

A Case Report on post Traumatic Angle Recession

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Abstract: A 7 yr old boy presented with diminution of vision in left eye since 6 months , with an h/o ocular trauma 1 yr back. Patients history suggestive of some procedure done on the left eye after 10 days of trauma and inability to see, present clinical examination shows a paracentesis indicating an hyphema drainage procedure done in past, and a 0.9 cupping, suggestive of an acute rise of IOP immediate to the traumatic hyphema. Special investigations like anterior segment oct and ultrasound biomicroscopy suggestive of angle recession.

As the patient presented with intraocular pressure within normal range along with a significant cataract, a procedure of lens extraction along with posterior chamber intraocular lens implantation was carried out. This case should undergo regular follow ups for assessment of intraocular pressures and gonioscopy with serial fundus photographs for documentation of progression if any as these cases of angle recession, there are higher chances of progression to glaucoma.

Keywords: Angle recession, cataract , intraocular pressure, gonioscopy, glaucoma

I. Introduction

This a case report of a post traumatic angle recession with significant 0.9 cupping and an anterior subcapsular cataract at presentation in a 7 yr old boy. Anterior segment OCT and Ultrasound biomicroscopy are good tools to demonstrate angle recession. Though intraocular pressures at presentation were within normal limits such cases should undergo a regular and long term follow up , as there are high chances of development of chronic glaucoma in these cases.

II. Case history

2.1 History of presenting illness : 7 yr old male presented to ophthalmology out patient department with history of gradual progressive diminution of vision in left eye (LE) since 6 months. No other ocular complaint at present.

2.2 Past history : Fire cracker injury to LE 1 year back, with an immediate painful red eye and diminution of vision. Patient gives history suggestive of an anterior chamber collection of blood and some procedure done on the left eye 10 days post trauma , exact history of management cannot be elicited, after which patient was asymptomatic for a few months , and later developed diminution of vision which was gradual, progressive , painless and has reached the present state.

2.3 History of systemic illness : **NIL**

2.4 History of blood dyscrasis : **NIL**

2.5 History of congenital diseases : **NIL**

2.6 Family history : Insignificant

III. Examination

A detailed ocular examination of visual acuity, slit lamp biomicroscopy, Applanation tonometry, funduscopy, and gonioscopy was done. Special Investigations like ultrasound biomicroscopy , Anterior segment OCT and Pachymetry was carried out . Patient did not cooperate for standard automated perimetry for assement of visual fields.

3.1 General examination : Patient is conscious , cooperative well oriented to time place and person. Vitals stable .

3.2 Ocular examination :

- Forehead and headposture : Normal
- No facial asymmetry.

	RIGHT EYE	LEFT EYE
1. Visual Acuity	6/6	FC @ 1m
2. Slit lamp examination	Within normal limits	Anterior subcapsular cataract Mid dilated sluggishly reacting pupil. 2 Paracentesis marks seen.
3. Fundus	Media : clear. Disc : 0.6 cupping, well defined margins , circular. Macula and blood vessels : Within normal limits Foveal reflex : +	Media : Hazy, vitritis Disc : 0.9 cupping with temporal disc palour. Macula and blood vessels : Within normal limits Foveal reflex : +
4. Applanation tonometry	12mm of hg.	14mm of hg.
5. Gonioscopy	Open angles	Open angles with angle recession temporally.
6. Pachymetry	526 microns	520 micron

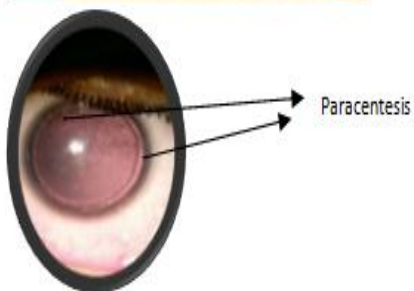
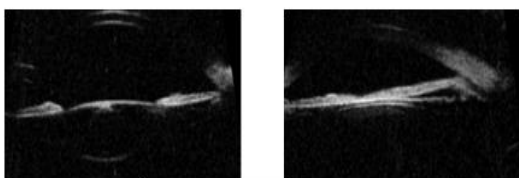
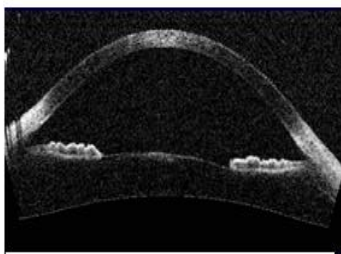


Fig LE fundus showing a significant 0.9 cupping and



Ultrasound Biomicroscopy

IMPRESSION: Left side large angle recession noted from 2 to 6.0 clock position. There is marked zonular stretching from 3 to 6.0 clock position.



Anterior segment Oct (ASOCT)

Both Anterior segment Oct (ASOCT) and Ultrasound biomicroscopy (UBM) are useful for cross-sectional imaging of the anterior segment and the AC angle. However in ASOCT structures behind the iris cannot be visualized where as in UBM the images of iris, ciliary body , zonules , peripheral lens , status of posterior capsule can be obtained. However UBM is more uncomfortable to the patient and requires a highly skilled operator, and provides a limited scan width.

	ASOCT	UBM
Technology	Optical	Ultrasound
Resolution	15microns	50microns
Longest Scan Dimensions	16x16 Mm	5x5mm
Contact With Eye	No	Probe Does Not Contact Eye Directly But Requires Immersion Bath
Real Time Imaging	Yes	Yes
Imaging Posterior To Iris	No	Yes
Quantitative Measurement	Yes	Yes

IV. Management

After eliciting the complete history and after all ocular examinations including slit lamp biomicroscopy, and special investigations like Anterior segment OCT and ultrasound biomicroscopy the condition was diagnosed as Anterior subcapsular cataract with angle recession .As it was a visually significant cataract along with intraocular pressures within normal range patient was posted for left eye lens extraction and Posterior chamber intraocular lens implantation under general anesthesia under guarded visual prognosis.



LEFT EYE	
Visual acuity unaided	6/18 , improving to 6/9p
Slit lamp examination	<ul style="list-style-type: none"> • Clear cornea, clear corneal incision seen temporally. • Well formed and quite AC • Posterior chamber intraocular lens insitu, in bag.
Applanation tonometry	• 16mm of hg
Fundus	Media : Clear Disc :0.9 cupping with temporal disc palour. Macula and blood vessels : Within normal limits Foveal reflex : +

Fig . Post cataract surgery day 1

V. Discussion

Angle recession refers to a tear between circular and longitudinal fibers of ciliary body. Angle recession was first described by Collins in 1892¹In this case it has occurred as a sequelae to ocular trauma(fire cracker injury) along with an anterior subcapsular cataract. Anterior chamber hyphema causes outflow obstruction of trabecular meshwork ,primarily with RBCs , however in some case pupillary block via a large clot may contribute to elevated IOP,causing a transient ischemic nerve damage which has lead to a significant 0.9 cupping .Girkin,etal. Used the US Eye injury Registry to demonstrate that 3.39% of people go to develop angle recession glaucoma (ARG) at 6 months following blunt ocular trauma². A 10 year prospective study of 31 eyes by Kaufmin andTolpin reported that 6% with angle recession will go on to develop glaucoma³.

Recession of greater than 180 degree associated with 4-9% risk of incidence of glaucoma. and angles with greater than 240 degree are at highest risk of chronic glaucoma.⁴Other risk factors for progression to glaucoma include,Chronically elevated IOP,poor initial visual aqulty,lens injury and hyphema.⁵

Elevation of IOP from angle recession demonstrates a bimodal pattern, glaucoma occurs either within first yr or after 10 yrs as described by Blanton.No racial predilection exist. No gender predilection exists.

VI. Conclusion

As the patient had raised IOP post anterior chamber hyphema immediately post trauma,leading to a significant 0.9 cupping,this should be taken as a lesson and such cases of post traumatic hyphemas should be immediately taken up for drainage. An IOP of 25 mmhg or more for 5 days with a total hyphema or an IOP of 60

mmhg or more for 2 days are indications for surgery, former to prevent corneal blood staining and later to prevent optic atrophy⁶. Also any hyphema failing to resolve to less than 50% of the anterior chamber volume by 8 days despite medical management is also an indication due to peripheral anterior synechie formation. Indications of early intervention : sickle cell disease or sickle cell trait (IOP .25mmhg for 24 hrs), haemophilias, patients with existing glaucomas, children with more than half chamber hyphemas with risk of developing amblyopia.

Multiple methods of surgical treatments have been suggested : Ac wash outs , clot removal via vitrectomy instrumentation or irrigation aspiration instrumentations and trabeculectomies with associated iridotomies have been carried out according to need, comfort and experience of the surgeon⁶ This patient had a delay in the intervention (10 days post trauma) , possible reasons for delay in such cases can be delay in fitness for administration of General anesthesia , difficulty in monitoring IOP in a young child , patient on medical management (e.g cycloplegics, systemic or topical steroids, antifibrinolytics, analgesics, anti glaucoma medication) for a longer wait and watch period . As this patient presented with IOP within normal range , a plain cataract extraction for early visual rehabilitation and amblyopia prevention is carried out , this patient also has an angle recession component therefore he should undergo a regular yearly follow up for assessment of intraocular pressures and gonioscopy with serial fundus photographs for documentation of progression if any, as there is a documented high risk of development of chronic glaucomas in the long run .

Acknowledgement

None

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