Clinical management of hyphaema

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Introduction
Hyphaema is the presence of red blood cells in the anterior chamber. A minimal amount of tiny red blood cells suspended in the aqueous humour is termed a microhyphaema. Microhyphaema may be visible only with the slit lamp, in the form of erythrocytes floating and circulating in the aqueous humour. Slightly larger amounts of red blood cells settle as variously shaped masses on the surface of the iris, lens or vitreous. Still larger volume of red blood cells gravitates to the anterior aspect of the interior chamber, producing a grossly visible layered hyphaema, which may be partial or complete.

The management of hyphaema can present a challenge to a clinician, because medical treatment is of little value for hyphaema itself but is useful for complications.

Traumatic hyphaema
The vast majority of cases occur as a result of significant blunt trauma to the eye, although a hyphaema can still occur because of a seemingly trivial injury. Common causes include airbag injuries, blows to the eye during fist, belt or stick fights. Projectiles to the orbit, such as baseballs, stones, explosions and other small objects are other common agents of injury. Ocular trauma is a major cause for monocular vision impairment and blindness worldwide.

Spontaneous hyphaema
Hyphaemmas that occur with no obvious history of trauma are known as spontaneous hyphaemmas. It can be caused by vascular abnormalities, inflammatory processes, vascular erosions, haematological disorders or following surgery.

Symptoms
The symptoms of a hyphaema vary depending on the severity. Patients may present with blurred vision, pain, photophobia, lacrimation, headache, vomiting, nausea and somnolence/lethargy.

Classification
Description and classification of hyphaema in terms of several variables are important in evaluating severity, monitoring and management. A general classification system exists that has universal acceptance which is best classified according to the amount of red blood cells in the anterior chamber. It consists of grading the amount of blood layering present.

Grade 0: microhyphaemal, circulating red blood cells only
Grade 1: less than ¼ of anterior chamber
Grade 2: more than ¼ to ½ of anterior chamber
Grade 3: more than ½ to ¾ of anterior chamber
Grade 4: total filling or "eight-ball" hyphaema

Patient’s history
The ophthalmic examination focusing on hyphaema should begin with a complete history. Circumstances surrounding the event, current medications, past medical history and previous ocular history must be addressed. Bleeding in the eye warrants questioning concerning systemic blood disorders (haemoglobinopathies) such as sickle cell anaemia, haemophilia and von Willebrand’s disease (vascular haemophilia), because they may affect the course of the hyphaema, its management and the long term outcome. Unreliable historians should be screened for coagulopathic disorders with appropriate testing (sickle prep or dex, prothrombin time (PT) and partial thromboplastin time (PTT)).

Examination
Inspection for gross ocular injury, evaluation of the adnexae and the assessment of visual acuity, visual fields, pupillary function, ocular motility and the position of the globes should be undertaken. Perform uncorrected, corrected and pinhole (if indicated) visual acuities depending on the extent of the hyphaema and other ocular injuries that may affect vision. Pupil evaluation will help determine the extent of any traumatic injury to the surrounding adnexae. Ecchymosis and lid oedema often accompany contusion injuries to the eye. Disproportionate conjunctival edema or haemorrhage may indicate a scleral rupture, and restriction in ocular motility may suggest an orbital blow out fracture. For unknown reasons, many patients diagnosed with traumatic hyphaema may appear drowsy, thus the mechanism of injury should be clearly established so that a head injury will not go undiagnosed.

Management
The overall management for hyphaema should be directed toward minimizing secondary haemorrhage and reducing the incidence of secondary glaucoma. Many different supportive therapeutic and medical regimens continue to be tried in an attempt to avoid complications and promote hyphaema restoration. Clinicians should not feel obliged to use ritualistic therapy that they consider to be of uncertain value.

The conventional treatment of patients with traumatic hyphaema has included hospitalization, bed rest, bilateral eye patching, sedation and avoidance of any strenuous activity. Although most patients and families prefer outpatient care for the management of hyphaema, the decision to hospitalize should be based on clini-
Cyclopentolics, miotics, corticosteroids, beta-adrenergic antagonists, carbonic anhydrase inhibitors and hyperosmotics have all been advocated individually or in combination to increase patient comfort, reduce intraocular inflammation, decrease the incidence of secondary haemorrhage, reduce intraocular pressure (IOP) and promote clearance of traumatic hyphema.10

Drops of 1% topical atropine, an antimuscarinic cyclopentol, in the affected globe result in mydriasis and cycloplegia, thereby increasing patient comfort by reducing ciliary spasm.10

Published data show that patient treated with systemic steroids had an incident of secondary haemorrhage equal to that of patients treated with systemic aminocaproic acid.2 6 Topical aminocaproic acid use does not produce the side effects typically associated with systemic aminocaproic acid or tranexamic acid, such as nau sea, vomiting and hypotension. 2

Conclusion
The eye is an organ that represents only 0.3% of the total surface area of the human body. However, loss of vision in one or both eyes has been classified as 24% or 85% whole person impairment or disability, respectively.10 Obtain complete ocular and medical history. Evaluate the entire eye in an organised manner. Rule out ruptured globe, orbital fracture, retinal detachment and systemic bleeding disorders.  

[This article has been peer reviewed]

References