advocated that inflamed periappendicular fat is reliable diagnostic indicator when the diameter and physical examination is equivocal.13

Overall, our study showed that US is an accurate modality in diagnosing acute appendicitis. However, there are pitfalls in the use of US and these are due to 5 false-positive and 13 false-negative case. 3 of the false positive patients had non-specific US findings of intra-abdominal inflammation but no definite evidence of appendicitis. Above mentioned pitfalls of US are evident in many studies.14,15 However, a perforated appendicitis could not be excluded. At surgery, 4 patients had terminal ileitis and the other had serosal inflammation. The diagnosis of ruptured appendicitis on US is difficult because a ruptured appendix decompresses and is no longer visualized. The body mass index (BMI) has mixed impact on the accuracy of US for acute appendicitis. In one study16 the BMI decreases the accuracy while in other study it revealed that obesity has no effect on visualizing the inflamed appendix.17 We selected US as the main diagnostic modality due to its low cost and availability, but it is operator dependent so we reduced this effect modifier by specifying single sinologist for this study. To increase the accuracy of US improving expertise is required.

**CONCLUSION**

The grey scale US in diagnosis of acute appendicitis in children is safe, accurate and cost effective method. Further studies on larger scale and expertise are needed
to determine true potential of US.

REFERENCES


Patient with the edema of the face, coarse skin, and thin hair with bradycardia and hypothermia

D.D. Cushing syndrome, Generalized lipodystrophy, Hypothyroidism, Primary systemic amyloidosis, Superior vena cava syndrome

Diagnosis: Severe hypothyroidism. The patient recovered following repletion of thyroid hormone. (.........on line)
Achieving Ammetropia in Patients with Cataract & Astigmatisme

Sabihuddin FCPS, FRCS¹, Khalid Shoaib FCPS, FRCS², Ayeza MD³

ABSTRACT

Objectives: To assess and document the refractive correction of astigmatism in cases of cataract with astigmatism after Toric IOL implantation.

Study Design: Interventional study.

Place & Duration: Department of Ophthalmology CMH Rawalpindi.

Patients & Methods: Our study included 40 eyes of 23 patients, who had cataract with corneal astigmatism ranging from 1.5 to 6.0 diopters. Visual acuities, IOP, keratometric readings, documentation of steep meridian, pachymetry and corneal topography was done to rule out progressive keratoconus and other corneal ectatic conditions. Phaco-emulsification was done by a clear corneal incision and a Toric IOL was implanted using the Acrysof Toric IOL Calculator. This study group was followed up for 06 months.

Results: Post operative astigmatism was assessed after 1st week, 1st month and after 06 months. After the surgery, visual acuities improved significantly in all patients. Astigmatism was definitely reduced in all the patients. The amount of astigmatism which was observed at the end of 06 months was negligible and almost unnoticeable by the patients.

Conclusion: Our study shows that Toric IOL Implants help to achieve good vision and reduced dependency on spectacles in about 75% of cases. The Toric IOL implants showed good rotational stability. If IOL rotation occurs within the first week, it can be re-positioned and give the due results in a refractive disorder. Although it is seldom required if placed correctly in the first instance.

Key Words: Intra-ocular Lens (IOL), Toric, Keratometry, Corneal Topography and Phaco-emulsification.

INTRODUCTION

Phaco-emulsification is the modern method of surgery in vogue to treat cataract. It is a very precise and accurate method to remove the cataract. The resulting refractive deficit is corrected quite effectively with the help of a foldable aspheric IOL implant done through a minimal limbal incision of 2.75mm.

It was found over the years that a few patients, who had a gross pre operative corneal astigmatism, were not fully corrected due to the residual astigmatic element.¹ In quest to improve the visual outcome of such astigmatic patients a premium IOL was developed in 1998 which had the cylindrical correction built into the spherical power of the IOL. This prototype went through a lot of evolution over the years and was reintroduced in a refined and polished form in 2005. Since then we have a premium Toric IOL available, which corrects the spherical and the cylindrical aberrations presented to us in an aphakic eye with gross astigmatic defect.²³

The objective of the study was to determine the efficacy in correction of astigmatism with Toric IOL implants in patients having cataract and astigmatism. It was also helpful to ascertain the level of patient satisfaction and comfort using this method of refractive correction in patients undergoing cataract surgery and having astigmatism.

Toric IOL implants achieve good vision and reduced dependency on spectacles in 75% of cases. These Implants also show good rotational stability, if maneuvered and repositioned within the first week. It gives desired results in terms of refractive disorder, though it is seldom required if placed correctly in the first instance.

MATERIAL & METHODS

This study was conducted at Eye Department, CMH Rawalpindi from March 2011 to March 2015. A total of 40 eyes of 23 patients were included in the study over a period of 4 years who had reported to eye outpatient, CMH Rawalpindi. An informed consent was taken from all the patients included in the study. Patients were selected who had an astigmatism ranging from -1D Cyl to -6D Cyl. All patients had regular astigmatism either with the rule or against the rule. Patients with keratoconus, post keratoplasty, pseudo-exfoliative syndrome, retinitis pigmentosa or any other condition predisposing to weak zonular ligaments,
were excluded from the study. A detailed record of visual acuity, intraocular pressure, corneal topography, keratometric readings, fundus examination and

The patients were made to sit upright in front of the surgeon at the same height to bring their eyes at the same level. An eye speculum was placed in the patients eye after using topical anaesthesia. A special marker prepared with tissue marking ink was placed at the limbus in order to mark the 0°, 180° and 90° on the patient. The markings are made on the patient’s eye in an upright position, to cater for the cyclo-rotation of the eye which does occur in the lying position, and making the markings off centre.

Once the eye has been marked with these reference marks, the eye is marked for the axis of lens placement after fixing the axis on these marks. Once the axis has been marked, the surgery proceeds in the normal routine. All the cases were operated by the same surgeon, using 2.75mm limbal incision proceeding with phaco-emulsification, using the Alcon Surgical Laureatte Phaco-emulsification System. Any patient who developed a complication during surgery was not included in this study.

After the cataract has been removed, the capsular bag is filled with visco-elastic and the lens is inserted through the specific injector. It is easier if the lens is placed about 15-20° short of the exact axis. Once in the bag, the lens is rotated to be aligned with the limbal markings. The visco-elastic was removed and caution was exercised not to rotate the lens too vigorously, so as to keep it, in the desired axis. Once we are sure that the lens axis is correctly aligned, the limbal wound is sealed by hydration. The patients were put on 0.5% Moxifloxacin eye drops four hourly and 1% Prednisolone eye drops, four hourly. All patients were reviewed the next day, after one week, after one month and at six months, post operatively.

RESULTS

In our study, pre-operative Kerato-metric Astigmatism was 2.4 6D to 6.0D. The mean post-operative Astigmatism was 0.8D-1.0D. After 6 months follow up 75% patients had a residual Astigmatism of 0.5D, & an un-corrected Visual Acuity of 20/30 or better. Mean IOL Axis rotation was less than 10°, in 90% of the cases.

DISCUSSION

Cataract surgery results in aphakia, which is a gross hyper-metric error. This refractive error may or may not be associated with a cylindrical refractive defect, due to corneal astigmatism.6 If it is present it has to be corrected along with the gross hypermetropia2 caused by aphakia. If the cylindrical error is not corrected with surgery, then corrective glasses have to be prescribed to overcome the residual refractive error. In modern times the patients have become very demanding and expect
Achieving Ammetropia in Patients with Cataract & Astigmatism

In view of the overwhelming demands of the patients, premium Toric IOLs have been developed & refined over the years, to give the best refractive correction, post-operatively in such cases.

The initial pitfalls of exact placement of lens axis, have been minimized with the help of better and improved operative microscopes, with excellent resolution. The major problem of IOL rotation in the bag, nullifying the effect of toricity have been addressed by better IOL designs and materials, which have better capsular adhesiveness, ensuring minimal in the bag rotation of the IOL. Hence, keeping the IOL in the desired position and axis post-operatively.

Over the years it was found that the axis of lens placement, if marked in the lying or supine position,

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<table>
<thead>
<tr>
<th>Lens Recommendation</th>
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</thead>
<tbody>
<tr>
<td>Surgeon &amp; Patient Information</td>
</tr>
<tr>
<td>Surgeon name</td>
</tr>
<tr>
<td>Patient name</td>
</tr>
<tr>
<td>Additional patient information (I.D., Case, etc.)</td>
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<tr>
<td>Lens details</td>
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<tr>
<td>AcrySof® IQ Toric IOL</td>
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<tr>
<td>IOL spherical equivalent (SE)</td>
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<tr>
<td>Axis of placement</td>
</tr>
<tr>
<td>Cylinder power (IOL plane)</td>
</tr>
<tr>
<td>Cylinder power (Corneal plane)</td>
</tr>
<tr>
<td>Calculation details</td>
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<tr>
<td>Pre-op corneal astigmatism:</td>
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<tr>
<td>Surgically induced astigmatism:</td>
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<tr>
<td>Crossed-cylinder result (corneal plane):</td>
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<tr>
<td>Anticipated residual astigmatism:</td>
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### Pre-Op Information

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<tbody>
<tr>
<td>Flat K</td>
</tr>
<tr>
<td>@ Flat Axis</td>
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<tr>
<td>Steep K</td>
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<tr>
<td>@ Steep Axis</td>
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<tr>
<td>IOL Spherical Power (P-IOL)</td>
</tr>
<tr>
<td>Surgically Induced Astigmatism (SIA)</td>
</tr>
<tr>
<td>Incision Location (IL)</td>
</tr>
</tbody>
</table>

### Notes:

A full correction of their refractive errors with surgery alone and want to be spectacle independent as much as possible.

---
as on the operating table, gave rise to cyclo-rotation of the eyeball, thus giving, error to the exact axis of the IOL. Hence the markings were done in the upright position, to avoid the cyclo-rotation, resulting in exact lens placement, giving better results. In our study, we observed a definite correction of Astigmatism, as shown by the post-operative results of refraction.

CONCLUSION

Our study shows that Toric IOL Implants help to achieve good vision and reduced dependency on spectacles in about 75% of cases. The Toric IOL Implants showed good rotational stability. If IOL rotation occurs within the first week, it can be re-positioned and give the due results in a refractive disorder. Although it is seldom required if placed correctly in the first instance.

REFERENCES


INTRODUCTION

Vermiform appendix is a blind ended tube connected to the cecum 2 cm below the ileo-cecal junction. It is about 6-9 cm long and has a short mesentery, the meso-appendix. The position of the appendix is extremely variable. It can be retrocecal (62%), pelvic (34%), pre-ileal (1%), post-ileal (0.5%).

Acute inflammation of the vermiform appendix is called acute appendicitis. Appendectomy is the most commonly performed procedure in surgical emergency departments throughout the world. The overall incidence of acute appendicitis is said to be around 14 percent. The diagnosis of acute appendicitis is largely clinical based on history, physical examination and complemented by laboratory findings. Acute appendicitis needs prompt diagnosis and treatment to minimize the associated morbidity and complications.

Several scoring systems have been devised to aid decision making in doubtful cases, including the Ohmann, Alvarado, Eskelinen, Raja Isteri Pengiran Anak Saleha Appendicitis (RIPASA) and several others. Among the many, the Alvarado and the modified Alvarado score are the most commonly used. However, a delay in detecting acute appendicitis may lead to a sequence of events like perforation, appendicular mass formation, appendicular abscess and local and generalized peritonitis. Acute appendicitis used to be called as the disease of developed countries with an association of high protein intake, but the is also increasing in developed countries.

Fecolith associated with acute appendicitis in adults, is an incidental finding. There was no correlation between a gangrenous/perforated appendix and the presence of a fecolith.
and magnetic resonance imaging techniques. In case of preoperatively demonstrated intra-luminal fecolith through ultrasonographic examination with clinical symptoms of acute appendicitis, early appendectomy must be performed in our opinion. The relationship between fecolith and perforated appendicitis varies from study to study, open appendectomy is still a common practice. Laparoscopic surgery introduction is a great advancement in the field of surgery. It was this conflict of data that persuaded us to carry out this study.

MATERIALS & METHODS
This was a prospective observational study of 6 months duration, carried out from Jun 2014 to Dec 2014 in the department of General Surgery, Hayatabad Medical Complex, Peshawar. A total of 150 patients were selected. Patients were diagnosed using the Alvarado score and only those patients who were >12 years of age and <60 years of age and who had a score of more than or equal to 6 were operated and those patients who had a perforated appendix either preoperatively or diagnosed on the operating table were included in the study. The exclusion criteria for this study were patients with ASA (American Society of Anesthesia) more than 2, mentally retarded, any chronic illness disease, immune-suppression condition and those who were not willing for the surgery; these were excluded from the study population.

Approval was taken from the hospital ethical committee. All patients meeting the inclusion and exclusion criteria who were undergoing emergency appendectomy were included in the study and were admitted through emergency department. Demographic characteristics like name, age, sex, address and phone numbers of all patients were recorded. Complete history was taken and complete general physical and systemic examination was done. All patients were preoperatively prepared by doing mandatory investigations FBC, serum urea, serum creatinine, x-ray chest, RBS and viral status. Erect Abdominal X-ray films were also taken to get an aid in diagnosing the perforation. All the test and examinations were keenly observed and final decision was made. All the patients were resuscitated by passing intravenous cannula and were given intravenous antibiotics, fluid and electrolyte imbalances corrected. After taking informed consent the patients were subjected to appendectomy. All data analyses were performed using the SPSS program (version 11.5).

RESULTS
A total of 150 patients had an Alvarado score of more than 6 and were operated, 13 (8.6%) patients were diagnosed with perforated appendicitis preoperatively. Out of the operated, 27 (18%) patients had a perforated appendix and were included in this study, making a total of 40 (26.67%) perforated appendicitis. Among the total 150 cases, 87 (58%) were males and 63 (42%) were females. In the perforated group, 36 (90%) were males and 4 (10%) were females (Table 1). Out of the total 150 patients, 20 (13.34%) patients had fecolith in their appendix. In the perforated group, only 7 (17.5%) patients had fecolith, out of which 6 (15%) were males and only one (2.5%) female (Table 2).

DISCUSSION
Acute appendicitis is one of the most common surgical abdominal emergencies. Early diagnosis and treatment could reduce the mortality and morbidity of acute appendicitis significantly. In our study, out of 150 patients, only 20 (13.34%) patients had developed appendicitis secondary to fecolith obstruction. Out of these 7 (17.5%) patients went on to develop perforation. These results are similar to a study by Ramdass MJ that showed a frequency of 13.7% for fecolith appendicitis.

In a study by Singh JP, the percentage of appendicitis secondary to fecolith came out to be 18.2%. The male and female cases in our study were 58 and 42% respectively. In study by Ramdass MJ, the percentage was 50.5 and 49.5 % for males and females patients respectively. Ramdass MJ showed a percentage of 10.2% for fecolith appendicitis that developed perforation. In our study, it came out to be 17.5%. This is somewhat higher and the reason for this may be the late presentation of patients in our set up due to decreased awareness regarding one’s health. The study be Singh JP et al showed that, fecolith prevalence was 27.5% in perforated appendicitis and 12.0% in non-perforated appendicitis.

However the figures shown by Alaedeen DI et al shows somewhat higher figures. In that study 57% of patients with perforated appendix showed fecolith. A probable explanation to this can be that his study was...
carried out in a pediatric age group where the diagnosis of acute appendicitis is still a dilemma. This is the reason that in pediatric age group, patients usually present with complicated acute appendicitis. The presence of fecolith is associated with earlier and higher rates of appendiceal perforation in pediatric patients with acute appendicitis. An expedient appendectomy should therefore be performed in the pediatric patient with a radiologic evidence of fecolith.11

CONCLUSION

Our data confirm that fecolith is associated with acute appendicitis in adults. However, there was no correlation between a gangrenous/perforated appendix and the presence of a fecolith. The presence of a fecolith is an incidental finding and will not always lead to a perforated appendicitis. However, further research on the topic is recommended.

REFERENCES

INTRODUCTION

Renal stone disease is common, with a worldwide prevalence. Numerous risk factors responsible for or contributing to stone formation include environmental, metabolic, dietary, racial, sex, obstructive uropathy and urinary tract infection. Urinary tract infection is most important and one of the most common causes of urolithiasis especially in females. Urinary stones are hard masses developed from organic materials and inorganic crystals (mainly of calcium, phosphate, magnesium salts, oxalate, and/or uric acid) that separate from the urine and build up on the ureter and/or on the inner surface of kidney. Its size varies from that of the sand to the golf ball.

Urinary stones are formed when there is high concentration level of certain substances, especially calcium, oxalate, cystine, uric acid in urine, lack of citrate in the urine, or insufficient water in the kidneys to dissolve waste products. Urine normally contains chemicals-citrate, magnesium and pyrophosphate that prevent formation of crystals. Crystals of urinary stones may also be formed if the urine becomes too concentrated, too acidic or too alkaline. Most urinary stones are formed due to dietary factors such as the high intake of salts or dairy products that increases the amount of calcium in the urine. Low intake of water would increase the percentage of stones in the urine. Genetic effects and intake of vitamin C may also play a role in forming stones. Urinary stones may contain various combinations of chemicals. The most common type of stones is comprised of calcium in combination with either oxalate or phosphate. Struvite stone is less common type that is caused by infection in the urinary tract. Uric acid stone, however is much less common than struvite stone. Cystine is a rare stone. Urinary stones have become increasingly common in most parts of the world.

Epidemiological data in Dera Ismail Khan region lack any information about urinary stone disease. The increasing frequency of stones in D.I. Khan region, with different epidemiological factors and diseases,

Chemical Composition of Urinary Stones in Patients from Dera Ismail Khan Region, KPK

Zafar Ahmad Khan FCPS (Urology)¹, Musharraf Ali Khan FCPS (Urology)²

ABSTRACT

Objective: To document the chemical composition of urinary calculi at our center from Dera Ismail Khan Region.

Study Design: Descriptive study.

Place & Duration: Pakistan Institute of Medical Sciences, Islamabad. 01 year duration from Feb. 2012 to Jan, 2013.

Methods: The study included 100 patients, which have undergone endoscopic and open surgery or received extracorporeal shock wave lithotripsy (ESWL) for urinary calculi. All patients were screened for urinary tract infection by urine routine examination, urine culture and ultrasonography. Stones/fragments or gravel retrieved were sent for chemical analysis.

Results: In the chemical analysis, Calcium (93%) was the most commonly observed major component. Out of these, 63% were calcium oxalate oxalate. 30% were mixed stones. While 6% were pure uric acid stones. Only one contained cystine mixed with uric acid.

Conclusion: Calcium containing mixed stones remains the commonest type of stone observed in our study.

Key words: Urinary Calculi, stone chemical composition, Urinary tract infection.

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and different effects depend on water quality and high amount intake of protein from green leaf plants, eggs, milk red and white meats etc. All of these reasons promoted us to carry out chemical analysis of urinary stones. This study demonstrates the role of chemistry (type and concentration of elements) in our stones and therefore the reasons for formation of urinary stones in the patients from D.I. Khan region.

MATERIALS & METHODS

Urinary tract stones are fairly common worldwide. They develop more commonly in the kidneys and ureters than the bladder. The clinical presentation varies. They may be asymptomatic or they may present with loin to groin pain with or without hematuria. Obstructive uropathy and renal failure may occur. There are various methods of analysis such as infrared spectroscopy, X-ray diffractometry and solid state nuclear magnetic resonance spectroscopy. These have the advantages of determining the structures of the stones. In addition to crystalline inorganic material, stones also contain some organic material called matrix which contributes up to about 2.5% by weight of the stone. Simple qualitative chemical methods were used here to determine the presence of any inorganic minerals.

The study included 100 patients undergoing surgery or receiving ESWL for urinary tract calculi from Feb,2012 to Jan,2013. Stones/fragment or gravel retrieved were sent to the Pathology laboratory were analyzed for Calcium (Ca), Magnesium (Mg), Oxalate (Ox), Phosphate (PO4), Bicarbonate (HCO3), Urate (UA) and Cystine (Cys). The site of origin of the stones in the urinary tract was not included as in most cases the data were not available. The stones varied in size. Results were reviewed and analyzed with the help of SPSS 10.0.

RESULTS

A total of 100 males (73) and females (27) stones were obtained shown in graph 1. Table 1 shows the composition of all stones. Calcium elements have the highest concentration, where the content of calcium as oxide ranges between 25% and 91% with an average value of 74.7%. Calcium is considered as the main constituent of the stones of all different types. There were 5 (5%) stones that contained both calcium and magnesium with other anions. These showed a distribution with 3 (60%) males and 2 (40%) females. Pure uric acid stones were present in 6 (6%) patients which were 4 (66.6%) males and 2 (33.3%) females. One stone from female contained cystine and uric acid. Table II shows chemical composition of stones with regard to major and minor components.

DISCUSSION

Calcium was the main constituent. This was found in 91 (91%) of our patients. There were 63 (63.0%) stones which contained calcium oxalate. This was generally lower than those reported by Balasi and Westenberg 13 and Daudon.14 There were 21 (21%) pure calcium oxalate stones. This figure is lower than that quoted by Older.15

The causes of calcium oxalate stones are idiopathic hypercalciuria, hypercalciuric conditions, low urinary citrate, hyperoxaluria and hyperuricosuria. About 30–60% of these patients with calcium oxalate stones...
have idiopathic hyper-calciuria. There may also be a molecular abnormality where there may be mutations in the genes affecting the transport of chloride, oxalate and uric acid in the tubules of the kidney.¹⁶,¹⁷

Hypercalcaemic conditions causing hypercalciuria include primary hyperparathyroidism, granulomatous disease, hyperthyroidism, phaeochromocytoma, vitamin D intoxication and thiazide diuretic therapy.¹⁷ There were 5(5%) calcium phosphate stones. This figure is almost equal to those reported by Balasi¹², Westenberg¹³ and Coe.¹⁸ These stones tend to occur in renal tubular acidification defects.

Uric acid was present in 32 (32.0%) stones. There were 6 (6%) pure uric acid stones, a figure lower than those reported by Balasi (15%)¹², Westenberg¹³ and Older.¹⁵ These tend to occur in renal tubular acidification defects.

Acidic conditions, resulting in the formation of cystine crystals which have a characteristic hexagonal shape. These crystals are present in about 25–50% of patients with cystinuria.¹⁷

Urinary tract stones are a fairly common condition. The male to female ratio is about 3:1 except for those containing magnesium where the ratio is about 1:1. They may be asymptomatic and discovered incidentally or they may present with excruciating lumbar pain. The chemical method of analysis of stones is insensitive and should be replaced by a better method such as X-ray crystallography where both the structure and chemical composition can be ascertained.

**REFERENCES**

A 35 years old man presented with a 10 day history of a cutaneous lesion on the left anterior chest. Examination revealed an annular, scaly, blistering, violaceous plaque, 5 cm in diameter, with an erythematous periphery. The lesion had appeared 24 hours after the patient began a self-prescribed course of oral trimethoprim–sulfamethoxazole for a respiratory tract infection. Fixed drug eruptions are common, immune-mediated, cutaneous lesions that are typically of acute onset and appear as annular, edematous, sometimes blistering, reddish-brown to violaceous macules or plaques. Their diagnostic hallmarks include residual hyperpigmentation after healing. This patient received a prescription for a 3-week course of topical glucocorticoids and was advised to avoid sulfonamides in the future.

Isabel Cristina M.D.
Centro Medico ABC, Mexico

5 years old girl came for examination with an orbital mass in one eye. Initially, a conservative treatment was suggested to debulk the lesion in order to preserve as much soft tissue as possible and to stimulate bone growth in a young child. However, 3 years later she returns with a new bony lesion involving the eye ball, but with a different morphology. A standard Enucleation was performed and the child achieved a good cosmetic outcome. This was the first case of a Recurrent Grade 3 Choristoma of the Anterior Segment. Jeremy Tan, MD (China) ...................(on line).
Frequency & the Risk Factors of Diabetic Foot

Arshad Amin FCPS¹, Mian Tauseef Uddin FCPS², Zafar Iqbal FCPS³
Mohammad Kashif FCPS⁴, Zeeshan Saboor Ahmed MBBS⁵, Gulsharif FCPS⁶

ABSTRACT

Objectives: To determine the frequency of diabetic foot in diabetes mellitus and to assess the risk factors for diabetic foot.

Materials & Methods: This was an analytic study conducted at Bacha Khan Medical Complex, Shahmansoor Swabi from January 2008 to December 2014. A total of 100 cases of diabetes mellitus with surgical complications were included in the study. Incision and exclusion criteria were set in this study. Data included was age, sex, duration of diabetes mellitus (DM), type of Diabetes, type of surgical complication, status of glycemic control, type of therapy, socioeconomic status of patient and its surgical complications in diabetic patients. Relevant risk factors were noted in these patients. The data were entered into a predesigned proforma and was analyzed through SPSS program version 10.

Results: A total of 100 patients of diabetic complications were admitted through outpatient department. Mean age was 51.2 years. Male to female ratio was 3:2. Mean duration of disease was 7.28 years. 72% patients had type II diabetes mellitus. In our study diabetic foot was recorded in 30 (30%) patients. Among these patients neuropathy was noted in 16 (54%) patients, vasculopathy in 14 (45%), vision problems in 06 (20%) patients, vasculopathy in 14 (45%), vision problems in 06 (20%), ill-fitting shoes in 12 (40%), edema feet in 05 (16%), discoloration of feet in 10 (33%), foot deformity in 06 (20%), history of trauma in 15 (50%), previous history of foot ulcer in 7 (23%), education about foot care in diabetic patients in 10 out 100 male patients and education about foot care in diabetic foot patients in 04 (13%) out of 30 female patients.

Conclusions: Diabetic foot is a common complication of diabetes mellitus. It is common in middle age, male gender and in type II diabetic patients. Common risk factors for diabetic foot are neuropathy, vasculopathy, trauma, ill-fitting shoes, discoloration of feet, foot deformity, vision problems and edema feet.

Key Words: Diabetes Mellitus, Diabetic Foot, Risk factors.

INTRODUCTION

Diabetic Foot is a known complication of diabetes mellitus resulting in permanent disability, prolonged hospitalization and poor quality of life. Although diabetic patients present to surgeon because of various problems but foot complications are the most common presentation. About 5-15% of diabetic foot patients present with osteomyelitis Grade-III (Wagner grading system for diabetic foot at some stage of their disease and accounts for more than 50% of the non-traumatic lower limb amputations.¹) Individuals who develop foot ulcers have a decided health-decrease in their quality of life and consume a great deal of health care resources. The objective of this study is to identify the risk factors responsible for the development of diabetic foot which will help to lay down important principles of prevention and management of diabetic foot. Wagner grading system for diabetic foot contain six grades, starting from zero to five.¹²

0 - Intact skin
1 - Superficial ulcer of skin or subcutaneous tissue
2 - Ulcers extend into tendon, bone, or capsule
3 - Deep ulcer with osteomyelitis, or abscess
4 - Gangrene of toes or forefoot
5 - Midfoot or hindfoot gangrene

Diabetic foot is common in middle age, male gender and in type II diabetic patients. Common risk factors for diabetic foot are neuropathy, vasculopathy, trauma, ill-fitting shoes, discoloration of feet, foot deformity, visual problems with edema feet. Individual teaching and counseling is an effective method to decrease the incidence of diabetic foot and its consequences which will indirectly lessen the economic burden on families, communities and the countries at large.
MATERIALS & METHODS
This was an analytic study conducted at surgical department of Bacha Khan Medical Complex, Swabi from January 2007 to December 20014 in collaboration with medical and orthopedic units of the same hospital. A total of 100 cases of diabetes mellitus with surgical complications were enrolled in the study. Each patient was examined in detail after taking informed consent and thoroughly investigated. Patients below 14 years of age, patients having medical complications of diabetes mellitus and patients having already done limb amputation due to diabetes mellitus were excluded from the study. Data included was age, sex, duration of diabetes mellitus (DM), type of DM, type of surgical complication of DM, status of glycemic control, type of therapy, socioeconomic status of patient and education about DM and its surgical complications in diabetic patients. Relevant risk factors for diabetic foot neuropathy, pain, touch, temperature, vibration vasculopathy [altered distal pulses], vision problems, ill-fitting shoes, edema feet, discoloration of feet, foot deformity, history of trauma, previous history of foot ulcer and education about foot care in diabetic foot patients were noted in predesigned proforma. The data was analyzed through SPSS program version 10.

RESULTS
Out of 100 cases there were 60[60%] males and 40[40%] females with ratio of 3:2. The age of patients ranged from 21-80 years. Mean age was 51.22 ± 11.33 years. Majority of patients were in age range of 51 to 60 years [36%]. 72 (72%) patients were having type II diabetes mellitus while the remaining 28 (28%) were having type I diabetes mellitus. Minimum duration of disease was 01 year and maximum duration was 20 years with a mean duration of 7.28 ± 3.85 years. Socio-economic majority of the patients 60 (60%) belonged to poor class of the society while remaining 40% belonged to middle class of the society. Status of glycemic control was poor in 80 (80%), good in 18 (18%) and excellent in 02 (02%) cases. Patients using oral hypoglycemic drugs (OHGD) were 70 (70%), using insulin were 22 (22%) and using both OHGD and insulin were 08 (08%).

In our study diabetic foot was recorded in 30 (30%) patients. Among these patients neuropathy was noted in 16 (54%) patients, vasculopathy in 14 (45%), vision problems in 06 (20%), ill-fitting shoes in 12 (40%), edema feet in 05 (16%), discoloration of feet in 10 (33%), foot deformity in 06 (20%), history of trauma in 15 (50%), previous history of foot ulcer in 7 (23%), education about foot care in diabetic patients in 10 out 100 patients and education about foot care in diabetic foot patients in 04 (13%) out of 30 (Table).
underlying etiologies for diabetic foot are neuropathy, trauma, foot deformity, high planter pressure and peripheral vascular disease.\textsuperscript{9} Ill-fitting foot wear leading to foot deformity and improper toe nail cutting which increased the risk while use of chappal with a single thong between hallux and second toe result in pressure ulcer.\textsuperscript{8}

Awareness level/education about diabetes mellitus and foot care was low in our patients. Ten out of 100 diabetic patients had enough knowledge about diabetes mellitus and its complications while 4 out of 30 diabetic foot patients (13.3\%) had enough knowledge about diabetic foot care. This is comparable with the observation of Adil MM et al in which knowledge about the complications of diabetes was less than 50\%.\textsuperscript{10}

**Limitations:** This is a single centre study having limited number of samples, so further multiple centers studies are needed to evaluate the magnitude and risk factors for diabetic foot.

**CONCLUSIONS**

Diabetic foot is a common complication of diabetes mellitus. It is common in middle age, male gender and in type II diabetic patients. Common risk factors for diabetic foot are neuropathy, vasculopathy, trauma, ill-fitting shoes, discoloration of feet, foot deformity, vision problems and edema feet.

**Recommendations:** It is recommended that individual teaching and counseling is an effective method to decrease the prevalence of diabetic foot and its consequences which will indirectly lessen the economic burden on families, communities and countries.

**REFERENCES**

INTRODUCTION

Patella comprises about 1% of total body fractures, and this largest sesamoid bone is located just beneath the skin in front of the knee joint. Patellar fractures result from direct or indirect forces. Most of the patella fractures occur as a result of direct trauma to the knee joint as a result of fall and road traffic accidents. The direct force often results in comminuted or displaced fractures, whereas the indirect force such as sudden violent contraction of quadriceps muscles with knee flexion causes transverse fracture of patella.

There are several ways to treat patella fractures. Un-displaced fractures are treated with knee extension casting. Main indications for surgical fixation are when there is 2-3mm of displacement between fracture fragments or when there is joint incongruency. The objectives of surgical treatment include preservation of the knee cap to the greatest possible extent, precise anatomic reduction of the joint surface by stable fixation, and restoration of the knee-extensor mechanism, thus allowing early mobilization.

Treatment options include reconstruction of the entire patella, partial patellectomy and tendon repair or total patellectomy with extensor mechanism repair.

There is a status quo in the treatment of patella fracture despite advances in surgical techniques. However, the preference is being shifted from patellectomy to reconstruction and preservation of patella and restoration of extensor mechanism.

Tension band wiring is an effective treatment option for treating simple transverse patella fractures because it has fewer complications.

MATERIALS & METHODS

This prospective study was conducted at the Department of Orthopaedic Surgery in Lady Reading Hospital Peshawar and Khyber Medical Centre Dabgari Garden, Peshawar from Sep 2012 to March 2014. 23 patients, who had unilateral simple transverse fracture of patella, were enrolled in this study. Out of them 3 patients were lost to follow up, leaving 20 patients available for study with a minimum duration of follow up of six months.

Inclusion criteria included:

1. All closed displaced simple transverse fractures with intraarticular incongruity of more than 2 mm and displacement of more than 3 mm.
2. Age > 16 years & <60 years.
3. Sex: Both male and female

Exclusion criteria were:

1. Comminuted fractures.
2. Any established knee deformities prior to the fracture.
3. Fracture associated with other ligamentous and
bony injuries in the knee region.

4. Open fractures.

The patients were admitted via casualty department in to orthopaedic unit of the hospital and through private clinic in Khyber medical centre, after proper examination for associated soft tissue or bony trauma and resuscitation and optimization of the patient in the casualty department. All the patients were operated with in 24 hours. Consent was taken from each patient regarding study and procedure.

Patients were prepared in a conventional way in the Operation Theater. Longitudinal midline incision over the mid portion of the patella was made. Fracture fragments were reduced anatomically by using patellar clamps and fixed with two 2mm Kirschner wires from inferior to superior borders, about 5mm deep to the anterior surface of the patella along the lines dividing the patella into medial, central and lateral thirds. Then a 18-gauge wire was passed in figure-eight fashion and tightened at the upper end. Proper reduction of the patella was checked by palpating the undersurface of the patella with the knee extended. Retinacular tears were repaired with multiple interrupted sutures by vicryl 2-0 Skin was closed by prolene 2-0. Well padded dressing without a splint were applied.

Post-operatively, all the patients were encouraged to have continuous passive motion from 1st post-operative day. Quadriceps strengthening exercise, progressive straight leg raising (SLR) with weight, range of motion (ROM) exercises and full weight bearing walking without crutches were taught.

All the patients were followed up at 2 weeks, 2 months and 6 months. Skin stitches were removed at 2 weeks follow-up. Knee pain and range of motion were selected as major determinant of outcome. In each follow up x-rays were taken for union at the fracture, pain was graded according to knee pain score while range of motion was graded according to Goodfellow’s grading system (Table-I, II).

The data analysis was performed using SPSS statistical software. The significance level was considered at 0.05 p-Values.

<table>
<thead>
<tr>
<th>Table 1: Knee Pain Score⁹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PAIN</strong></td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Mild</td>
</tr>
<tr>
<td>• Stairs only</td>
</tr>
<tr>
<td>• Walking and stairs</td>
</tr>
<tr>
<td>Moderate</td>
</tr>
<tr>
<td>• Occasional</td>
</tr>
<tr>
<td>• Continual</td>
</tr>
<tr>
<td>Severe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grading</th>
<th>Range of motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>Painless full movement and able to squat.</td>
</tr>
<tr>
<td>Good</td>
<td>Full flexion and extension but painful squat</td>
</tr>
<tr>
<td>Fair</td>
<td>Painless movement with 10-20 degree limitation of flexion</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>Painless movement with limitation of 20-40 degree of flexion</td>
</tr>
<tr>
<td>Poor</td>
<td>Limitation of &gt; 40 degree flexion.</td>
</tr>
</tbody>
</table>

RESULTS

Twenty three patients, who had unilateral simple transverse fracture of patella, were enrolled in this study. Out of them 3 patients were lost to follow up, leaving 20 patients available for study. The age of the patients ranged from 20 to 60 years with a mean age of 42.91 years. The maximum incidence of the injury was observed during 4th decade of life. Sixteen were males while 4 were females. The main cause of injury was RTA in 13 (65%) and 5 cases (20%) were due to direct injuries blow while 2 cases (10%) were due to assault, hit with a rod.

Superficial wound infection and Severe irritation at pin site were noted in 2 and 4 patients respectively. Infection resolved nicely with wound care and antibiotics with no long term sequelae. Pin site pain did not resolve with analgesics and eventually wires had to be removed in about 7 months after fracture consolidation. According to Goodfellow grading system mentioned above results were not encouraging at 2nd week follow up (18 out of 20 patients had poor result). The results gradually improved in successive follow ups. At 2nd months follow up, upto 60% patients (12 out of 20) had fair results. At 6 months follow up, 17 out of 20 patients (85%) had good, fair or excellent results (Table-III).

<table>
<thead>
<tr>
<th>Table 3: Good fellow grading in each follow up</th>
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<tbody>
<tr>
<td><strong>Good fellow Grading</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Excellent</td>
</tr>
<tr>
<td>Good</td>
</tr>
<tr>
<td>Fair</td>
</tr>
<tr>
<td>Satisfactory</td>
</tr>
</tbody>
</table>
The modified knee pain score was used went hand in hand with Good fellow grading system. All the patients showed gradual improvement in pain with the passage of time as the bone and the surrounding soft tissue sleeve showed signs of healing. At 2nd week follow up, consistent pain at rest as well as during motion was the major symptom in all of the patients (Table-IV). At 4 weeks follow up, 50% patients had knee pain score of 40 and 50% patients had 30. Hence all the patients during this follow up had mild knee pain. Among 20 patients, 13 patients (65%) had knee pain score of 50 at 6th month follow up and 7 had more than 40 knee pain score during this period. There was statistically significant difference between 1st, 2nd and 3rd follow up. (P value < 0.05).

**Table 4: Knee pain score in each follow up**

<table>
<thead>
<tr>
<th>Knee pain score</th>
<th>Follow up 2 weeks</th>
<th>Follow up 4 weeks</th>
<th>Follow up 6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>10</td>
<td>14</td>
<td>70%</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>45</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Several methods have been used to fixate this fracture, such as circular cerclage wire around bone, removal of part or the entire patella, cortical or cancellous screws as and wide wire which accelerates the union by converting tension force on the anterior surface into the compression at articular surfaces when bending knee in addition to allowing early motion to knee. Superficial wound infection and Severe irritation at pin site were noted in 2 and 4 patients respectively. Infection resolved nicely with wound care and antibiotics with no lonterm sequelae. Pin site pain did not resolve with analgesics and eventually wires had to be removed at about 7 months after fracture consolidation.

In this study result were excellent in 12 (60%) patients, good in 2 (10%) patients, fair in 3 (15%) patients, satisfactory in 2 (10%) patients and poor in 1 (5%) patient. Poor result in one patient was probably because of the fact that she did not follow knee physiotherapy in a proper way. Gumula et al treated patients with tension band wiring, partial and total patellectomy. Most of the excellent and good results were reported in patients with tension band wiring. Mehdi et al studied all fracture of patella with tension band wiring. Mehdi et al12 in a multicentre study observed excellent and good results in 83% of his patients. Botsman and chen reported good to excellent results in 50 to 80 percent of the patients. Benjamin et al and Burvant et al in their studies compared tension band wiring with other methods of fixation. According to them modified tension band wiring technique had stronger fixation than other methods. Shrestha B et al in his study of modified tension band wiring in patella fracture produced up to 93% good, excellent and satisfactory results. All these studies are quite comparable to our studies. Lavack et al studied all fracture of patella with different modalities of fixation and best of the result of all were achieved by precise anatomical reduction of patella fracture and fixation with K wires and tension band wire (modified tension band wires). The commonest reason for implant removal is persistent pain and infection in the implant.17,18 In our study four patients needed removal of implant because of pain at the implant site.

**CONCLUSION**

Tension band wiring is an effective treatment option for treating simple transverse patella fractures because it has fewer complications.

**REFERENCES**

Functional Outcome of Modified Tension Band Wiring in Transverse Fracture of Patella


Ophthalmological Society of Pakistan
Karachi Branch

Karophth 2016
4-6 March’.2016

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Asphyxial Deaths in Peshawar, KPK, Pakistan

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Peshawar Medical College, Peshawar

ABSTRACT
Background: Medico-legal autopsy is a valuable source of informations about death whether death is natural or unnatural.
Study design: This descriptive study is based on autopsy record and provides informations regarding asphyxial deaths occurring in Peshawar, KPK.
Duration of study: From 1st January 2013 to 23rd May 2013.
Methodology: This study was conducted in the department of Forensic Medicine & Toxicology of Khyber Medical College, Peshawar. Data was collected from the record of autopsies performed from January 2013 to May 2013. It include all cases referred from urban as well as from rural area police stations of Peshawar District.
Results: Out of total 400 autopsies 15 deaths were due to asphyxia (4% of autopsies). More in males (9) than in females (6) and more in rural areas (10) than in urban areas (5).
Conclusion: Situation of unnatural deaths due to asphyxia in Peshawar is alarming and should be seriously looked at by the state. This preventable cause of death can be controlled by providing better education including religious education, by improving social justice and socioeconomic conditions of people and by increasing psychiatric treatment facilities.

Keywords: Asphyxial deaths, Autopsy, Suicide, Peshawar, Pakistan.

INTRODUCTION
Asphyxia is any mechanical interference in the process of breathing which causes anoxia of brain leading to sudden death. This interference in the oxygenation of body tissues may be due to any mechanical obstruction of respiratory tract which may be from within or from outside. Obstruction of wind pipe (neck) when from outside and a rope is used for constriction of neck but body weight is not used to cause constriction of knot of rope then it is called strangulation. When one or both hands are used for constriction of neck it is called manual strangulation or throttling. If the constricting force of knot of rope is body weight it is called hanging which may be judicial or non judicial. Sometimes a group of persons may overcome someone and hang him; this non judicial hanging is called lynching. Hanging may be complete when no part of body is touching or supported by any hard object. Hanging may be partial or incomplete when body is partially or completely supported by any hard object like table or ground. Sometimes chemicals like hydrocyanic acid or carbon mono oxide may be the cause of asphyxia. In this there is no obstruction in the respiratory passage but tissues are unable to use oxygen at cellular level in spite of good amount of oxygen present in the body. A strong hold of neck for 30 seconds is sufficient to dispose off a person. If forearm is used to cause obstruction of respiratory passage it is called mugging but if a stick is used for this purpose then term bance dola is used. If a piece of cloth is used to pack the oral cavity to interfere the process of respiration this is called gagging. When water is causing interference in the normal breathing it is called drowning. Suffocation is a form of asphyxia caused by mechanical obstruction to the passage of air into the respiratory tract by means other than constriction of neck or drowning. It includes (1) smothering in which obstruction to the air passages is from outside by covering the nose or mouth eg. by a pillow choking (2) ie. obstruction to air passage is from inside eg. by a coin or a dislodged artificial tooth and (3) traumatic asphyxia or crush asphyxia which is a form of asphyxia resulting from external pressure on chest which prevents normal respiratory movements.

Policy makers can control this preventable cause of death by improving social justice, education especially the religious education, by improving socioeconomic condition of the people and by providing better psychiatric treatment facilities.
MATERIAL & METHOD

It was a retrospective descriptive study conducted in the Department of Forensic Medicine & Toxicology of Khyber Medical College, Peshawar where all autopsies are carried out for district Peshawar. A total of 400 autopsies were performed from 1st January 2013 to 23rd May 2013. All these cases were referred by the police from urban as well as from rural police stations to find out the cause, mode and manner of death or any other crime associated with death. Autopsy report was issued and a record of each case was maintained. From this record all cases of death due to asphyxia were isolated. In a performa informations like age, sex, from rural or urban area and how asphyxia was caused was noted and the results were analyzed as under.

RESULTS

Most of the victims of asphyxia deaths were male (60%) and were from rural areas (67%). Most of them were in the age group 21 to 30 years (52%). The results are tabulated as under:

<table>
<thead>
<tr>
<th>AGE</th>
<th>No.</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>09</td>
<td>60</td>
</tr>
<tr>
<td>Female</td>
<td>06</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AREA</th>
<th>No.</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>10</td>
<td>67</td>
</tr>
<tr>
<td>Urban</td>
<td>05</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Asphyxia</th>
<th>No.</th>
<th>%age</th>
<th>Sex</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Rural</td>
</tr>
<tr>
<td>Strangulation</td>
<td>10</td>
<td>65</td>
<td>05</td>
<td>07</td>
</tr>
<tr>
<td>Throttling</td>
<td>01</td>
<td>07</td>
<td>01</td>
<td>nil</td>
</tr>
<tr>
<td>Hanging</td>
<td>01</td>
<td>07</td>
<td>01</td>
<td>nil</td>
</tr>
<tr>
<td>Smothering</td>
<td>01</td>
<td>07</td>
<td>nil</td>
<td>01</td>
</tr>
<tr>
<td>Carbon mono oxide poisoning</td>
<td>01</td>
<td>07</td>
<td>01</td>
<td>nil</td>
</tr>
<tr>
<td>Drowning</td>
<td>01</td>
<td>07</td>
<td>01</td>
<td>nil</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
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<table>
<thead>
<tr>
<th>AGE</th>
<th>No.</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 10 years</td>
<td>02</td>
<td>13</td>
</tr>
<tr>
<td>11 to 20 years</td>
<td>01</td>
<td>07</td>
</tr>
<tr>
<td>21 to 30 years</td>
<td>08</td>
<td>52</td>
</tr>
<tr>
<td>31 to 40 years</td>
<td>02</td>
<td>13</td>
</tr>
<tr>
<td>41 to 50 years</td>
<td>01</td>
<td>07</td>
</tr>
<tr>
<td>51 to 60 years</td>
<td>01</td>
<td>07</td>
</tr>
<tr>
<td>61 years &amp; above</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Results are comparable with the previous studies done in Peshawar on this topic. In Pakistan Police is the in charge of dead body and is the investigating authority about death whether it is natural or unnatural. Death may be unnatural but if the concerned police Station House Officer (SHO) is satisfied that death is natural then he can issue order for burial of the dead. In case of suicide as no one is to be punished, no further investigations are required. Death may be natural but concerned SHO is not satisfied so he will ask the medical authority for autopsy. Dead body is the property of the state hence no consent of any one is required for autopsy. People avoid autopsy of their near and dear ones and aim is to save time and money by avoiding lengthy court procedures so the actual number of unnatural asphyxia deaths is much more than the cases referred for postmortem. Most of asphyxial deaths ie. 10 out of 15 deaths occurred in rural areas In our study strangulation was the most common cause of asphyxia as 10 cases of asphyxia deaths (65%) out of 15 deaths due to asphyxia were due to strangulation.

To dispose off a person by strangulation is easy as no weapon is required to be purchased. In our study a case of throttling of a boy age 5 was noted but there was no fracture of hyoid bone. Fracture of hyoid bone is found to be more commonly present in the age group above 40 years and it is probably due to ossification of the hyoid bone which makes it hard and brittle thus more vulnerable to fracture. Out of total 10 cases of strangulation 7 were from rural areas. In our study asphyxial deaths are more in females than males which is comparable to other reports available on this topic. Deaths by strangulation are equal both in males and females according to our study. The findings in our study regarding the level of application of constricting force to the neck are comparable to the findings reported by others .Most cases of deaths due to asphyxia (52%) were of age between 21 to 30 years. This is the prime age and the person is the most emotional at this age. Asphyxial deaths are more common in rural areas (67%) as compared to urban areas (33%) and reason for this may be less education and difficult life in rural as compared to urban areas.

CONCLUSION

This study will help the policy makers in controlling this preventable cause of death by improving social justice, education especially the religious education, by improving socioeconomic condition of people & by providing better psychiatric treatment facilities. Islam teaches us that do not loose temper on minor
things, respect the social rights of others, avoid drugs of addiction, be sympathetic to minors and respectful to the seniors and above all trust in GOD and never be disappointed.

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ABSTRACT

Objectives: To study the prevalence of congenital anomalies in the offspring of mothers suffering from TORCH infections during pregnancy.

Material & Methods: The study was carried out in the Gynaecology and Obstetrics Unit of Kulsoom Maternity Home Peshawar during the study period from 01.06.2014 to 31.03.2015. A total number of 1000 pregnant women (both emergency and booked) admitted for the purpose of delivery, in the age group between 16 and 40 years, were included in the study sample. Complete history was taken on a printed performa. All the cases were screened for TORCH infections by Enzyme linked immune-sorbent assay (ELISA) technique during pregnancy. All the cases were subjected to repeated ultrasound examination during the pregnancy. After the delivery all the live newborns of TORCH positive mothers were thoroughly examined for congenital anomalies (CAs). Ultrasound of skull/brain and Echocardiography were done in newborns suspected of having intracranial and cardiovascular anomalies respectively. Cases with still births, intrauterine deaths, abortions, intrauterine growth retardation and prematurity were excluded from the study sample.

Results: In the study population of 42 pregnant women were detected positive for TORCH infection. The patients had acquired some component of TORCH infection either during the present pregnancy or were unaware of the earlier acquired infection. Out of infected women, 35.71% (15/42) gave birth to babies with various congenital anomalies. Most important pathogens involved being, cytomegalovirus (CMV), toxoplasmosis, herpes simplex virus (HSV) and rubella, affecting the cases alone or in combination. The ratio of involvement of various TORCH components was, CMV, 1.5% (15/1000), Toxoplasmosis, 0.9% (9/1000), Rubella, 0.7% (7/1000), HSV, 0.5% (5/1000) and combination of pathogens, 0.6% (6/1000). Various congenital anomalies detected in these cases were, microcephaly, 20% (03/15), intracranial calcification, strabismus and cardiac anomalies, 13.33% (02/15) each. while anencephaly, hydrocephaly and congenital cataract 6.66% (01/15) each. Cases with still births, intrauterine deaths, abortions, intrauterine growth retardation and prematurity were excluded from the study sample. Majority of the congenital anomalies were found in multigravida in the age range between 21 and 35 years. Male gender was predominantly affected.

Conclusions: The problem of congenital abnormalities is serious in this part of the world, deserving serious attention; especially the presence of congenital abnormalities in the previous pregnancies is a matter of great concern. All the suspected pregnant women should be screened for TORCH infections. All TORCH positive cases should have repeated abdominal ultrasound to look for serious congenital malformations in the fetus and the required measures to be taken in time in order to reduce the number of handicapped children.

Key words: Pregnant women, TORCH infections, Congenital anomalies.

INTRODUCTION

Causes of congenital anomalies include various congenital / environmental factors or combination of the two. Among the environmental group, various infections during pregnancy including TORCH infections are one of the most important factors involved. TOTCH is an English abbreviation for a group of infections caused by various pathogenic organisms including “T”, for Toxoplasmosis caused by Toxoplasma Gondi, a protozoan, transmitted to human beings by taking contaminated water or food or under cooked infected meat. “O” for other infections, including human immunodeficiency virus (HIV), causing AIDS (Acquired Immunodeficiency Syndrome).

TORCH infection during pregnancy can have serious consequences in the fetus in the form of various congenital abnormalities. All the suspected pregnant women should be screened for TORCH infections. Repeated abdominal ultrasound is required in such cases throughout pregnancy in order to look for serious congenital malformations in the fetus. So that appropriate measures are taken in time and the burden of morbidity and mortality is reduced.

Congenital syphilis, Parovirus B19, chlamydia trachomatis, neisseria gonorrhoeae etc. “R” for rubella, caused by RNA rubella virus, notorious for infecting the placenta and fetus intern. “C” for cytomegalovirus (CMV), a DNA virus, having very harmful effects on the fetus (incidence of congenital CMV infection being
In the developed countries, CAs lead to TORCH infections is a must, especially in cases with anomalies in the newborn. Therefore screening for repeated abortions, miscarriages and congenital pregnant women. These viral infections may cause serious consequences in the fetus of affected women. The fetus can suffer from intracranial calcification, congenital cataract, premature births, miscarriages, mental retardation and many other congenital anomalies (CAs). These infections are one of the leading causes of bad obstetrical history (BOH), culminating in repeated abortions, miscarriages and congenital anomalies in the newborn. Therefore screening for TORCH infections is a must, especially in cases with BOH. In the developed countries, CAs lead to 20-30% of perinatal deaths, while 50% of the babies die in infancy. It also leads to severe mental and physical handicaps in 50% of the affected children.

**MATERIAL AND METHODS**

A total of 1000 cases with pregnancy in the age group between 16 and 40 years, including cases with bad obstetrical history, admitted in the maternity home for the purpose of delivery, were studied for TORCH infections and their pregnancy outcome, during the study period from 01.06.2014 to 31.03.2015. Complete history was taken on a printed performa including all details of the present pregnancy and outcome of the previous pregnancies, if any. All the cases were screened for TORCH infections besides routine investigations and were repeatedly subjected to ultrasonic examination throughout pregnancy to know the progress of pregnancy and any fetal congenital anomaly. Cases suffering from diabetes, cardiac problems, epilepsy, hypertension and hyperpyrexia were excluded from the study population. Blood samples collected from all the cases were sent to the renowned laboratories in Peshawar, where the samples were screened for IgM and IgG antibodies by Enzyme Linked Immuno-sorbent assay (ELISA). IgM is the most common class of immunoglobulin which functions as a specific antibody against viruses and signifies recent infection as it is detectable in the first three months of infection. Therefore IgM positivity in the maternal blood is a good indicator of recent TORCH infection in the mother. Cases with reactive serum titers of IgM and IgG antibodies for various components of TORCH infections were closely followed to know the pregnancy outcome.

**RESULTS**

In the present study of 1000 cases with pregnancies, all the cases were screened for TORCH infections by taking their blood samples and sent to renowned laboratories. All the samples were screened for IgM and IgG antibody titers by ELISA technique. 4.2% (42/1000) cases were found to have some component of TORCH infections either during the present pregnancy or had acquired the infection during the previous pregnancies. The commonest age group of the affected cases was between 21 and 35 years (Table 1). Infection was more common in mutigravida. Male newborns were affected more as compared to female.

Congenital anomalies were detected in offspring of 35.71% (15/42) of the infected cases. The remaining 64.28% (27/42) cases did not show any adverse effect. Most important pathogens involved being, cytomegalovirus (CMV), toxoplasmosis, herpes simplex virus (HSV) and rubella, affecting the cases alone or in combination. Cytomegalovirus (CMV) was the commonest TORCH component accounting for 1.5% (15/1000), Toxoplasmosis was the second common component detected in 0.9% (9/1000), Rubella infection was found in 0.7% (7/1000), Herpes simplex virus (HSV) in 0.5% (5/1000) and combination of pathogens, affected 0.6% (6/1000) of the cases (Table 2). Congenital anomalies detected in these cases were, intracranial calcification and cardiac anomalies, 20% (3/15) each and microcephaly, hydrocephaly and strabismus 13.33% (2/15) each. While cases of congenital cataract, anencephaly and meningocoele/ meningo-mylocele were detected in 6.66% (1/15) (Table 3). components of TORCH infection responsible for these congenital anomalies are given in Table 3. Cases with Premature births, still births, intrauterine growth retardation and abortions were excluded from the study sample.

**Table 1: Average age of the affected females and the their ratio of congenital anomalies**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Age in years</th>
<th>Cases with torch</th>
<th>Cases with cas</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16-20</td>
<td>05</td>
<td>01</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>21-25</td>
<td>08</td>
<td>02</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>26-30</td>
<td>13</td>
<td>05</td>
<td>38.46</td>
</tr>
<tr>
<td>4</td>
<td>31-35</td>
<td>07</td>
<td>03</td>
<td>42.58</td>
</tr>
<tr>
<td>5</td>
<td>36-40</td>
<td>09</td>
<td>04</td>
<td>44.44</td>
</tr>
</tbody>
</table>

IgM positivity, which is indicative of recent infection, was more pronounced in cases with cytomegalovirus (CMV), Toxoplasmosis and Rubella infections.
**DISCUSSION**

Various maternal infections during pregnancy have drastic impact on the pregnancy outcome. These infections are high risk factors for causing abortions, stillbirths and various congenital anomalies in the fetus. TORCH infections are especially known for such serious impact. The pregnant mothers are usually unaware of the primary infection as most of them are asymptomatic. Most of the cases carry a bad obstetrical history. All pregnant women and especially those with bad obstetrical history are screened for TORCH infection by ELIZA method as soon as they are diagnosed to be pregnant. Cases with high serum levels of IgM are considered positive for recent infection.

In our study 4.2% (42/1000) pregnant women were found to be positive for some component of TORCH. Cytomegalovirus was found to be the most common organism involved. IgM antibodies, indicative of primary infection, were detected in maternal serum in 37.71% (15/42) of the TORCH infected cases i.e. 1.5% (15/1000) of the total study population and almost 14.28% (6/42) of the infected cases gave birth to newborns with various congenital anomalies, either alone or in combination with Toxoplasmosis. Similar figures were reported in a study conducted in China on 900 cases with IgM positivity of 4.11% (37/900) for TORCH, 2.00% (18/900) for CMV alone and abnormal pregnancy outcome in 64.52% cases. Prevalence rate of 84.5-95% in various studies conducted in Turkey and 9.2%/96.4% IgM/IgG seropositivity for CMV was noted in Bangalore India. Maternal CMV is a leading cause of congenital CMV in Sudan also.

Toxoplasmosis cases were the second most common in our study. IgM antibodies, indicative of primary infection, were detected in maternal serum in 21.42% (9/42) of the total TORCH infected cases i.e. 0.9% (9/1000) of the total study population. 9.52% (4/42) of the infected cases gave birth to newborns with various congenital anomalies. Seropositivity of 10.5% (40/102) for Toxoplasmosis was also detected in two studies conducted in India.

Rubella was third common infection detected in our study, accounting for 16.66% (7/42) of the total TORCH infected cases i.e. 0.7% (7/1000) of the total study population. Congenital anomalies were detected in 9.52% (4/42) of the seropositive mothers. The remaining 7.14% (3/42) infected cases did not show any abnormality. The findings are very much consistent with study conducted in China, showing Rubella seropositivity of 0.44% (4/900).

Herpes simplex virus (HSV) was detected in 11.94% (4/42) of TORCH infected cases i.e. 0.5% (5/1000)
of the total study population. The study conducted by Zhang QQ et al in China quoted almost similar finding of 0.78% (7/900) while the Indian based study registered higher figures of 26.8%. Astonishingly no congenital abnormality was detected in any of the Rubella infected cases in our study. The reason could be either, the patients becoming infected in the later days of third trimester as the infection has more serious consequences in the first trimester of pregnancy or exclusion of cases of still births, intrauterine deaths, abortions, prematurity and intrauterine growth retardation from the study sample.

Mixed infection, mostly with Toxoplasmosis and CMV, was present in 14.28% (6/42) of the total TORCH infected cases i.e. 0.6% (6/1000) of the total study population. Mixed infections contributed to 40% (6/15) of the congenital anomalies detected in the whole study population. Padmavathy M et al has also registered 25% congenital anomalies in their study as a result of mixed infection.

CONCLUSIONS

The present study has revealed that TORCH infection during pregnancy can have serious consequences in the fetus in the form of various congenital abnormalities. It is therefore recommended that all the suspected pregnant women should be screened for TORCH infections. Repeated abdominal ultrasound is required in such cases throughout pregnancy in order to look for serious congenital malformations in the fetus. So that appropriate measures are taken in time and the burden of morbidity and mortality is reduced.

REFERENCES

INTRODUCTION
Maxillary sinusitis is relatively common disorder affecting about 20% of population at some times in their lives. According to national centre for disease statistics, sinusitis has become number one chronic illness in the United States. Chronic sinusitis may be defined as persistent inflammation and suppuration of Para nasal sinuses for longer than three months. Inflammation of sinonasal mucosa leads to obstruction of narrow osteomeatal complex coupled with gravity and decreases mucociliary clearance resulting stasis of secretions in the sinuses which is a culture media for bacterial growth.

The treatment of maxillary sinusitis by opening and irrigating the sinus via various routes has a long history. The First description of inferior metal antrostomy was by Gooch in 1770, lichwitz 1880, using needle trocar and cannula respectively, thus began the first attempts at diagnosis by proof puncture followed by irrigation.

ABSTRACT
Objective: This study was chosen to carry out the results of antral lavage and intranasal antrostomy and comparison of gross appearance of sinus mucosa and any pus/secretion during operation and pre operative radiological findings in maxillary sinusitis.

Material & Methods: This randomized control study was conducted in the department of ENT Chandka Medical Hospital Larkana during the period from Jan 2010 to Jan 2013.

Results: The overall study of 150 cases was conducted. Out of 150 cases 92 (61.31) were male and 58 (38.71) were female and male / female ratio was 1.6:1. Symptomatology was dominated by PND 95%, purulent rhinorrhea 70%, headache 52% and nasal obstruction 25%. The over all results of 150 patients x-ray PNS (OMV) showing mucosal thickening 89 (59.3%) hazy / opaque sinus 40 (26.6%) fluid level 14 (9.4%). Three times antral lavage was done in all 100 patients. Out of 100 patients 33 got no benefit and under went for intra nasal antrostomy along with selected 50 patients. Every patient was followed up to 3 weeks. Antral lavage shows 67% benefit and 33% patients got no benefit .While intra nasal antrostomy followed up patients got 90% benefit and 10% got no benefit

Conclusion: This study shows that results of intra-nasal antrostomy is better than antral lavage.

Key Words: X Ray PNS (OMV), Antral Lavage, Antrostomy.
sensitivity. Therapeutically it is used in the treatment of non febrile acute, sub acute, chronic maxillary sinusitis and pan-sinusitis which has failed to respond to conservative medications.\(^{10}\) The aim of antral lavage and intranasal antrostomy has been to reduce bacterial load by flushing out debris, infected and insipissated mucosa that produce infection.\(^{11}\) There is evidence that performing antral lavage in combination with adenoidecotomy can improve treatment outcomes.\(^{12}\) Re-accelerate mucociliary transport by irrigation of sinus mucosa with saline and attempt to clear any obstruction of maxillary ostium. Intranasal antrostomy at inferior meatus relieves gravitational drainage and aeration to improve sinus mucosa.

The maxillary sinus is considered as primary focus of disease therefore further detailed analysis of its clinical picture and radiological presentation is necessary for better understanding. This topic is chosen to compare the findings of X-ray, antral lavage, intranasal antrostomy, comparison of gross appearance during operation and pre operating radiological findings.

**PATIENTS & METHODS**

This study was conducted in the Department of ENT Chandka Medical College Hospital Larkana, during the period from January 2010 to 2013. Total number of cases were 150 which were divided into two groups.

First group was treated by antral lavage in outpatient department under local anesthesia only children and uncooperative patients were treated by admitted them and antral lavage done under general anesthesia. In second group intranasal antrostomy was performed in inferior meatus. All the patients were admitted and procedure done under general anesthesia. 150 cases of non febrile acute, sub acute and chronic maxillary sinusitis were selected as the inclusion criteria for these, patients were:

1. Symptoms of cold to be present more than one month in non febrile patients who failed medical treatment
2. Symptoms of facial pain or headache with purulent nasal discharge or post nasal drip and nasal obstruction.
3. Sinus X-ray showing opacification, fluid level or mucosal thickening.

Detailed history, local examination, general physical and systemic examination was performed of every patient. Laboratory investigations were carried out including blood for Hb% - TLC - ESR. Urine complete examination blood for sugar fasting/random, bleeding profile, bleeding time, clotting time, X-ray chest PA view, X-ray paranasal sinuses, trans-illumination test.

After full history and examination all 150 cases were selected for surgery and divided into two groups 100 cases for antral lavage and 50 cases for intranasal antrostomy. Antral lavage was done both under local and general anesthesia, under local anesthesia inferior meatus was packed with 4% xylocain for 20 to 30 minutes and than puncture was performed with Tilley lichwitz trocar and cannula inserted through inferior meatus into maxillary antrum and connected with Higginson rubber syringe and antrum washed with warm water/saline solution. Intranasal antrostomy was performed under general anesthesia by making opening into bony antrous wall in inferior meatus with Hills elevator or Myles retrograde antral perforator, the opening is for gravitational drainage and aeration to sinus mucosa.

**RESULT**

Total number of patients who underwent antral lavage and intranasal antrostomy was 150, out of them 100 patients were selected for antral lavage and 50 cases for intranasal antrostomy. Age, sex incidence for antral lavage the age was between 15-40 years. There were 62 males and 38 females.

**TABLE 1: Age incidence (antral lavage)**

<table>
<thead>
<tr>
<th>Age in Year</th>
<th>No: Patients</th>
<th>Percentage</th>
<th>Total % Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>15-20</td>
<td>20</td>
<td>13</td>
<td>20%</td>
</tr>
<tr>
<td>21-25</td>
<td>28</td>
<td>22</td>
<td>28%</td>
</tr>
<tr>
<td>26-40</td>
<td>14</td>
<td>3</td>
<td>14%</td>
</tr>
</tbody>
</table>

Patients for intranasal antrostomy, the average age group was between 18-40 years, male 30 in number and female 20 in numbers.

**TABLE 2: Age incidence (intranasal antrostomy)**

<table>
<thead>
<tr>
<th>Age in Year</th>
<th>No: Patients</th>
<th>Percentage</th>
<th>Total % Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>15-20</td>
<td>05</td>
<td>02</td>
<td>10%</td>
</tr>
<tr>
<td>21-25</td>
<td>14</td>
<td>11</td>
<td>28%</td>
</tr>
<tr>
<td>26-30</td>
<td>06</td>
<td>05</td>
<td>12%</td>
</tr>
<tr>
<td>31-40</td>
<td>05</td>
<td>02</td>
<td>10%</td>
</tr>
</tbody>
</table>

On radiological examination, mucosal thickening was mostly observed for abnormality other including fluid level, sinus opacification and antral polyp.

**TABLE 3: Over all result of 150 x-rays**

<table>
<thead>
<tr>
<th>Findings</th>
<th>No: of Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mucosal Thickening</td>
<td>89</td>
<td>59.3%</td>
</tr>
<tr>
<td>Hazzy/Opaque</td>
<td>40</td>
<td>26.6%</td>
</tr>
<tr>
<td>Fluid Level</td>
<td>14</td>
<td>9.4%</td>
</tr>
<tr>
<td>Poly/Cyst.</td>
<td>7</td>
<td>4.7%</td>
</tr>
</tbody>
</table>
Antral Lavage was done at weekly interval and results were tabulated. Antral lavage was done under local anesthesia; there were few patients in whom antral lavage was done under general anesthesia the number were 20 out of 100 in every patient antral lavage was done three times at weekly interval.

Table 4: Result of first antral lavage (n=100)

<table>
<thead>
<tr>
<th>Result</th>
<th>Bilateral</th>
<th>Right Side</th>
<th>Left Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>++ Purulent</td>
<td>14</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>+ Muco-purulent</td>
<td>18</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Clear</td>
<td>8</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 5: Result of second antral lavage (n=100)

<table>
<thead>
<tr>
<th>Result</th>
<th>Bilateral</th>
<th>Right Side</th>
<th>Left Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>++ Purulent</td>
<td>14</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>+ Muco-purulent</td>
<td>17</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Clear</td>
<td>14</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 6: Result of third antral lavage (n=100)

<table>
<thead>
<tr>
<th>Result</th>
<th>Bilateral</th>
<th>Right Side</th>
<th>Left Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>++ Purulent</td>
<td>7</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>+ Muco-purulent</td>
<td>17</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>Clear</td>
<td>10</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

From the comparison data between the 1st and 2nd antral lavage it is clear that results of two antral lavages are nearly the same with minor degree of improvement in pus coming from the sinus. From the comparison between 2nd and 3rd antral lavage it is clear that there is mild decrease in amount of pus coming from sinus. We can also see that some cases become more positive (+ve) than before after the 2nd lavage.

Table 7: Comparison between the result of first and second antral lavage. (n=100)

<table>
<thead>
<tr>
<th>Result of First Antral Lavage</th>
<th>Comparison with the second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Bilateral</td>
</tr>
<tr>
<td>++ve</td>
<td>14</td>
</tr>
<tr>
<td>+ve</td>
<td>18</td>
</tr>
<tr>
<td>-ve</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 8: Comparison between the result of second and third antral lavage

<table>
<thead>
<tr>
<th>Result of second Antral Lavage</th>
<th>Comparison with the third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Bilateral</td>
</tr>
<tr>
<td>++ve</td>
<td>14</td>
</tr>
<tr>
<td>+ve</td>
<td>17</td>
</tr>
<tr>
<td>-ve</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 9: Follow up result of antral lavage (n=100)

<table>
<thead>
<tr>
<th>Result</th>
<th>No: of Patient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum benefit</td>
<td>26</td>
<td>26%</td>
</tr>
<tr>
<td>Moderate benefit</td>
<td>41</td>
<td>41%</td>
</tr>
<tr>
<td>No Benefit</td>
<td>33</td>
<td>33%</td>
</tr>
</tbody>
</table>

Table 10: Follow up result of intranasal antrostomy (n=50)

<table>
<thead>
<tr>
<th>Result</th>
<th>No: of Patient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum benefit</td>
<td>30</td>
<td>60%</td>
</tr>
<tr>
<td>Moderate benefit</td>
<td>15</td>
<td>30%</td>
</tr>
<tr>
<td>No Benefit</td>
<td>5</td>
<td>10%</td>
</tr>
</tbody>
</table>

From above follow up data it is clear that most of patient under growing antrostomy including 33 those patients who were not responding to antral lavage underwent this procedure were relieved from their symptoms and only few got less response.

Antrostomy

Table 11: Follow up result of intranasal antrostomy (n=50)

<table>
<thead>
<tr>
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From above follow up data it is clear that most of patient under growing antrostomy including 33 those patients who were not responding to antral lavage underwent this procedure were relieved from their symptoms and only few got less response.

DISCUSSION

In present study 150 patients of maxillary sinusitis were treated by Antral lavage and intranasal antrostomy out of these 150 cases 92 (61.3%) were male and 58 (38.7) were female and the male female ratio was 1.6-1 patients selected for this study, the age group was 15-40 years majority of patients were age range between, 20-25 years, symptomatology was dominated by post nasal drip 95% purulent rhinorrhea, 70% headache, 52% nasal obstruction, 25% bilateral / unilateral more on affected side. Average duration of symptoms was 24 months ranging from one month to 7.5 year. In sinus radiography mucosal thickening was most commonly observed, interpretation of mucosal thickening as major (4-6mm) and minor (1-3mm) is difficult inconsistent with previous study.13

Major thickening may be diagnosed easily while labeling minor thickening is difficult one. Opaque appearance of antrum and fluid level were noted in 61
patients. Many studies have shown poor correlation between X-Ray and operative findings\textsuperscript{12,13,14,15} in this study relation ship was 67% and false positive rate was 33% but majority of pervious studies shown 49% false rate.\textsuperscript{7}

Therapeutically antral lavage is better in the treatment of non febrile acute, sub acute and chronic sinusitis, while intranasal antrostomy is much more beneficial where antral lavage fails, refractory to conservative treatment. All patient of antral lavage after irrigation, majority of patients with purulent rhinorrhea showed improvement some got improved despite symptomatic treatment. All 50 patient + 33 those patient who does not got benefit from antral lavage under went for intranasal antrostomy and after antrostomy majority of cases from this procedure got benefit. Therefore this study shows that intranasal antrostomy is better than antral lavage. The responses with antrostomy were documented as maximum benefit 60% moderate 30% and no response 10%.

CONCLUSION

This study shows that if the underline cause is treated, the result of antrostomies is better. Therefore intranasal antrostomy is reasonable and reliable procedure to clarify such abnormalities.

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Relationship of Preoperative Surgical Delay to the Early Mortality after Hip Fracture in Elderly Patients

Syed Dil Bagh Ali Shah¹, Abdus Samad Khan²
Ghazala Sahib Shah³, Prof. Zaffar Durrani⁴

ABSTRACT
Objective: To determine whether a delay in surgery for hip fractures affects postoperative mortality among elderly patients.
Study design: Descriptive case-series.
Place & Duration of study: Orthopedic department Khyber Teaching Hospital Peshawar, from January 2015 to August 2015.
Methodology: This is a prospective study of 108 patients who underwent surgical treatment of a hip fracture. Postoperative mortality rates were measured in relation to the delay in surgery.
Results: Total mortality following the hip fracture surgery was 8.1% (30-days), when compared to pre-operative delay in patients who had surgery within 2 days (first 48 hours) and those after 48 hours (2 days), the mortality rates were 0% and 8.1% respectively (statistically significant).
Conclusions: Patients with hip fractures in whom surgery was delayed (due to any reasons) beyond first 48 hours (first 2 days) had 8.1% higher risk of death in 30 days (with in first month) as compared to those operated with in first 48 hours.
Key words: Hip fracture, Mortality.

INTRODUCTION
Hip fracture is a common injury in the elderly associated with significant morbidity, mortality and disability. Incidence increases with age, and 75% of hip fractures occur in women.¹² About 50% of patients who lived independently before sustaining a hip fracture are unable to regain their independent lifestyle.³⁵ Five to 12% of hip fracture patients discharged to a post-acute care facility were readmitted to the hospital within 6 weeks.⁶ The social and economic costs on patients, their families, and society at large are vast. In 2002, more than 86,000 hip fractures were recorded in Italy in patients over 45 years of age; persons over 65 years accounted for 93% of those hospital admissions and 73% of these were females. The direct cost of hospitalisation in Italy, in patients over 65, was almost 400 million Euros.⁷

Mortality associated with hip fractures has been estimated about 5-10% within one month. The number of hip fractures globally is expected to exceed 7-21 million annually over the next 40-50 years as the elderly population is increasing, with a significant cost to health care systems. and around 20%-30% of patients die within one year.⁸⁹ A review of the outcomes after hip fracture over a forty-year period (1959-1998) reported that mortality at 6 and 12 months afterwards remained essentially unchanged over the period reviewed.¹⁰

Surgical treatment within 24-48 hours after hip fracture is recommended by clinical guidelines¹¹,¹³ but the effect of this suggestion on patient morbidity and mortality is controversial. Some studies have reported no differences in outcomes between delayed and immediate treatment,¹¹,¹³ others reported that for patients without comorbidities, mortality increases only if surgery is delayed beyond the fourth day.⁹

National hip fracture database has given a period of thirty six hours waiting time to surgery in elderly patients with hip fracure.¹⁶ Although routine surgery within 36 hours after admission is hard to achieve in most facilities, anesthesiologists must be aware of the fact that an undue delay may be harmful to hip fracture patients, especially those at relatively low risk or those who are young.¹⁷

This prospective observational study was conducted to determine whether operative delay increases mortality of elderly patients with hip fracture.

There should not be an unnecessary delay in hip fracture surgery in order to decrease the risk of early mortality. Every effort should be made to optimize elderly hip fracture patients for surgery as soon as possible to be operated within first 48 hours.
METHODOLOGY
This is a prospective study of patients with primary diagnosis of hip fracture, admitted to Orthopedic and Trauma department of Khyber Teaching Hospital Peshawar, between January 2015 to August 2015. A pre-set proforma was used to collect data of the patients comprising of Bio-data, date of injury (fracture), date of surgery, time between injury and surgery and co-morbidities. All the proformas were filled by a single person. All patients older than 50 years with primary diagnosis of hip fracture were included. Patients with pathological hip fracture, open fracture and younger than 50 years of age were excluded.

Four types of operation for hip fracture were identified:
1. Dynamic hip screw fixation (DHS).
2. Dynamic condylar screw (DCS).
3. Close reduction and
4. AO screws fixation and hemi-arthroplasty (Austin moor prosthesis (AMP)/ Cemented bipolar hemi-arthroplasty).

The outcome variables were: mortality within 30 days (30-days mortality) , waiting time for surgery and presence of medical co-morbidities. Waiting time for surgery was defined as the number of calendar days between injury (hip fracture) and surgery and grouped as follows:
First 48 hours (2 days),
2-7 days,
1-2 weeks and > 2 weeks.

All data were compiled and calculated with SPSS version 10. Frequency and percentage were calculated for categorical variables. The descriptive measures, like mean ± standard deviation were calculated for continuous variables. Chi-square test was applied to compare categorical variables. P value <0.05 was considered significant.

RESULTS
There were a total of 108 patients. 37.03% (n=40) patients belonged to age group 50-65 years, 37.03% (n=40) age group 66-75 years while 25.92% (n=28) to age group more than 75 years. Males were 58 (53.27%) and females 50 (46.72%). Types of operation for hip fracture were distributed as follows: dynamic hip screw (D.H.S) 65.74%, Dynamic condylar screw (D.C.S) 18.51%, hemi-arthroplasty (AMP and Bipolar) 10.18%, and closed reduction and AO Screws fixation 5.55%.

Sixteen patients (14.81%) patients were operated within 2 days, 51 (47.22%) patients waited for 2-7 days, 26 (24.07%) patients waited for 1-2 weeks while 15 (13.88%) patients waited for more than 2 weeks. The Surgery delay time was not affected by the admission day of the week: patients hospitalized on Sunday (weekend) were operated within the same time-frame as those admitted on the week-days. All the above information collected on a preset proforma by a single person.

61 (56.48%) patients and / or their attendants (out of the above) could be contacted through telephonic contact to know about their alive status. The total mortality following hip fracture surgery out of contactable group was 5 (8.1%) while 56 (91.80%) of the patients were alive. All the dead patients were male. Mortality rate increased as the age increased. The total mortality in patients who had surgery within first 2 days (48 hours) of their hip fracture, those who were operated within 2 to 7 days and those who waited for more than seven days were 0%, 4.91% and 3.27% respectively. i.e 0% vs 8.1% (4.91+3.27) in those patients operated with in first 48 hours (2 days) vs those operated after 48 hours (2 days).

DISCUSSION
In this series only 14.81% of patients were operated within first 2 days, which is much lower than that reported by studies from Western countries where 33-93% of patients were operated within 2 days. Patients who had surgery within 2 days had lower mortality (in-hospital, 30-days and total mortality) compared to those who waited for surgery >2 days. This study confirms the previous reports on the association between delayed hip surgery and increased mortality in elderly patients with hip fracture. This may be due to the increased risk of prolonged immobilization, increased length of hospital stay and increase risk of complications.

The effects of preoperative delay in hip surgery on mortality outcomes are generally borderline or insignificant. Weller et al estimated that over 5000 subjects would be required to detect an odds ratio of 1:2 (80% power; alpha=0.05) favoring early surgery. Even more patients would be required if adjustments for confounding were to be made, because small studies are at substantial risk of producing invalid results as a result of having so few events and patients relative to the number of predictors considered in the analyses. A systematic review on the effect of preoperative timing on mortality, which included 257,367 patients across 16 prospective and retrospective studies, found that a surgical delay of more than 48 hours was associated with increased mortality in hip fracture patients, but noted that “potential residual confounding factors in observational studies may limit definitive conclusions.”

The current evidence suggests that while surgical delay of more than 24 hours may not unequivocally impact mortality, there is no theoretical benefit for
healthier patients to wait for surgery. Rather, there is the potential for increased complications and poor outcome. In the case of medically unfit patients, this effect is less clear. However, most of the studies are flawed by heterogeneity and a retrospective design. In the absence of a randomized prospective study comparing delayed and expeditious surgery, it is difficult to know whether surgical delay adversely affects outcomes directly or whether delay in surgery is simply a reflection of underlying morbidities that adversely affect the complications.

Similarly our study confirms that mortality in male patients following hip following hip fracture is higher than female patients. This is also confirmed by an Italian study on 493 cases of proximal femur fractures in patients over 65 years of age that estimated the probability of death one year after hip fracture at 20.8% in women, and 30.9% in men. The management of hip fracture requires complex yet cohesive care from presentation to the emergency unit, through the departments of radiology, anesthesia, orthopedic surgery, medicine, and rehabilitation. Techniques to expedite preoperative care can shorten operative delays, especially for those patients that have been medically cleared for surgery. For example, a recent systematic review as well as a prospective study of 116 patients found that dedicated trauma coordinators in the hospitals have been shown to be effective at fast-tracking patients with hip fractures to surgery by organizing operating room lists, peri-operative care, securing hospital beds, and acting as a liaison agent with the radiology department and porting services.

A retrospective analysis of 139 patients found that a dedicated trauma operating room not only reduced the time to dynamic hip screw but also allowed more of these surgeries to be performed during day time hours, which may reduce postoperative complications. Evidence suggests that in efficient systems, hospital management variables may not significantly affect patient mortality and morbidity. The Scottish Hip Fracture Audit collected data related to 18, 817 hip fracture patients and analyzed, through multiple logistic regression models, for factors which were potentially associated with postoperative mortality. Significant factors included increased age, male gender, extra-capsular fractures, and poor pre-fracture health and function. Variables that could be modified by preoperative medical interventions, such as surgeon or anesthesiologist expertise and the time for surgery, had no significant relationship with postoperative mortality assessed at 30 or 120 days.

The most common reasons for operative delay include the unavailability of the operating room and/or surgical personnel (administrative), and investigation and stabilization of the patient’s preoperative medical condition. Moreover, because traction table is out of order in the biggest hospital of the province (Lady Reading Hospital Peshawar) for the last more than six months as a result of which we got a lot number of referrals leading to increase in the waiting time to surgery. While stabilization of the patients with medical co-morbidities is understandably a necessity, it should be done in such a way to optimize the time to surgery. Operational delays, on the other hand, should be addressed differently, using management tool such as fast tracks, increase operating time and incentives to surgical and anesthesics teams to meet targets.

Our study has several potential limitations due to small sample size. Time to surgery was computed based on the dates of injury and surgery on interview from the patient or accompanying attendant which might introduce the recall bias. We lacked data on socio-economic and functional status prior to hip fracture. These factors may affect patient selection for surgery, time to surgery and outcome of these elderly patients. However, Prospective study design adds to the strength of our study.

CONCLUSION

There should not be an unnecessary delay in hip fracture surgery in order to decrease the risk of early mortality. Every effort should be made to optimize elderly hip fracture patients for surgery as soon as possible to be operated with in first 48 hours (2days).

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INTRODUCTION

The medicolegal system according to which unnatural death is investigated varies in different countries. In United States of America the medicolegal system is Medical Examiner System. In United Kingdom of Great Britain it is Coroner System. In Russia it is Continental System whereas in Pakistan it is Modified Continental System according to which the in charge of the dead body is police who on behalf of the state investigate all sudden suspicious deaths. The aim of these investigations is to find out any foul play to avoid miscarriage of justice. As dead body is property of the state so no consent of anyone is required for medicolegal investigation. If the concerned station head officer of police (SHO) is satisfied that death is natural so he has the authority to issue orders for burial but if he is not satisfied then he can ask for medicolegal autopsy which is conducted by authorized medical officer on written request of police. Autopsy report is a legal document which helps the court in furthering justice. In this study postmortem examination of all cases of suspicious deaths referred both from rural as well as from urban police stations from 1st January 2013 to 23rd May 2013 was done. A purpose built performa was designed for this particular study and findings were recorded.

Un-natural death can be prevented by better control of lethal weapons like fire arm and explosives, by educating people specially with the religious injunctions.

RESULTS

Out of 400 cases 285 deaths (71%) were due to firearm injuries. Out of 400 cases 39 were (10%) due to road traffic accidents. Out of total 400 cases 25 unnatural deaths (6%) were due to bomb blast injuries. Asphyxial deaths were 4% & blunt trauma, stab wounds, burns, anaphylactic shock, renal shut down or addiction were the cause in 5% cases and on autopsy no cause of death was determined in 4% unnatural deaths.

DISCUSSION

The results of our study are comparable to the studies done previously on this topic in Peshawar, KPK, Pakistan. The causes of unnatural deaths are violence & poisoning and both are preventable. In our study the cause of death remained undetermined in 16 out of 400 cases. The specimens of these 16 cases were sent to forensic science laboratory and in 3 out of 16 poisons were detected. The death due to poisoning resembles...
more like natural death as compared to deaths due to physical violence. As the controlling authority is the police which is having less medical knowledge so most of un natural deaths due to poisoning can be settled by police without autopsy. More over in our set up due to obvious reasons people avoid autopsy of their near and dear ones. People avoid police and also dislike involvement in lengthy and difficult court procedures so the actual number of unnatural deaths is more than the cases referred for autopsy. One of the aims of autopsy is personal identification & in our study out of 400 autopsies 19 dead bodies (4%) remained unidentified and these were cases who were involved in bomb blast explosions. Most of the victims were in age group 20 to 40 years and out of total 400 cases 357 were male and it accounts 89% of total unnatural deaths. Most of autopsy cases 266 out of 400 (66%) were from rural areas. The reason for this may be less education, less jobs, difficult life and more over people try to solve their social problems by themselves by avoiding lengthy legal procedures.

CONCLUSION

The unnatural deaths due to firearm injuries were 71% and 10% were due to road traffic accidents. In our study 6% unnatural deaths were due to bomb blast injuries and 4% were asphyxial deaths. All these deaths can be prevented by better control on lethal weapons like firearms, by improving infra structure and social justice. Above all education especially religious education is the solution to the problem.

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Sugar! The Silent Killer - A Bitter Truth
S. Farheen Toor M.A

Long long ago there was a time when honey was used as the only sweetener, popularly known as liquid gold. Traders used to call it SACCHARUM while travelling to China and Middle East in ancient times. In 7th century the Chinese started cultivating sugarcane on limited scale but the Arabs did it on a larger scale and loved their most popular sweetie products like Baklava, Halava, Bashousa cake and Pistachio Mafruka. In 12th century, the Crusaders took this ‘sweet salt’ back home as an expensive epicure- a refined taste for food, only meant for wealthy and rich people. In 18th century sugar was considered a luxury in Europe but in 19th century it became a necessity so much so they started searching a cheap variety of sugar especially in Caribbean Islands and West Indies. In 1792 an uprising in France and Britain led to a dramatic rise of sugar price, which motivated Lt. J. Paterson of East Indian Company to grow sugarcane in Bihar (India) and established a number of sugar factories there, in order to supply cheap sugar to Britain.

Sugar exists under several Pseudonyms in nature and these are:
2. Fructose: in fruits, vegetable roots and cane sugar.
5. Lactose: in milk.

Sugar manufactured from refined carbohydrates wreaks havoc in the body. If it is not burnt quickly it turns into fat. According to medical experts excessive sugar is like a drug that makes the brain sluggish, accumulates at the belly, causes Diabetes Mellitus early tooth decay, dementia in old people apart from feeding the cancer cells. Experts say that it is 8 times addictive as compared to cocaine and induces great craving for it. We purchase jams, jellies, sweet drinks, chocolates, ice-cream, cold coffees and candies daily along with our dinners and lunches especially in marriages and functions, as a routine fashion. We must know that a normal can of carbonated soda drink contains up to 10 teaspoonful of normal sugar, which is unbelievable, but it remains a fact.

In order to keep us smart and well-trimmed, we use above products in non-sugary form labeled as ‘sugar free, ‘no sugar added’ and ‘diet’, they must know that it contains ‘aspartame’ a chemical alternate to sugar. If taken for a longer period it may lead to epilepsy, birth defects and even brain cancer.

Mind you! Diabetes and Obesity is a growing concern in Pakistan and according to latest study, one in 10 Pakistani, suffers from Diabetes. 1,20,000 people loose life every year in Pakistan. There are around 6.7 million people with diagnosed Diabetes and the same number is at high risk of becoming diabetics who are unaware of their disease. It is a chronic, debilitating disorder which affects almost all the essential organs of the body like heart, kidney, brain and muscles apart from cataract and blindness in the long run with increased financial burden on the families.

A word of advice, we must avoid consumption of fast and fatty foods, excessive eating, sugary drinks with our foods. Take a balanced diet with normal (unsweetened) water, adopt a healthy life style with daily exercise/walk, we assure you that we can live a healthy and a meaningful life.
Postgraduate Intensive Training

RAWALPINDI MEDICAL COLLEGE & ALLIED HOSPITALS
ARE GOING AHEAD TO SET UP INFECTIOUS DISEASES DEPARTMENT & CRITICAL CARE SYSTEM

In view of the alarming incidence of infectious diseases including Dengi fever and skin disorders reported to Allied Hospitals of Rawalpindi Medical College i.e., Holy Family Hospital, BB Hospital and DHQ Hospital during 2014, Prof. Muhammad Umar, Principal Rawalpindi Medical College & Chief Executive of Allied Hospitals, is very keen for the welfare of the patients and approached the Govt. of Punjab to help him to establish the Infectious Diseases Departments and to upgrade the ICU units to the state-of-art Critical Care System. The Health Department has released Rs. 80 million in the first instance to establish the above Departments first in Holy Family Hospital, Rawalpindi followed by in other two hospitals.

In fact, these hospitals are overburdened with infectious diseases due to the presence of many cattle pens around the city. Presently the trained clinical staff of these hospitals are providing full care to these patients. However, the Govt. of Punjab has been requested to provide more funds for the extensions of these services.

In the mean time, the administration of Allied hospitals has upgraded the Intensive Care Units as advised by the College of Physicians & Surgeons, Pakistan to highly sophisticated Critical Care System, in order to provide effective health care facilities as well as to train the young doctors for postgraduate Fellowship (FCPS).

Apart from the Government, the Rawalian doctors (old students of RMC) are contributing financially for the establishment of above Departments which is a dire need in the present scenario. Moreover, they are also providing the critical care help to the needy patients through video lines which is an adjunctive step in the rehabilitation of critically sick patients........

(Dr. Jahanzeb Durrani - A Rawalian)

Letter To The Editor

Dear Prof. Durrani

With a great interest I have read the Journal and specifically your Editorial on the modern hot topic-AMD, reflected as usual everything under your authorship, the cutting-edge scientific information and prospective of future noninvasive therapies with natural herbs. Wishing you continued fruitful work and prosperity.

Best regards,

Prof. Dr. Marianne Shahsuvrayan
MD, Ph.D, D.Sc (Medicine), Professor of Ophthalmology
8th Hospital, Yerevan State Medical University, Republic of Armenia.

My Dear Prof. Durrani

Thank you very much for sending a copy of your recent publication, Why should I become a Doctor. With your rich experience as a faculty member, your advice shall definitely help youngsters in making their mind about future career. I am asking our Director of Information Services to get required copies for our various information resource centres in order to let our students benefit from it. May Allah accept your efforts and reward you for your contribution.

Best regards,

Prof. Dr. Anis Ahmad
Vice Chancellor, Riphah International Unicrsity, Rawalpindi.

My Dear Prof. Durrani

I am extremely honored to receive your gifted a guide book title “Why I Should Become A Doctor? A comprehensive guide, our library users would certainly benefit from it.

Muhammad Haroon
Manager Library
Rehman Medical College, Hayatabad Peshawar