

## Traumatic Hyphema: A Case Series on Admitted Patients in RIMS Hospital, Imphal

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### Abstract

**Background:** Hyphema is a common sequelae following blunt trauma.

**Aims:** To determine the causes, associated ocular findings and visual acuity on presentation and at discharge in accordance with the hyphema grades on presentation.

**Materials and methods:** A case series study was carried out on admitted patients in Department of Ophthalmology, RIMS Imphal during the period of January 2015 to June 2015. The data were analysed using SPSS v 21 program.

**Results:** A total number of 15 patients were studied. The mean age of the patients was  $24.33 \pm 13$  years. There were 80% males and 20% females. Maximum eye injury occurred at home (40%) during play with toygun. Conjunctival congestion (73.33%) was seen in most patients. About 33.33% of patients presented with Grade II hyphema, Grade I and III with 26.67% each and Grade IV with 13.33%. The initial visual acuity of  $\geq 6/18$  was seen in (33.33%) and  $< 6/18$  in (66.67%). But following treatment the visual acuity of  $\geq 6/18$  was seen in (73.33%) and  $< 6/18$  in (26.67%) on discharge.

**Conclusion:** Traumatic hyphema is common in children and young adult during play. It's important to supervise and use protection during play. However early presentation and the lower grades of hyphema determines better visual outcome.

**Keywords:** Blunt trauma, hyphema, visual outcome.

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### I. Introduction

Hyphema is the accumulation of blood in the anterior chamber of the eye. The mean annual incidence of hyphema from all causes is approximately 17 per 100,000<sup>1</sup>. Clinical symptoms of hyphema include pain, photophobia, blurring of vision and restlessness. Traumatic hyphema is mostly due to blunt trauma. Blunt trauma ruptures vessels of iris stroma and ciliary body by antero-posterior compression and equatorial globe expansion, which causes stress<sup>2</sup>. In any cases of traumatic hyphema, urgent ophthalmologic consultation is mandatory as timely diagnosis and treatment can help to prevent many complications such as, increase intraocular pressure, cataract, optic nerve injury and blindness. The purpose of this study was to determine the causes, associated ocular findings and visual acuity on presentation and at discharge in accordance with the hyphema grades on presentation in the Department of Ophthalmology, RIMS, Imphal for the period of six months from January 2015 to June 2015.

### II. Materials And Methods

This was a case series study conducted for the period of six months from Jan 2015 to Jun 2015 on admitted traumatic patients at Regional Institute of Medical Sciences, Imphal. All admitted patients of blunt trauma with closed globe injury causing hyphema were included in the study. Variables included were age, sex, eye involvement, objects causing injury, location of injury, activities at the time of injury, symptoms and other ocular findings, visual acuity on admission and at discharge and grades of hyphema. The data collected were calculated and analysed using SPSS software v 21.

### III. Results

A total of 15 eyes in 15 patients were seen during the study period. This comprised 12 males (80%) and 3 females (20%). The mean age was  $24.33 \pm 13$  years. There were 8 (53.33%) right eyes and 7 (46.67%) left eyes involvement. The details of different objects responsible for blunt injury and resulted in hyphema are shown in Table (1). The highest incidence of eye injury occurred at home (40%) during play, followed by the workplace (33.33%) during work, playground (13.33%) during sports and others (13.33%) during fight. Patients mostly presented with symptoms of blurred vision (100%), redness of eye (100%) and eyeache (93.33%). In addition to hyphema there were other ocular findings (Table 2). Conjunctival congestion was seen in most patients (73.33%). Iridodialysis was seen in 33.3% of patients. One patient had lens subluxation and associated

fundus findings were macular edema (6.67%) and vitreous haemorrhage (6.67%). Fig (2) shows the visual acuity of patients on admission and at discharge. It was seen that (33.33%) of patients had visual acuity  $\geq$  6/18 and (66.67%)  $<$  6/18 on admission., whereas, (73.33%) of patients had visual acuity  $\geq$  6/18 and (26.67%)  $<$  6/18 on discharge. The most common form of hyphema in our study was Grade II , seen in 5 (33.33%) patients, Grade I in 4 (26.67%), Grade III in 4 (26.67%) and Grade IV in 2 (13.33%) as shown in fig (3) above. No surgical intervention was required in any case as all hyphema cleared up medically without any rise of IOP.

#### IV. Discussion

In this study the incidence rate of admitted traumatic hyphema patients in Regional Institute of Medical Sciences, Imphal in the period of January 2015- June 2015 was 80% in male and 20% in female (i.e. 4:1), mean age was 24.33 $\pm$ 13 yrs and the highest age frequency was in the age group of 5-15 yrs. High frequency of male gender and age group of the patients in our study correspond with the study done by Ghafari AB et al<sup>3</sup> and Cho J et al<sup>4</sup>. Males are more commonly encountered with trauma as they are more involved with outdoor activities, sports and other social activities. Our study found that right eye was most commonly injured than the left eye. Even Ulagantheran V et al<sup>5</sup> and Raju KV et al<sup>6</sup> did highlighted the same, whereas Ghafari AB et al<sup>3</sup> found the left eye was more commonly injured than the right. The majority of eye injuries occurred in the home environment<sup>7</sup>. In our study the location of injury was mostly at home which was play related and toygun accounted for 33.33% of the injuring agent. This is in congruent with studies conducted by Raju KV et al<sup>6</sup> and Ashaye AO<sup>8</sup> where most of the injuries were play related at home. However, in another study done by Al Ali AK et al<sup>9</sup> it was reported that most common trauma was at worksites with projectiles as the commonest injuring agent. Vision typically follows the severity of the hyphema itself<sup>10</sup>. In this present work, grade II hyphema was found in 33.33% of patients followed by grade I and grade III each 26.67%. The lesser grade can be due to lesser force of impact as it was mostly by toyguns. The vision on admission ranges from 6/9 (13.33%) to PL (20%). On discharge, 100% of patients having grade I and 80% of grade II had vision  $>$  6/18. Whereas 50% of grade III hyphema had vision of 6/18, but those with grade IV had vision  $<$  6/18. This compares well with the work done by Uhumwangho OM et al<sup>11</sup> and Cho J et al<sup>4</sup>. But Al Ali AK et al<sup>9</sup> found that neither a poor final visual outcome nor complications were associated with the size of the hyphema. And Rahmani B et al<sup>12</sup> were unable to show an association between the final visual outcome and the size of a hyphema. In addition to hyphema, our study also found that conjunctiva was the most affected structure (73.33%), followed by lid and adnexa (66.67%). A similar finding was noted in a study done by Pai SG et al<sup>13</sup>.

#### V. Conclusion

Hyphema is a sequelae of blunt trauma. In our study we found that majority of the patients were males and the commonest age of presentation were 5-15 years. The patients were mostly injured at home due to play related activities. The right eye was most commonly affected and eye structure mostly involved was conjunctiva, followed by lid and adnexa. Majority of patients had grade II hyphema which clears off with medical treatment. No surgical intervention was needed and (73.33%) of patients had vision  $\geq$  6/18 on discharge. This study shows that blunt trauma can be prevented by supervising during play or use of any protection at work. Also an early initial presentation for early diagnosis and treatment can help to prevent many ocular complications and better final vision after trauma.

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**Fig 1:** Grade IV hyphema

**Table 1:** Objects causing injury

Objects	Number	%
Stick	4	26.67
Badminton racket	1	6.67
Pistol	1	6.67
Stone	2	13.33
Toygun	5	33.33
Fist	1	6.67
Cricket ball	1	6.67

**Table 2:** Associated ocular findings with hyphema

OCULAR FINDINGS	NUMBER	%
Eyelid edema and ecchymosis	10	66.67
Conj. Congestion	11	73.33
SCH	7	46.67
Conj.chemosis	4	26.67
Corneal edema	9	60
Corneal abrasion	5	33.33
Hyphema	15	100
AC reaction	15	100
Iridodialysis	5	33.33
Traumatic mydriasis	7	46.67
Lens subluxation	1	6.67
Vitreous hge	1	6.67
Macular odema	1	6.67

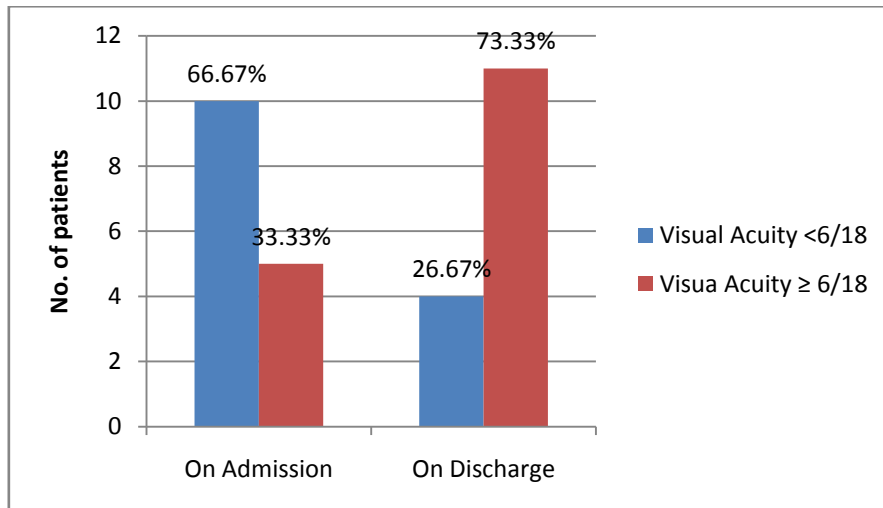


Fig 2: Visual acuity on admission and discharge in percentages

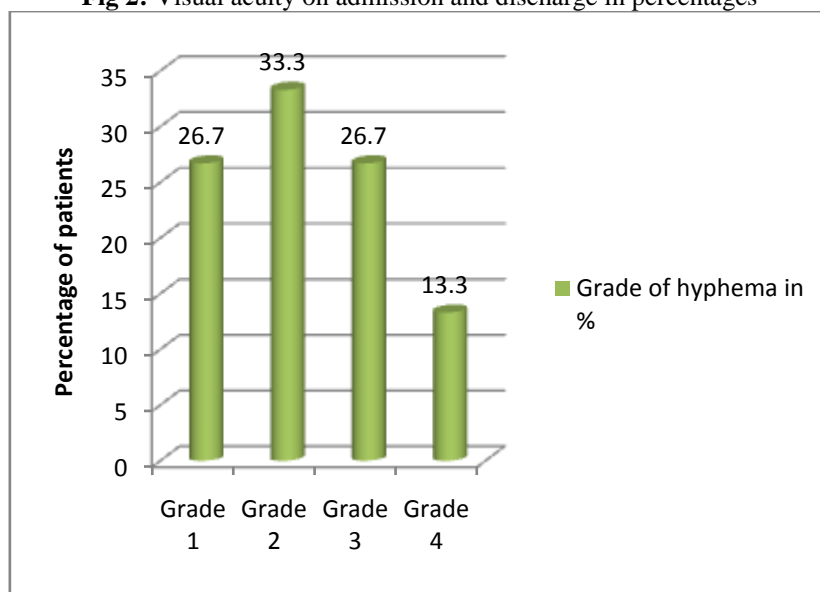


Fig 3: Grades of hyphaema in percentages