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ORIGINAL ARTICLE

VISUAL OUTCOME FOLLOWING SURGERY OF TRAUMATIC CATARACT

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ABSTRACT: AIM: To assess the visual outcome following traumatic cataract surgery and to assess the predictors of better visual outcome **STUDY SETUP AND DESIGN:** This is a prospective case study made on consecutive series of patients with traumatic cataract who underwent surgery between November 2012 to July 2013 at Government Regional eye hospital, Andhra medical college, Visakhapatnam. **METHODS:** Study was made on 100 eyes of 100 patients. Patient's detailed history, clinical features, pre- operative examination, surgical intervention, post-operative visual acuity and follow up refraction changes record. **RESULTS:** In total, 100 eyes of 100 patients were included. Out of 100 cases, 78 cases (78%) were males and 22 cases (22%) were females. Good visual acuity of 6/6 – 6/18 was achieved by 70 cases, (70%) out of which 58 cases (58%) are closed globe type and 12 cases (12%) are open globe type. 4 cases (4%) achieved visual acuity of 6/24 to 6/609.(1) 26 cases (26%) achieved a poor visual outcome of <6/60 out of which 22 cases (22%) are open globe type and 4 cases 4% are closed globe type.(2) **CONCLUSIONS:** Closed globe injury has a favorable prognosis for a satisfactory better that 6/18 visual recovery after surgical management of traumatic cataract, compared to open globe type. In case of open globe injury.(3) prompt wound repair, proper use of drugs to reduce infection, inflammation followed by timely surgery may improve the visual prognosis if there is no other sight threatening injury.

KEYWORDS: Traumatic cataract, visual outcome, open globe injury, closed globe injury.

INTRODUCTION: Trauma is an important cause of Mono-ocular blindness in the developing world. Any strategy or prevention requires knowledge of cause of injury which may enable prevention of Injury. In this era of Heavy traffic the incidence of eye trauma is increasing. Blindness due to eye trauma is mostly a preventable burden.

The aetiology of ocular injury is likely to differ from that in rural & urban areas. Ocular Trauma may cause cataract. The post-operative visual outcome is different from senile cataract because of injury to other ocular tissues.

AIM: The aim is to assess visual outcome following cataract surgery of traumatic cataract and assess the predictors of better visual prognosis.

MATERIALS & METHODS: Study Settings and Design: This is a prospective study of 100 eyes of patients with traumatic cataract who are admitted to government regional eye hospital, Visakhapatnam between November 2012 to July 2013.

Inclusion Criteria: Both adult and pediatric cases with decreased visual acuity due to traumatic cataract.

Exclusion Criteria: Patients with other causes of loss of vision like retinal detachment, Glaucoma, Vitreous Haemorrhage etc., at presentation:

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- The patient's first visit to the Hospital varied from the first day of trauma to 2 months after Trauma.
- Detailed history of the following taken:
- Mode of injury, onset and progression of symptoms.
- Details of treatment taken if any are recorded.
- Past and personal history recorded.
- Visual acuity checked with snellen's chart.
- Detailed anterior segment examination was done with slit lamp microscope.
- Posterior segment examination was done with indirect ophthalmoscope for partially opaque cataracts.
- B.S can was done in all cases of traumatic cataract to evaluate the posterior segment.
- In patients undergoing corneal and/or sclera wound repair, Traumatic cataract was managed as second procedure.
- In patients with no other injuries, traumatic cataract was managed as a primary procedure.
- Patients were treated with topical and systemic antibiotics and cycloplegics.
- Patients with history of ocular injury with vegetative matter were prescribed prophylactic topical antifungal antibiotics.
- Topical steroids were given to reduce inflammation after 72 hrs. Of starting antibiotic. Steroids were given to suppress severe inflammation after control of infection.
- Systemic steroids were prescribed to suppress severe inflammation after acute inflammation subsides according to indication.
- Vitamin B complex and C supplements, and Vitamin A supplements if necessary promote better healing.
- Dietary advice and hygiene explained.
- Patients were admitted to the hospital in acute phase.
- Follow up visits weekly until inflammation is reduced.
- Surgery is done soon after the inflammation subsides.
- Small incision cataract surgery was done and posterior chamber intra ocular lens implanted. Phakoemulsification with PCIOL was done in some cases.
- Lensectomy and vitrectomy performed as per indication in selected cases only.
- The patients are followed up for the first three days and then weekly for the next six weeks.
- At every follow up visit, anterior segment examination was done with slit lamp microscope.
- Refraction was done at the end of 6 weeks post operatively. Best corrected visual acuity was checked and spectacles prescribed.
- Eyes with better than 6/18 vision are graded to have good vision.

RESULTS:

- Study was conducted on 100 eyes of patients with traumatic cataract out of which: Male = 78 cases.

  Female = 22 cases
- The age of the patients varied from 3 years to 55 years.

  Adult = 76 cases

  Paediatric = 24 cases

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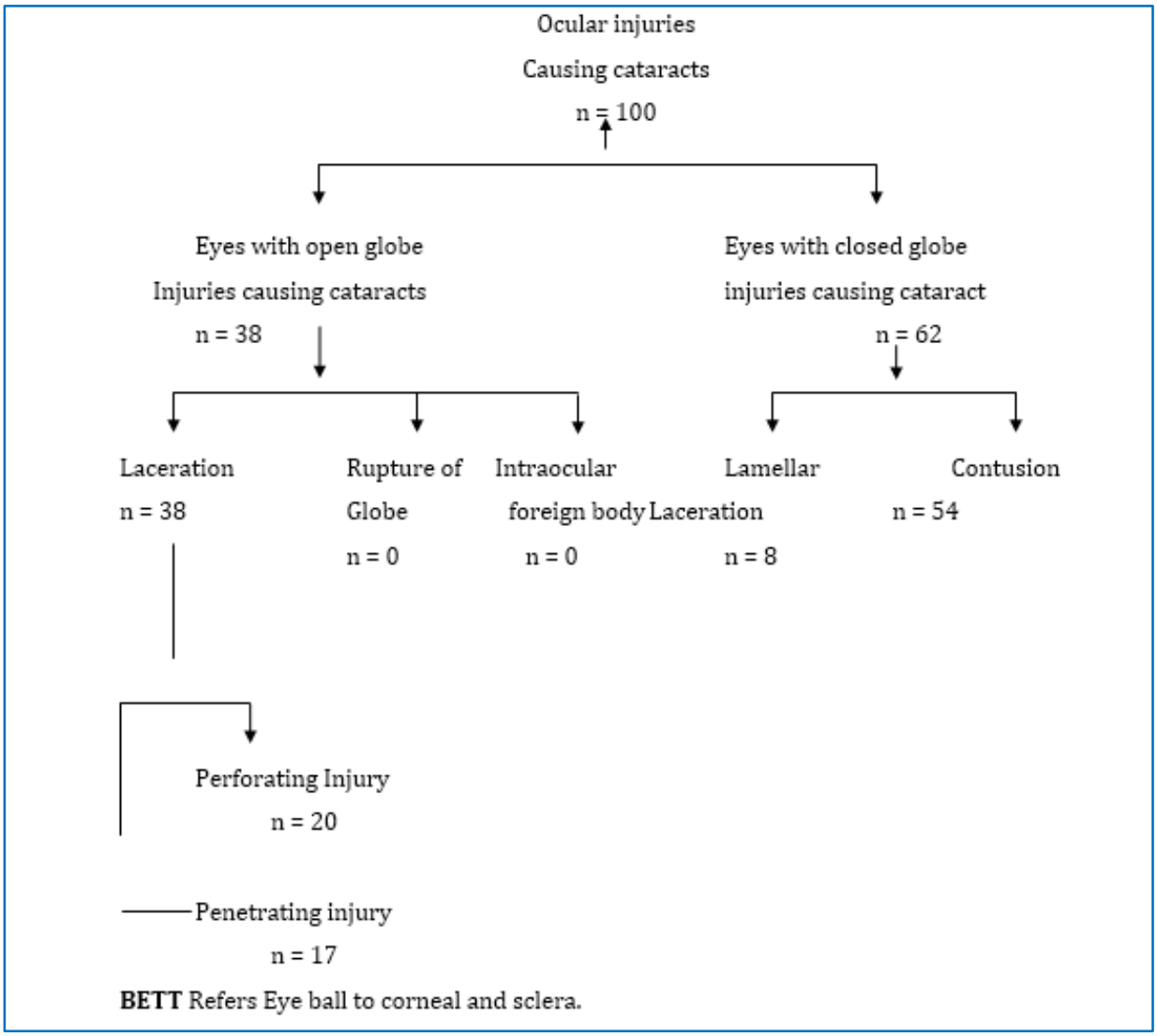
Distribution Of Trauma According To Birmingham Eye Trauma Terminology.[4]:



Pre-operative visual acuity	Post-operative visual acuity		
	<5/60	**6/60 To 6/24**	**6/18 To 6/6**
<1/60	**26**	**-**	**12**
1/60 to 3/60	**--**	**-**	**58**
6/60 to 6/24	**-**	**4**	**-**
6/18 to 6/6	**-**	**--**	**--**
Total	**26**	**4**	**70**

Table 1: Pre – Operative and Post – Operative Visual Acuity (Best Corrected)

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Post-Operative Visual Acuity	Total Cases Percentage		
6/6 to 6/18	70	70%	
6/24 to 6/60	4	4%	
< 6/60	26	26%	
Total	**100**	**100%**	

Table 2: Post–Operative Visual Outcome Following Traumatic Cataract Surgery.[5] (After 6 Weeks With Best Corrected Vision)

Post-Operative Visual Acuity	Closed Globe Type	Open Globe Percentage Type		
6/6 To 6/18	58	58%	12	12%
6/24 To 6/60	-	-%	4	4%
<6/60	4	4%	22	22%
Total	**62**	**62%**	**38**	**38%**

Table 3: Post–Operative Visual Outcome Following Traumatic Cataract Surgery (After 6 Weeks With Best Corrected Vision)

DISCUSSION: Traumatic Cataract is more common in males in urban areas whereas it is common in both males and females in rural areas.

Blunt trauma without rupture of posterior capsule causes anterior sub capsular or posterior sub capsular cataract or both. After trauma there is fluid influx causing swelling of lens fibres and swollen lens, The anterior sub capsular regions whitens and flower pattern rosette opacity may develop or an amorphous or punctate opacity. Vossious ring of iris pigment deposits on anterior capsule occurs due to striking of pupillary border against lens. Vossious ring is smaller than pupil.

If capsule ruptures – usually posteriorly, lens is hydrated rapidly causing white mature cataract.

Small penetrating injury causes localized opacity. Large rupture of capsule causes rapid hydration and complete opacification.

Traumatic Cataract affected one eye only in affected cases.

Fig. 1: Total mature traumatic cataract

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Total mature traumatic cataract Traumatic rosette cataract.

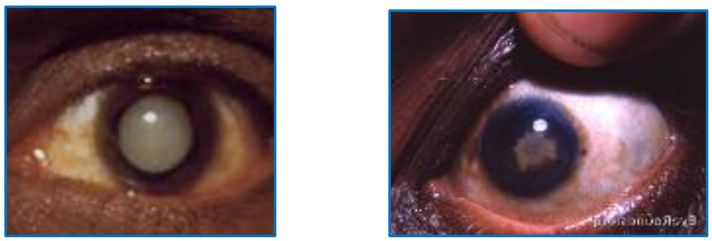

Fig. 2: Traumatic rosette cataract

Reason for poor vision	No. of cases	%
Inflammation	2	2%
Infection	2	2%
Corneal Scar	4	4%
Lost to follow up	4	4%
Glaucoma	2	2%
Delayed 1st visit for treatment after trauma	2	2%
Irregular use of post-operative drugs	4	4%
Others	6	6%
Total	**26**	**26%**

Table 4: Reasons For Poor Post-Operative Vision < 6/60

Cause of injury	No. of cases	%
Wooden stick (Pencil, stick etc.)	40	40%
Vegetative matter (Branch, Thorn etc.)	16	16%
Road Traffic Accident	16	16%
Ball	8	8%
Stone	8	8%
Others	16	16%
Total	**100**	**100%**

Table 5: Cause of Injury

Activity	No. of cases	%
Job work	26	26%
Playing	28	28%
On Road	20	20%
House work	10	10%
Others	16	16%
Total	**100**	**100%**

Table 6: Activity During Injury

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Preventional Aspects of Ocular Trauma:

1. Education of children regarding possible eye hurt with pencil, pen, compass etc.
2. Face guard when playing cricket.
3. Education to be alert to the incoming ball to avoid hurt.
4. To avoid alcohol before driving and cell phone while driving.
5. To avoid high speed driving and follow traffic rules.
6. To be careful when handling chemicals.
7. Take measures to save eyes when picking sticks, sugarcane, when moving among shrubs and while in the fields etc.

CONCLUSION:

- Closed globe injury has a favourable prognosis for a satisfactory better than 6/18 visual recovery after surgical management of traumatic cataract, compared to open globe type.
- In case of open globe injury, prompt wound repair, proper use of drugs to reduce infection, inflammation followed by timely surgery may improve the visual prognosis if there is no other sight threatening injury.
- Earlier the treatment taken, regular the treatment used lesser the complication rate and better the prognosis for a good visual outcome.

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