Hypopyon – an unusual sign in acute angle-closure glaucoma

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Abstract

The appearance of a hypopyon is an extremely uncommon finding in acute angle-closure glaucoma and only a few cases have been previously reported in the literature. We report a fifty-year-old female who, following a recent bereavement, presented with classical features of acute angle-closure glaucoma and a hypopyon. The eye developed a glaukomflecken and the patient underwent trabeculectomy, extracapsular cataract extraction and intraocular lens implantation with good post-operative results. Because hypopyon in acute angle-closure glaucoma is rare and may cause diagnostic confusion and hence therapeutic difficulties, this case is described to highlight this unusual clinical sign.

Introduction

The finding of cells in the anterior chamber in acute angle-closure glaucoma is relatively common and well-known [1]. The presence of a hypopyon in acute angle-closure glaucoma is, however, an extremely uncommon clinical sign and only a handful of cases have been previously reported [2, 3]. Because of its rarity, the finding of hypopyon in acute glaucoma may present diagnostic and hence therapeutic difficulties. We report in this paper the presence of a hypopyon in an otherwise typical case of acute angle-closure glaucoma to highlight this unusual clinical sign.

Case report

A fifty-year-old Chinese female was admitted to the Singapore National Eye Centre in August 1992 with a complaint of sudden onset of redness and blurring of vision in the right eye for a duration of four days. This was associated with right-sided headache, nausea and vomiting which were relieved with paracetamol and lorazepam prescribed by a general practitioner on the first day of her symptoms. Her father-in-law passed away one week prior to her admission and she had been emotionally upset because of the recent bereavement. She did not have any previous similar or other ocular symptoms and did not instill any medication to her eye prior to admission. There was no personal or family history of any significant medical illness and the systemic review was unremarkable.

Her best-corrected visual acuity was CF at 1 foot and 6/7.5 in the right and left eye respectively. Ophthalmic examination revealed circumcorneal ciliary injection and corneal edema in the right eye. Some iris pigments were scattered on the corneal endothelium. The anterior chamber was shallow and a small hypopyon was present (Fig. 1). No keratic precipitate was noted. The pupil was mid-dilated and unreactive to light. No rubeosis iridis was evident and the lens was not cataractous at the time of admission. The corneal haze prevented a good view of
the anterior chamber angles and the fundus in the right eye.

The left cornea was clear and the anterior chamber was shallow and quiet. Gonioscopy of the left eye revealed a narrow grade 2 angle all round. The intraocular pressure was 32 and 10 mmHg in the right and left eye, respectively.

Systemic examination was unremarkable. Full blood count and blood urea, creatinine, electrolytes and glucose were normal. Erythrocyte sedimentation rate was 28 mm/hr. B Scan of the right eye was normal.

The clinical impression was that the patient had right primary angle-closure glaucoma with an excessive inflammatory response producing a hypopyon. Acute iritis with secondary glaucoma was considered a possible differential diagnosis.

The patient was treated with intravenous and oral acetazolamide, intravenous mannitol, oral glycerol and topical timolol, antibiotic and steroid to the affected eye. Topical pilocarpine was given to the fellow eye as the anterior chamber was shallow but not to the affected eye as the possibility of acute iritis with secondary glaucoma was entertained.

The right intraocular pressure fell to 10 mmHg after 6 hours and remained at 13 mmHg over the next two days. By the third day of admission, the hypopyon had disappeared, a glaukomflecken had formed (Fig. 2) and the right VA was CF 3 feet.

The patient underwent right trabeculectomy, extracapsular cataract extraction and intraocular lens implantation and prophylactic left laser iridotomy. Post-operatively, a conjunctival bleb formed and the corneal edema cleared (Fig. 3). The right best-corrected VA was 6/60, 6/18 and 6/9 on the second, fourth and tenth post-operative day respectively. Except for a mild and brief post-operative iritis expected following such a surgery, the eye remained quiet and asymptomatic up to the latest follow-up four months after the operation.

Discussion

The typical clinical features of acute angle-closure glaucoma are well-known [1, 3]. To the best of our knowledge, the appearance of a hypopyon as part of the clinical picture has been described in only a handful of cases [2, 3]. Except for the hypopyon, the predisposing factor, symptoms, signs and response to treatment seen in our patient are classical of acute angle-closure glaucoma.

One of the most important factors in closing the angle in an anatomically predisposed eye is dilation of the pupil. This may occur as a result of a variety of causes including emotion [1]. Our patient’s predisposition to angle-closure is evident from the narrow anterior chamber angles in her left eye and the acute glaucoma in her right eye is likely to have