

Iris crystals in chronic iridocyclitis

Sheridan Lam, Howard H Tessler, Karen Winchester, Holly van Hecke, Byron L Lam

Abstract

Iris crystals in three patients with idiopathic iridocyclitis, Fuchs' heterochromic iridocyclitis, and iridocyclitis associated with systemic pseudolymphoma are described. Two patients had iris crystals in one eye, and the other patient had bilateral involvement. The number of iris crystals in each eye ranged from one to multiple crystals. Iris crystals were minute and refractile and glistened with light; they have previously been reported to be Russell bodies and to be associated with hypergammaglobulinaemia. However, two of the patients, who underwent serum protein electrophoresis, did not demonstrate hypergammaglobulinaemia.

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Iris crystals are rare. In 1969 the first case of iris crystals was described in a patient with chronic uveitis, and in 1990 three cases were reported in patients with chronic iridocyclitis and hypergammaglobulinaemia.^{1,2}

Herein we report three additional cases of iris crystals in patients with idiopathic chronic iridocyclitis, Fuchs' heterochromic iridocyclitis, and chronic iridocyclitis associated with systemic pseudolymphoma (that is, reactive lymphoid hyperplasia).

Case reports

CASE 1

An 11-year-old white boy with chronic idiopathic iridocyclitis in his left eye was found to have iris crystals in the affected eye.

The best corrected visual acuity was 20/20 OD and 20/25 OS. The right eye was normal. The left cornea had multiple small to medium-sized keratic precipitates. The anterior chamber had +2 cells and flare. The iris crystals appeared as numerous tiny deposits scattered throughout the iris stroma. These deposits appeared bright yellow and refractile and glistened with light (Figs 1 and 2). The lens showed a mild posterior subcapsular cataract. The intraocular pressure was normal. The left fundus had slight vitreous haze and a few fluffy opacities in the inferior vitreous.

The laboratory tests, including a serum protein electrophoresis, revealed normal findings.

CASE 2

A 39-year-old black man with chronic iridocyclitis and retinal periphlebitis was found to have iris crystals in both eyes. The patient has a history of pseudolymphoma with pulmonary, mesentery, and testicular involvement.

The best corrected visual acuity was 20/30 OD and 20/50 OS. Both corneas showed diffuse endothelial dusting. Three keratic precipitates were on the right corneal endothelium, and five keratic precipitates were on the left. A small hypopyon was present in both eyes. Anterior chamber reaction was +1 flare and +3 cells bilaterally. Both irides showed numerous minute refractile bodies on the stroma consistent with iris crystals. The lenses were clear. The intraocular pressure was normal. Both optic discs appeared hyperaemic. Sheathing of retinal venules and cystoid macular oedema was present in both eyes.

The laboratory tests, including a serum protein electrophoresis, revealed normal findings.

Department of Ophthalmology and Visual Sciences, UIC Eye Center, University of Illinois at Chicago College of Medicine, Chicago, USA

S Lam
H H Tessler
K Winchester
H van Hecke
B L Lam

Correspondence to: Sheridan Lam, MD, UIC Eye Center, 1855 West Taylor Street, Chicago, IL 60612, USA.

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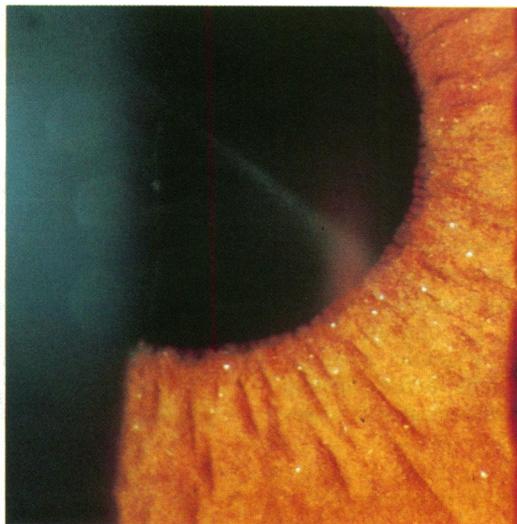


Figure 1 Case 1. Iris crystals appearing as multiple refractile crystalline deposits on the iris stroma.



Figure 2 Case 1. Some of the iris crystals glisten with dim background illumination.

CASE 3

A 41-year-old white woman with bilateral Fuchs' heterochromic iridocyclitis was noted to have an iris crystal in her left eye, which had an uncomplicated cataract extraction with posterior chamber lens implantation. The patient was treated with topical timolol in both eyes for open angle glaucoma. The patient was treated with isoniazid for positive conversion of the purified protein derivative (PPD) skin test.

The best corrected visual acuity was 20/25 OD and 20/40 OS. The right cornea showed mild band keratopathy. About 100 fine keratic precipitates were scattered diffusely on the right corneal endothelium, whereas about 47 fine to medium-sized keratic precipitates were noted on the left corneal endothelium. Some of the keratic precipitates were stellate and had fine fibrin bridges. The right anterior chamber had +1 flare and occasional cells, and the left anterior chamber had +1 flare and +3 cells. Both irides showed diffuse stromal atrophy. One iris crystal was noted on the left iris near the pupillary margin at the 6 o'clock position. The right lens had a mild posterior subcapsular opacity. The posterior chamber lens implant in the left eye had a few deposits on its anterior surface. The posterior capsule had mild haze. The intraocular pressure and both fundi were normal.

Comment

Including the three patients in this report seven patients with iris crystals have been described in the ophthalmic literature, and all patients had chronic iridocyclitis.^{1,2} Some of the patients with iris crystals had sarcoidosis or were tested positive for HLA-B27.² In this report, we describe the presence of iris crystals in patients with idiopathic chronic iridocyclitis (case 1), chronic iridocyclitis associated with systemic pseudolymphoma (case 2), and Fuchs' heterochromic iridocyclitis (case 3). In two of our patients (cases

1 and 3), the iris crystals were in one eye only, and the other case was bilateral.

The clinical appearance of iris crystals is dramatic. Although they are minute, iris crystals are highly refractile and glisten with illumination. Iris crystals are best seen with the slit beam set at different angles since different iris crystals will glisten as the angle of the slit beam is changed. An eye may have from one to multiple iris crystals, and the number of iris crystals in an eye may change from time to time.

The pathogenesis of iris crystals remains obscure. In 1969 Iwamoto and Witmer¹ reported a case of chronic uveitis and iris crystals, and with electron microscopy they demonstrated that iris crystals are Russell bodies in the iris stroma. Russell bodies are precipitates of immunoglobulins in plasma cells, and sometimes these precipitates may crystallise.³ We hypothesise that the characteristics of iris crystals may be due to the crystallisation of immunoglobulins that may occur in some Russell bodies.³

In 1990 Lam and Tessler² reported three cases of iris crystals associated with hypergammaglobulinaemia. Our first two cases in this report, however, did not demonstrate hypergammaglobulinaemia on serum protein electrophoresis. Therefore, iris crystals may not always be indicative of hypergammaglobulinaemia. Serum protein electrophoresis was not performed in case 3.

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1 Iwamoto T, Witmer R. Light and electron microscopy on plasma cells and Russell body in the iris of a chronic uveitis patient. *Invest Ophthalmol* 1969; 8: 563-82.

2 Lam S, Tessler HH. Iris crystals and hypergammaglobulinemia. *Am J Ophthalmol* 1990; 110: 440-1.

3 Howes EL. Basic mechanisms in pathology. In: Spencer WH, ed. *Ophthalmic pathology. An atlas and textbook*. 3rd ed. Vol 1. Philadelphia: Saunders, 1985: 33.

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Coxsackievirus B3-associated panuveitis

Werner Förster, Alexander A Bialasiewicz, Holger Busse

Abstract

A 29-year-old woman suffered from headaches, diarrhoea, and high grade fever followed by a unilateral retinal vasculitis, papillitis, and chorioretinitis. Abnormal electrocardiographic findings and antibody titre dynamics strongly suggested a coxsackievirus B3 infection. With respect to prior observations on coxsackievirus B group associated uveitis this viral infection may be considered in patients with well defined extraocular manifestations and uveitis.

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More than 90% of coxsackievirus group B infections are either asymptomatic or result in undifferentiated febrile illness with malaise and sore throat. A number of upper respiratory syndromes, diarrhoea and abdominal pain, central nervous system, and cardiac disorders are caused by coxsackievirus B infections.¹ Whereas coxsackievirus A24 has long been known as a cause of acute haemorrhagic conjunctivitis,² the ophthalmic manifestations of coxsackievirus group B infections have only recently been elucidated. Infections with coxsackievirus B4 have been linked to chorioretinitis³ and

University Eye Hospital
Münster, Münster,
Germany
W Förster
A A Bialasiewicz
H Busse

Correspondence to:
A A Bialasiewicz, University
Eye Hospital Münster,
Domagkstrasse 15, W-4400
Münster, Germany.

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