



## MANAGEMENT OF TRAUMATIC HYPHAEMA IN PATIENTS ATTENDING A TERTIARY CARE CENTRE IN KASHMIR

**Dr. Haziqa Zahoor\***

Postgraduate, Department of Ophthalmology, Government Medical College, Srinagar \*Corresponding Author

**Dr. Afroz Khan**

Professor, Department of Ophthalmology, Government Medical College, Srinagar

### ABSTRACT

**Background:** Hyphaema or blood in anterior chamber is a common complication of blunt or penetrating injury to eye and can result in vision threatening complications. **Aim:** To evaluate the proportion of patients requiring medical and surgical intervention following traumatic hyphaema due to blunt ocular trauma. **Methods:** This study was conducted on 80 patients of traumatic hyphaema attending the Department of Ophthalmology, Government Medical College, Srinagar from September 2019 to February 2021. Patients  $\geq 10$  years of age traumatic hyphaema due to blunt ocular trauma were included in the study. Patients with penetrating ocular trauma, those with hyphaema due to causes such as iris melanoma, rubeosis iridis, patients with hyphaema following intra-ocular surgery and patients on anticoagulant medications were excluded from the study. Proper history was taken from all the patients and a detailed ocular examination was done including grading of hyphaema using slit lamp. **Results:** Our study found mean age of study population as  $24 \pm 5$  years. There were 57 (71%) male patients and 23 (29%) female patients. 42.5% patients had grade-1 hyphaema, 40% patients had grade-2 hyphaema, 13.75% patients had grade-3 hyphaema and 3.75% patients had grade-4 hyphaema. Medical management was required in 76 (95%) patients whereas surgical intervention was required in only 5% patients. **Conclusion:** Our study concluded that majority of patients with traumatic hyphaema were male with grade-1 and grade-2 hyphaema seen in majority of the patients. Most of the patients with traumatic hyphaema respond well to medical intervention. Surgical intervention is required in only small proportion of cases.

**KEYWORDS :** Hyphaema, ocular trauma

### INTRODUCTION

Hyphaema refers to presence of blood in anterior chamber.<sup>[1]</sup> Most common cause of traumatic hyphaema is blunt or penetrating ocular trauma. Other causes of traumatic hyphaema include uveitis, neoplasm, juvenile xanthogranuloma, coagulopathies and iatrogenic injury following intraocular surgery. Proper management of hyphaema is important because even small amount of blood in anterior chamber can lead to complications like rebleed, corneal blood staining and glaucoma.<sup>[2]</sup> In traumatic hyphaema, bleeding usually occurs from tears in major arterial circle and branches of the ciliary body.<sup>[3]</sup> Management of traumatic hyphaema includes supportive care in the form of eye protection with plastic or metal shields, limitation of physical activity and elevation of head end of bed at 30-45 degree angle that helps in more rapid blood resorption.<sup>[4,5]</sup> Medical management includes use of topical steroids which have anti-inflammatory action and help in stabilizing the blood ocular barrier<sup>[6]</sup>, cycloplegics which help in relaxing ciliary spasm and help in relieving the pain.<sup>[7]</sup> In addition, in patients with intraocular pressure (IOP) more than 25 mmHg, topical beta-blockers, alpha-agonists and carbonic anhydrase inhibitors are usually the first line of treatment.<sup>[8]</sup> In patients with acute rise of IOP, oral glycerine 50% as well as intravenous mannitol 20% are usually the mainstay of treatment.<sup>[9]</sup> Antifibrinolytic agents are used to reduce the risk of rebleeding by slowing down the resorption of blood clot.<sup>[10]</sup> Surgical management is indicated in patients with IOP elevation  $>50$  mmHg for 5 days,  $>35$  mmHg for 7 days to prevent optic nerve damage,  $>25$  mmHg for 5 days in cases of total or near total hyphaema to prevent corneal blood staining or large stagnant clots persisting for  $\geq 10$  days to prevent anterior synechiae formation.<sup>[11]</sup> Various options for surgical management include paracentesis or anterior chamber washout, expression and limbal delivery for clotted hyphaema, bimanual cutting/ aspiration for clotted hyphaema.<sup>[3,12,13]</sup>

### METHODS:

A hospital based prospective study was conducted on 80 patients of traumatic hyphaema (due to blunt ocular trauma) attending the Department of Ophthalmology, Government

Medical College, Srinagar over a period of one and a half year from September 2019 to February 2021 after obtaining ethical clearance from Institutional Ethical Committee. Patients  $\geq 10$  years of age were included in the study. Patients with penetrating ocular trauma, patients with hyphaema due to causes such as rubeosis iridis, iris melanoma, patients with hyphaema following intraocular surgeries, patients on anticoagulant medications were excluded from the study. Proper history was taken from all the patients and a detailed ocular examination was conducted which included uncorrected visual acuity (UCVA), best corrected visual acuity (BCVA), slit lamp examination to grade the level of hyphaema and to identify other injuries associated with blunt ocular trauma. Hyphaema was graded as follows:

- Grade 1: blood occupying less than  $1/3^{\text{rd}}$  of anterior chamber
- Grade 2: blood occupying  $1/3^{\text{rd}}$  to  $1/2$  of anterior chamber
- Grade 3: blood occupying  $1/2$  to less than total of anterior chamber
- Grade 4: blood occupying whole of anterior chamber

### OBSERVATIONS AND RESULTS:

In our study, mean age of study population was  $24 \pm 5$  years with age group ranging from 11 to 65 years. There were 57 (71%) male patients and 23 (29%) female patients. Our study found 34 (42.5%) patients with grade 1 hyphaema, 32 (40%) patients with grade 2 hyphaema, 11 (13.75%) patients with grade 3 hyphaema and 3 (3.75%) patients with grade 4 hyphaema (Table 1).

In our study 76 (95%) patients were managed through medical treatment only. Surgical intervention in the form of paracentesis was required in only 4 (5%) cases.

Table 1: Distribution of study eyes with respect to grade of hyphaema

Grade of hyphaema	No. of patients (n)	Percentage (%)
Grade 1	34	42.5
Grade 2	32	40
Grade 3	11	13.75
Grade 4	3	3.75
Total	80	100

Table 2: Distribution of cases with respect to treatment modality received

No. of patients	Medical treatment	Surgical treatment
80	76 (95%)	4 (5%)

**DISCUSSION:**

Traumatic hyphaema is a well recognized ocular condition that can lead to vision threatening sequel if not treated properly.<sup>[14]</sup> Even small amount of blood in anterior chamber can lead to complications associated with traumatic hyphaema.<sup>[2]</sup> Management of traumatic hyphaema is individualized based on the presentation of patient and other complications associated with blunt ocular trauma.

Our study found mean age of patients as 24±5 years with majority of patients being male as compared to female. Al Ali AK et al<sup>[15]</sup> in their study found mean age of patients as 25.1 ± 13 years. Warid FAM et al<sup>[16]</sup> in their study found the mean age of patients as 24.4 years. Male preponderance was also seen by studies conducted by Edward WC et al<sup>[17]</sup> and NG CS et al.<sup>[18]</sup> In our study, majority of patients had smaller grade of hyphaema at the time of presentation which is consistent with the study conducted by Ulagantheran V et al<sup>[19]</sup> and Nanda PK et al.<sup>[20]</sup> Patients with smaller grade of hyphaema were treated as outpatients and patients with higher grade of hyphaema were treated as in-patients. Majority of patients in our study responded well to medical treatment only and surgical treatment was required in only a small minority of cases who did not respond to medical therapy. Medical treatment included prednisolone acetate 1% eyedrops or dexamethasone sodium phosphate 0.1% eyedrops 4 times a day for 1 week followed by a tapering schedule. Cycloplegics (atropine sulphate 1% or homatropine eyedrops 2%) were prescribed to relieve ciliary spasm. Patients with elevated IOP also received topical anti-glaucoma medications and patients with acute rise of IOP were treated with hyperosmotic agents as well. Our study was consistent with the study conducted by Macsai M<sup>[21]</sup> and Chuka OM, Obizoba OL<sup>[22]</sup> in this regard.

**CONCLUSION:**

Our study concluded that majority of patients were male with smaller grades of hyphaema who responded well to medical treatment with surgical intervention being required in small proportion of cases. Proper management of hyphaema is important so as to avoid any vision threatening complications like rebleeding, corneal blood staining and glaucoma. Patients with hyphaema should be kept on long term follow-up for early identification of complications associated with it. Wearing of proper protective eye wear can help in reducing the risk of developing hyphaema while at work.

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