CASE REPORT

Pigmented spherical body floating within the globe

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SUMMARY

Vitreous cysts are rare ocular malformations. We report an unusual case of a pigmented free-floating vitreous cyst incidentally detected in a highly myopic 28-year-old woman who was referred by her optometrist.

BACKGROUND

Vitreous cysts are rare ocular malformations that can arise in otherwise normal eyes. They have also been described in association with eye disease (eg, retinitis pigmentosa) and as embryonic remnants of the hyaloid system.

Although mostly asymptomatic and often detected incidentally, they can have a startling appearance when observed, and can cause worry and diagnostic uncertainty in clinician and patient alike.

CASE PRESENTATION

History

A 28-year-old Bulgarian waitress was referred to the eye casualty following a routine eye examination, during which the optometrist discovered a spherical object floating in the patient's vitreous.

The patient was asymptomatic and denied any floaters, reduced vision, blurring or seeing shadows. There was neither history of ocular or head trauma nor any recent foreign travel.

The ophthalmic history was significant for high myopia (right eye -15.00 | -0.50×105 , left eye -15.75 | -0.50×90), corrected with contact lenses; and myopic macular degeneration, which had been diagnosed in Bulgaria.

The patient had no medical history or current medication use. She did not smoke or drink alcohol. Her family history was significant for high myopia on her mother's side.

Examination

Corrected Snellen visual acuity was $6/9^{+2}$ in the right eye and $6/12$ in the left. Corneal and conjunctival examination was unremarkable bilaterally. There were no signs of anterior chamber inflammation and both lenses were clear. Intraocular pressure was 14 mm Hg in each eye. A spherical object was noted free floating behind the lens in the right eye (figure 1 and video 1, available in online html version only).

Dilated funduscopy confirmed a pigmented spherical cyst within the vitreous, floating behind the lens in the right eye.

Retinal examination revealed bilateral macular hyperpigmentary and hypopigmentary changes, chorioretinal atrophy and posterior macular

Figure 1 Anterior segment photograph of the right eye showing a pigmented spherical cyst within the vitreous floating behind the lens.

staphylomata (posterior protrusions), consistent with myopic macular degeneration. Both optic nerve heads were tilted, with surrounding peripapillary atrophy, and also showed staphylomata (figure 2). Optical coherence tomography (OCT) revealed extensive myopic maculoschisis (figure 3).

INVESTIGATIONS

OCT is a non-invasive imaging modality that uses visible light waves to produce a two-dimensional cross-sectional view of structures in the eye.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis of a free floating object within the globe is:

- ▶ Vitreous haemorrhage;
- ▶ Vitreous syneresis;

Figure 2 Colour fundus photograph of the right eye showing tilted optic nerve head with peripapillary atrophy and staphyloma. Macular pigmentary epithelial changes can also be seen.

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Figure 3 Optical coherence tomography of the right eye showing splits within the layers of the macula and a posterior staphyloma (posterior protrusion) of the globe, characteristic of myopic maculosis.

- ▶ Operculated retinal tear;
- ▶ Intra-ocular foreign body;
- ▶ Parasitic infection (eg, cysticercosis).

TREATMENT

Owing to the absence of any symptoms, no active intervention for the vitreous cyst was planned.

OUTCOME AND FOLLOW-UP

For the myopic macular degeneration and maculosis, follow-up in a retinal clinic was instigated.

DISCUSSION

Vitreous cysts are rare ocular developmental anomalies that are usually detected incidentally. They can be free floating or tethered to surrounding structures with both pigmented and non-pigmented forms described.

Their exact aetiology is unknown, however, theories have postulated that they are remnants of the vascular hyaloid system,¹ or,

alternatively, iris or ciliary body cysts that have become detached,² this could explain the pigmented forms. Vitreous cysts have been reported in association with a number of ophthalmic conditions including retinitis pigmentosa, uveitis, toxoplasmosis, trauma, chorioretinal atrophy and Wagner disease.³

The pigmented vitreous cyst in this case was detected incidentally in a young myopic woman with a known history of myopic macular degeneration. OCT revealed an additional diagnosis of myopic maculosis.

Learning points

- ▶ A floating pigmented sphere within the eye can be a congenital finding of a vitreous cyst.
- ▶ These congenital anomalies are associated with other ophthalmic conditions and referral to an ophthalmologist is warranted.
- ▶ If patients are asymptomatic, no treatment is indicated; in cases where the cysts affect vision, a vitrectomy can be offered to remove the cyst.

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Contributors ASH conceived of and wrote the report; it was reviewed and edited by the coauthors.

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