Unusual presentation of more common disease/injury

Multiple vortex vein ampulla varicosities

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Summary

Vortex vein ampulla varicosities are asymptomatic, harmless, findings in the retina. They are incidentally picked up on routine eye examination or when presenting for unrelated ocular symptoms. Clinicians and other eye care professionals unaware of this condition may be alarmed and may subject patients to unnecessary anxiety and expensive investigations. We present a rare case of varicosity of two vortex veins involving one quadrant of the retina. We have also shown simple clinical methods of establishing the diagnosis of vortex vein varicosity.

BACKGROUND

Although not uncommon, healthcare professionals unaware of this condition often subject patients to unnecessary anxiety and investigations. We have shown a simple method of diagnosing this condition during clinical examination without subjecting patients to any investigations.

CASE PRESENTATION

A 52-year-old white woman was referred by the optician to the eye casualty department with a suspicious looking lesion in the retina. When seen in the accident and emergency department, she gave a 1-week history of photopsia and a large floater in her right eye. She denied pain or blurring of vision. She was a high myope with no other significant previous ocular history. Her medical history included

systemic hypertension controlled with angiotensin-converting enzyme inhibitor and β -blocker. She was otherwise fit and well. On ocular examination her best corrected snellen visual acuity was 6/5 in the right eye and 6/4 in the left eye. Anterior segment examination was unremarkable with normal intraocular pressure in both eyes. She was noted to have a right posterior vitreous detachment accountable for her symptoms. However, left fundus examination revealed two raised ill-defined dark red choroidal lesions located near the equator at infero-nasal quadrant (figure 1). The two lesions were of different size. There were no changes in the surrounding or overlying retina. The lesions were more prominent in left down gaze and disappeared on indentation during indirect ophthalmoscopy. Based on the above findings, a clinical diagnosis

Figure 1 Showing two vortex veins varicosity in infero-nasal quadrant.

Figure 2 A dark red elevated ill-defined choroidal mass.

of vortex vein ampulla varicosities was made. The patient was reassured and explained to about the benign nature of her lump in her retina.

DIFFERENTIAL DIAGNOSIS

Choroidal naevus, choroidal melanoma and choroidal metastases.

OUTCOME AND FOLLOW-UP

Incidental finding in the retina with no pathological significance.

DISCUSSION

The choroidal veins in each quadrant converge into vortex veins through a wide ampulla.^{1 2}

Usually there is one vortex vein per quadrant of the eye, but accessory veins may also coexist.

The ampullae of the vortex veins are located in the oblique meridians at 1:30, 4:30, 7:30 and

10:30 o'clock position although the location may vary. The veins exit the globe obliquely through the scleral canal midway between the limbus and optic nerve before draining into the superior and inferior ophthalmic veins.

Lim *et al*³ have shown that up to 70% of eyes may have more than four vortex veins. Further, the number of a second or third vortex veins found in nasal quadrant is significantly higher than in the temporal quadrant; thus, increasing the possibility of a dilated ampulla occurring in the nasal quadrant.

Vortex veins can be easily visualised in patients with lightly pigmented fundus and in myopic subjects who have thin retina.

A marked dilatation of the ampulla is referred to as a varix or varicosity of the vortex vein ampulla. The appearance can often be confused with a choroidal melanoma, naevus or even metastases.^{4 5} This can lead to a series of investigations, which may be unnecessary.

In most cases, a single varix is found in one eye but it may be bilateral.⁶ However, having two varices in the same quadrant is extremely rare and has only been reported once.⁷

Clinically, the vortex vein varices may appear as an elevated mass, which is ill-defined and dark red in colour (figure 2). The size and shape of the varices may vary with the direction of gaze—that is, it can become more prominent when the eye gazes in the direction of the lesion.⁶ Pressure over the globe drains the blood out of the varix causing the lesion to disappear (figure 3). Hence, indentation of the globe while performing indirect ophthalmoscopy or applying gentle pressure with a Goldman 3 mirror contact lens may be a simple and effective way of diagnosing varices of the vortex vein ampulla.

Various other investigations have also been used to establish the diagnosis.⁴ 'B' scan ultrasonography may show acoustic solidity and gaze-evoked dynamic enlargement of the lesion. Indocyanine green angiography demonstrates early hyperfluorescence with gradual pooling of dye and gaze-evoked fluctuation of the hyperfluorescence in the lesion. Colour doppler imaging can also be performed.

In summary, we have reported the second case in literature of two vortex vein varices involving one quadrant of the retina. We also believe that diagnosis of vortex vein varicosity can be mostly established by clinical examination and ancillary investigation will be rarely required.

Figure 3 Note complete disappearance of the lesion on gentle pressure over the globe.

Learning points

- ▶ Varicosity of the vortex vein is not uncommon and you can see it if you look for it. This can be easily seen in myope and patients with lightly pigmented retina.
- ▶ Gentle pressure on the globe with a scleral depressor, three mirror or even a cotton bud while examining with a +78 / +90 dioptre lens will lead to obliteration of the lesion.
- ▶ Investigation may be needed only if the above is negative or if there is a coexisting lesion.

Competing interests None.

Patient consent Not obtained.

REFERENCES

1. **Ryan SJ.** *Retina*. Vol 1. Fourth edition. Philadelphia, PA: Elsevier Mosby 2006:34.
2. **Tasman W,** Jaeger E A. Chapter 22. *Duane's Foundation of Clinical Ophthalmology*. Vol 1. Philadelphia, PA: Lippincott 1999:18
3. **Lim MC,** Bateman JB, Glasgow BJ. Vortex vein exit sites. Scleral coordinates. *Ophthalmology* 1995;**102**:942–6.
4. **Gündüz K,** Shields CL, Shields JA. Varix of the vortex vein ampulla simulating choroidal melanoma: report of four cases. *Retina* 1998;**18**:343–7.
5. **Buettner H.** Varix of the vortex ampulla simulating a choroidal melanoma. *Am J Ophthalmol* 1990;**109**:607–8.
6. **Osher RH,** Abrams GW, Yarian D, *et al.* Varix of the vortex ampulla. *Am J Ophthalmol* 1981;**92**:653–60.
7. **da Cruz L,** James B, Gray R, *et al.* Multiple vortex vein varices masquerading as choroidal secondaries. *Br J Ophthalmol* 1994;**78**:800–1.

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