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CASE SERIES

Spontaneous hyphaema and acute ocular hypertension associated with severe lens-induced uveitis

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Abstract

Purpose **To report the occurrence of spontaneous hyphaema and acute ocular hypertension in four patients with severe lens-induced anterior uveitis.**
Methods **Retrospective case series.**
Results **Four patients with mature cataract developed severe acute, unilateral, anterior uveitis associated with spontaneous hyphaema formation and acutely elevated intraocular pressure. None of the patients had a history of trauma or evidence of angle, iris, or retinal neovascularization. Prompt cataract removal led to resolution of the inflammation, clearing of the anterior chamber haemorrhage, and normalization of intraocular pressure in all four affected eyes.**
Conclusions **Spontaneous hyphaema and acute ocular hypertension can occur in patients with severe lens-induced intraocular inflammation in the absence of trauma or ocular neovascularization.**
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Keywords: haemorrhage; inflammation; iritis; phacolytic

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Introduction

Although spontaneous hyphaema has been reported to occur in approximately 5% of patients with Fuchs' uveitis syndrome (FUS),[1] the occurrence of anterior chamber bleeding in other forms of uveitis is distinctly unusual. Fong and Raizman[2] reported on the largest series of patients with severe anterior uveitis and spontaneous hyphaema formation, including one patient each with idiopathic anterior uveitis, Reiter's syndrome, juvenile rheumatoid arthritis, ankylosing spondylitis, and herpes simplex virus-associated keratouveitis. Three of these five patients had current or prior rubeosis irides. Similarly, Klemperer *et al* described two patients with anterior uveitis associated with spontaneous hyphaema, both of whom had ankylosing spondylitis and rubeosis irides,[3] Hayasaka *et al*[4] reported on hyphaema formation in two patients with herpes zoster ophthalmicus in the absence of rubeosis irides, and Mamo and Baghdassarian[5] described hyphaema in a patient with Behcet's syndrome, anterior uveitis, and no obvious iris neovascularization. Most recently, Gan and Teoh[6] reported the occurrence of haemorrhagic, hypertensive, hypopyon uveitis in a HIV-positive patient with a history of cytomegalovirus uveitis and immune reactivation uveitis. No mention was made regarding the presence or absence of neovascularization of the angle, iris, or retina.

Case reports

We describe four patients who developed spontaneous hyphaema and acute ocular hypertension in the setting of severe lens-induced anterior uveitis in the absence of trauma or ocular neovascularization. Patient characteristics are summarized in Table 1 and their appearance at presentation is illustrated in Figure 1. Intraocular pressure was controlled before surgery with topical pressure-lowering agents. There was no history of trauma in any of the patients and none had newly formed angle, iris, or retinal vessels on detailed examination

Table 1 Clinical characteristics of patients at presentation

Case	*Age (years)*	*Sex*	*Affected eye*	*Presenting vision*	*Presenting IOP (mm Hg)*	*Final vision*
1	77	W	OD	LP	21 (7 OS)	6/9
2	59	M	OS	LP	34 (12 OD)	6/12
3	62	M	OS	LP	32 (18 OD)	6/6
4	65	M	OD	LP	56 (18 OS)	6/9

Abbreviations: W, woman; M, man; LP, light perception; IOP, intraocular pressure; OD, right eye; OS, left eye.
All patients had a mature cataract, severe anterior uveitis, haemorrhagic hypopyon formation, and acutely elevated intraocular pressure in the affected eye.

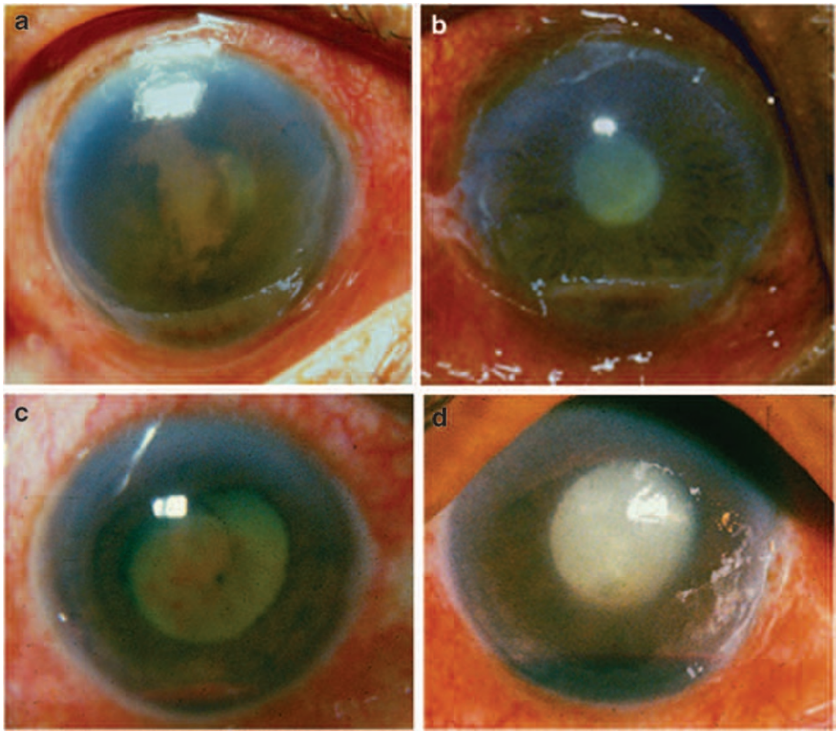

Figure 1 Slit-lamp photographs showing mature cataract, severe anterior uveitis, and spontaneous hyphaema formation in cases 1 (a), 2 (b), 3 (c), and 4 (d).

before or after removal of the cataract. All four patients underwent emergent lens removal followed by intraocular lens placement in the primary posterior chamber. Intraocular pressure normalized and the anterior chamber inflammation and haemorrhage resolved following removal of the cataract in all four patients.

Discussion

There are a number of possible causes of spontaneous hyphaema formation in patients with uveitis. Trauma, when severe, can cause both uveitis and vascular damage, producing haemorrhagic anterior chamber inflammation.[2] Patients with FUS have abnormally friable iris and anterior chamber angle vessels, which may bleed in response to trauma, or following anterior chamber paracentesis (Amsler's sign).[1,5,7] Inflammatory occlusion of iris vessels, as can occur in Behcet's disease, or in herpetic infection,[2,4] can directly damage the iris vessels, resulting in anterior chamber haemorrhage. Some patients with anterior uveitis,[2,3,5] including a small percentage of patients with FUS,[1,7] have abnormal vessels in either the angle or the iris, which may bleed during periods of inflammation. Finally, patients with severe anterior chamber inflammation and no evidence of iris neovascularization can have such severe vascular compromise that both white and red blood cells extravagate, resulting in both a hypopyon and spontaneous hyphaema formation, as we presume occurred in our four patients.

Anterior chamber bleeding resolves spontaneously, as the inflammation is controlled in most patients with

uveitis and spontaneous hyphaema formation.[1–7] Surgical removal of blood from the anterior chamber may be required when the bleeding fails to clear spontaneously.[2] Posterior segment examination and fluorescein angiography should be performed whenever possible to exclude retinal ischaemia or neovascularization. The primary treatment for lens-induced uveitis is prompt and complete removal of all lens material.

Summary

What was known before

- Uveitis can be associated with haemorrhagic hypopyon formation.

What this study adds

- First to describe spontaneous hyphema formation and ocular hypertension in patients with lens-induced uveitis.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgements

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