Waking up to poor vision after a night out

Nishanthan Ramachandran, Riyaz Bhikoo, John Ah-Chan, Harry Bradshaw

A significant reduction in vision is an emergent problem and requires prompt ophthalmic assessment. However, not all causes of visual impairment carry a poor prognosis. We present a case of valsalva retinopathy in which prognosis is often good.

Case report
A 27-year-old normotensive healthy male woke with a large central scotoma in his right eye, after a night of inebriation and frequent vomiting. His best corrected visual acuities (BCVA) were 6/24 right eye and 6/5 left eye, with normal intraocular pressures (16mmHg both eyes). The significant exam finding was an encapsulated fluid mass at the right macula with a hemorrhagic condensate inferiorly sparing the fovea, and serous component superiorly. Optical coherence tomography (OCT) of the right macula showed extensive fluid beneath the internal limiting membrane (ILM) (Figure 1A). The left eye was normal (Figure 2). The history and examination findings were consistent with valsalva retinopathy. Both conservative and surgical options were relayed to the patient and the joint decision was to treat conservatively. At one month follow-up, the accumulated blood had broken through into the vitreous cavity causing further blurring of vision and a temporary drop in BCVA to 6/36 (Figure 1B). BCVA continued to improve at two (6/12), four (6/9) and 10 months (6/6) as the remaining fluid resorbed with a significant improvement noted on OCT (Figures 1C to 1E). At the final follow-up, a persistent separation of the ILM (premacular membrane) was noted; however, the patient reported no distortion in vision and was subsequently discharged to the care of the optometrist.

Discussion
Valsalva retinopathy is typically observed in healthy young adults, and was first described by Thomas Duane in 1972. As the name implies, valsalva type manoeuvre from activities of excessive physical strain (vomiting, violent coughing, sexual intercourse and child birth) causes a rise in intraocular venous pressure with subsequent perifoveal capillary rupture and premacular haemorrhage (in subhyaloid, sub-ILM or both layers). In our patient the premacular haemorrhage had accumulated under the ILM with subsequent spontaneous evacuation into the vitreous.

The prognosis of valsalva retinopathy is often good; with spontaneous resorption of pre-retinal haemorrhage over several months. There is a theoretical risk of iron-related toxic retinopathy leading to long-term visual impairment. More invasive treatment modalities include LASER (Nd:YAG, argon or krypton), pneumatic displacement and pars plana vitrectomy (PPV). LASER membranotomy of the posterior hyaloid face allows the haem into the vitreous cavity reducing retinal exposure to iron and accelerating visual recovery. There is a risk of inadvertent LASER damage to surrounding retina and choroid. Pneumatic displacement of haemorrhage using an intravitreal gas injection +/- tissue plasminogen activator can shift the blood from the fovea but carries restriction on driving and predisposes cataract formation. In recalcitrant cases PPV may be necessary to evacuate the haemorrhage; but complications include cataracts, retinal detachment and macular hole formation.
Figure 1: Colour fundus photograph and macula OCT of the right eye at each visit. OCT images show cross-sections of the macula from temporal (T) to nasal (N).

Arrow = ILM, arrow-head = premacular membrane, star = fluid. A = at presentation with sub-ILM haemorrhage and serous fluid overlying fovea, B = at one month with haemolysed blood in vitreous cavity, C = at two months with further resorption and clearing of blood, D = at four months showing ILM still separated from retina, E = at 10 months showing premacular membrane and eye returning almost to baseline.
Figure 2: Colour fundus photograph and macula OCT of the left eye at presentation. OCT image shows cross-section of the macula from nasal (N) to temporal (T). Diamond overlies fovea.

Even with a clear clinical presentation of valsalva retinopathy, important differentials in a young adult are blood dyscrasias, diabetic retinopathy and retinal artery macroaneurysm.\(^4,5\) Although not all causes of visual loss are recoverable, valsalva retinopathy is a rare recoverable cause of visual impairment.

**REFERENCES:**


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**Author information:**

Nishanthan Ramachandran, Ophthalmology Registrar, Southern DHB; Riyaz Bhikoo, Ophthalmology Registrar, Auckland DHB; John Ah-Chan, Ophthalmologist, MidCentral DHB; Harry Bradshaw, Ophthalmologist, Southern DHB.

**Corresponding author:**

Nishanthan Ramachandran, C/o Eye Department, Dunedin Hospital, Dunedin 9054. nishan.rama@gmail.com

**URL:**