



## Acetyl Salicylic Acid Induced Hyphema During Cataract Surgery- A Case Report

**Dr. Archana S Kasbe**

Department of ophthalmology , Govt Medical College, Miraj ,  
District- Sangli Maharashtra

**Dr. Sachinkumar M Patankar**

Department of ophthalmology , Govt Medical College, Miraj ,  
District- Sangli Maharashtra

### ABSTRACT

Occurrence of hyphema during cataract surgery is a nightmare for operating surgeon . If not treated properly can lead to secondary glaucoma and poor visual outcome. Herewith we report a case of elderly female patient who developed hyphema during cataract surgery which was accentuated as she was already taking Acetyl Salicylic acid . She was well managed conservatively with good visual prognosis.

### KEYWORDS

Acetyl Salicylic Acid, Hyphema, Cataract Surgery , Tranexamic Acid

**Introduction** Hyphema describes the condition of the aqueous humor when red blood cells form a suspension in it. The choroid and the iris contain a rich complex of vessels. The pupil is outlined and controlled by a complex set of iridial muscles, sphincters, and dilators. These muscles can be ruptured by sharp and/or blunt trauma. This is a frequent source of intraocular hemorrhage (hyphema). from limbal vessels since the cornea in its healthy state is avascular. Scleral tunnel incision is subject to unpredictable hemorrhage, and the incision must be closed carefully with sutures.

### Case Report :-

A 70-year-old female presented to our department with hyphema. History given by the operating Surgeon that, patient who is a known case of IHD & Hypertension was having both eye immature cataract for which she was to be taken for Cataract surgery under Local Anesthesia. The patient didn't give history of taking tablet Acetyl Salicylic Acid which, she had consumed from the day of Surgery itself. Before surgery her B.P. was 150/90 and other investigations were within Normal limit. Intraoperative during making of side port the blade touch the periphery of IRIS and its started to bleed. Inspite of air tamponade and Visco tamponade the bleeding didn't stop so the surgeon had to close the incision & stop the surgery by putting a large air bubble in anterior chamber so as to act like a tamponade. Patient's blood pressure was 160/100 post operatively & with physician consultaion her anti hypertensive treatment was stepped up. Injection Tranexamic acid 500mg was given. Patient put in propped up position. Tab. Diamox 250mg and Betaxalol eye drops, topical steroids , topical cycloplegics were started.

Examianation reveled lid normal conjunctival congestion was present. Cornea was blood stained and half of anterior chamber was filled with blood hyphema. Intraocular pressure was normal. Other details could not be seen. Patient's platelet count, bleeding time and clotting time were within normal limit. Next day patients B.P. was well controlled with anterior chamber showing only 2mm of Hyphema .Again in the evening the anterior chamber was filled with blood. So dose of tranexamic acid injection was repeated in the evening. On third day it started to resolve. For five days patient was admitted and given Tranexamic Acid orally. On fifth day patient's anterior segment was clear. On fifth day, patient was discharged.

After 1 month, she was again reoperated for cataract surgery with due precaution of stopping of Acetyl Salicylic Acid for

5 days. Surgery was uneventful with post operative vision of 6/12 on day 1.

**Discussion:-** Postinjury accumulation of blood in the anterior chamber is one of the most challenging clinical problems encountered by the ophthalmologist. Even a small hyphema can be a sign of major intraocular trauma with associated damage to vascular and other intraocular tissues.

The lack of an ideal therapeutic program, the potential for secondary hemorrhage, and the secondary onset of glaucoma all threaten to turn an eye with an initially good visual prognosis into a complex therapeutic problem with a poor final visual result.

### The following clinical grading system for traumatic macrohyphemas is preferred:

Grade 1 - Layered blood occupying less than one third of the anterior chamber

Grade 2 - Blood filling one third to one half of the anterior chamber

Grade 3 - Layered blood filling one half to less than total of the anterior chamber

Grade 4 - Total clotted blood, often referred to as blackball or 8-ball hyphema.

The usual duration of an uncomplicated hyphema is 5-6 days. The mean duration of elevated intraocular pressure is 6 days.

### Hyphema can result from intraocular surgery, as follows:

Intraoperative bleeding: Ciliary body or iris injury may occur during a peripheral iridectomy, cataract extraction, cyclodialysis, canaloplasty,[1]and filtration procedure (laser peripheral iridectomy, especially with YAG laser than with argon laser; argon laser trabeculoplasty [ALT], not very common). Hyphema is encountered during insertion of microstents during several of the minimally invasive glaucoma surgeries (MIGS), which are becoming increasingly popular, as described by Hoeh et al with their experience with the CyPass Micro-Stent.[2]

**Early postoperative bleeding:** A traumatized uveal vessel that was in spasm and suddenly dilates or conjunctival bleeding that makes its way into the anterior chamber via a corneoscleral wound or sclerostomy

Late postoperative bleeding: New vessels growing across the corneoscleral wound that bleed when manipulated, a uveal wound that is reopened, or an intraocular lens (IOL) that causes chronic iris erosion (eg, uveitis-glaucoma-hyphema [UGH] syndrome)

**Recognizing that the prognosis for visual recovery is directly related to the following 3 factors is important:**

Amount of associated damage to other ocular structures (ie, choroidal rupture, macular scarring)

**Whether secondary hemorrhage occurs**

Whether complications of glaucoma, corneal bloodstaining, or optic atrophy occur Treatment modalities should be directed at reducing both the incidence of secondary hemorrhage and the risk of corneal bloodstaining and optic atrophy.

The customary treatment of patients with traumatic hyphema has included hospitalization, bed rest, bilateral patching, topical cycloplegics, topical steroids, systemic steroids, and sedation. In any therapeutic regimen, the injured globe requires adequate protection with a patch and shield.[3] Elevating the head of the bed 30-45° facilitates settling of the hyphema in the inferior anterior chamber and aids in classifying the hyphema. Inferior settling facilitates more rapid improvement of visual acuity, earlier evaluation of the posterior pole, and greater clearing of the anterior chamber angle. Various topical medications have been recommended for treating patients with traumatic hyphema, including cycloplegics for traumatic iridocyclitis and miotics to increase the surface area of the iris to enhance resorption of the hyphema.[4, 5, 6] Topical corticosteroids and estrogens[6, 7] have been recommended with contradictory results.[7]

Several double-masked studies clearly establish the value of systemic aminocaproic acid (ACA, AMICAR) in the prevention of recurrent hemorrhages.[8] If secondary hemorrhages are the result of lysis and retraction of a clot that has produced an occlusion of the traumatized vessel, then prevention of normally occurring clot lysis for 5-6 days should be advantageous to allow the injured blood vessel to more completely repair its integrity.[8] The antifibrinolytic activity of ACA given systemically has been demonstrated in other areas of the body to decrease the incidence of secondary hemorrhage.

ACA retards clot lysis by preventing plasmin from binding to the lysine in the fibrin clot. As a lysine analog, ACA competitively inactivates plasmin by occupying the site on plasmin that would normally bind to fibrin. In a similar manner, ACA binds to plasminogen, so that when activated to plasmin, it cannot attach to fibrin.

When ACA was administered orally in a dosage of 100 mg/kg every 4 hours for 5 days, a statistically significant reduction in the incidence of rebleeding of traumatic hyphemas was observed.[8] Systemic ACA should be used in hyphemas occupying 75% or less of the anterior chamber because the clot may persist in the anterior chamber for an increased period during administration of the drug. The continued retention of the clot in the anterior chamber could be a potential disadvantage with larger Grade 4 hyphemas.

Systemic ACA should not be used in patients who are pregnant or those with renal or hepatic insufficiency.

Since systemic ACA significantly reduces the incidence of secondary hemorrhage, a topical preparation could decrease the incidence of adverse effects. By concentrating the drug in the aqueous humor, a topical preparation would decrease the systemic concentration of ACA associated with many of the adverse effects.

**Conclusion:**

Hyphema occurring during cataract surgery is well known complication. History of taking anti platelet drugs can have alarming effect for development of Hyphema and is very troublesome for the patient and the surgeon. Stopping of anti platelet drugs before surgery can avoid such complications. Usually, hyphema can be managed conservatively as only oozing occurs. Properly managed hyphema has excellent prognosis.

**Conflict of interest: none**

## REFERENCES

1. Brusini P, Caramello G, Benedetti S, Tosoni C. Canaloplasty in Open-angle Glaucoma: Mid-term Results From a Multicenter Study. *J Glaucoma*. Oct 14 2014;.. | 2. Hoeh H, Vold SD, Ahmed IK, Anton A, Rau M, Singh K. Initial Clinical Experience With the CyPass Micro-Stent: Safety and Surgical Outcomes of a Novel Supraciliary Microstent. *J Glaucoma*. Oct 9 2014;. | 3. Romano PE. Systemic prednisolone prevents rebleeding in traumatic hyphema. *Ophthalmology*. May 2000;107(5):812-4. . | 4. Gilbert HD, Jensen AD. Atropine in the treatment of traumatic hyphema. *Ann Ophthalmol*. Dec 1973;5(12):1297-300. . | 8. . | 5. Yasuna E. Management of traumatic hyphema. *Arch Ophthalmol*. Mar 1974;91(3):190-1. . | 6. Milstein BA. Traumatic hyphema. A study of 83 consecutive cases. *South Med J*. Sep 1971;64(9):1081- | 7. Spaeth GL, Levy PM. Traumatic hyphema: its clinical characteristics and failure of estrogens to alter its course. A double-blind study. *Am J Ophthalmol*. Dec 1966;62(6):1098-106. . | 8. Crouch ER Jr, Frenkel M. Aminocaproic acid in the treatment of traumatic hyphema. *Am J Ophthalmol*. Mar 1976;81(3):355-60. . | .