Roth spot secondary to Valsalva retinopathy

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DESCRIPTION

A 34-year-old woman presented with a 1-day history of floaters in her right eye. She had a 3-day history of an upper respiratory tract infection that resulted in excessive coughing and clearing of her throat. She was otherwise healthy and review of systems was negative. Visual acuity was 20/20 in both eyes. Anterior segment examination was normal. Dilated fundus examination of the right eye revealed a preretinal haemorrhage, breakthrough vitreous haemorrhage, and a Roth spot superior to the optic disc ([figure 1](#)). Haematological, autoimmune and infectious workup was negative. Her presentation was most consistent with Valsalva retinopathy and observation was recommended. Her visual symptoms resolved after 5 days and repeat examination 3 months later was normal.

Valsalva retinopathy is defined as a preretinal haemorrhage arising from a sudden increase in intra-abdominal or intrathoracic pressure (ie, following a Valsalva manoeuvre such as coughing, vomiting or straining).¹ Patients are often symptomatic with an acute decrease in vision or new floaters. Findings on dilated fundus examination include preretinal haemorrhage, most often in the macula, with or without breakthrough vitreous haemorrhage. Management is typically conservative with haemorrhages clearing spontaneously.

Roth spots are defined as white-centred retinal haemorrhages. This classic appearance is thought to

arise from retinal capillary rupture with subsequent platelet-clot formation.² Though initially described in patients with infective endocarditis, Roth spots may also present in a variety of medical conditions, including leukaemia, hypertensive retinopathy, diabetic retinopathy and HIV retinopathy.¹ For this reason, patients with Roth spots require a workup to assess for systemic aetiology.

This case demonstrates a unique finding of a Roth spot in Valsalva retinopathy, without other identified systemic aetiology. Valsalva retinopathy should therefore be added to the differential diagnosis for this retinal finding.

Learning points

- ▶ Valsalva retinopathy typically occurs after a sudden increase in intrathoracic or intra-abdominal pressure and may cause sudden loss of vision or floaters.
- ▶ A Roth spot is a white-centred retinal haemorrhage that may occur in a variety of contexts such as bacterial endocarditis, leukaemia or anaemia.

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REFERENCES

- 1 Simakurthy S, Tripathy K. Valsalva Retinopathy. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing, 2019. <http://www.ncbi.nlm.nih.gov/books/NBK545219/>
- 2 Ruddy SM, Bergstrom R, Tivakaran VS. Roth Spots. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing, 2019. <http://www.ncbi.nlm.nih.gov/books/NBK482446/>

Figure 1 Fundus photos of both eyes showing a normal left eye and affected right eye with preretinal haemorrhage, breakthrough vitreous haemorrhage and a Roth spot superior to the optic disc.

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