Disc edge veins of Kraupa: rare exit anomalies of the retinal vein

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Abstract
Disc edge veins of Kraupa are anomalies of the retinal venous system in which blood flows from the retina through a single venous trunk at or near the edge of the disc instead of at its centre. We report two examples of patients with these anomalies and illustrate the appearance of the anomalies with fundus photographs and a fluorescein angiogram. In one patient the retinal vein exited the eye through the sclera at the margin of the optic disc; in the other it disappeared into the disc tissue near the disc margin.

In 1915, Elschnig's assistant at the University Eye Clinic in Prague, Ernst Kraupa, published a drawing and description of a rare anomaly of the retinal venous system in which the main trunk of the retinal vein disappeared into the margin of the optic disc instead of its centre. The first and only bilateral occurrence of this anomaly was recorded in 1916. Kraupa added another example in 1924 in an extensive review and classification of arterial and venous anomalies at the optic disc margin. Altogether, we know of only four descriptions of Kraupa's...
Discussion

Our cases conform closely with Kraupa’s descriptions of disc edge veins draining the retina through a single trunk (Optikusrandvene). The veins in our two cases differ from each other in the way they exit the eye. In case 1 the vein enters the wall of the scleral canal, whereas in case 2 it enters the nerve itself. Our examination of published drawings of disc edge veins showed similar differences. Kraupa’s first case and von Herrenschwand’s bilateral case resemble our case 1; Kraupa’s second case and Oxilia’s case resemble our case 2.

There is no published report of a histologically studied disc edge vein. Therefore, the various paths taken by such veins after they disappear from ophthalmoscopic view and pass into the orbital venous plexus remain a matter for speculation. Our two cases show clearly that disc edge veins can take at least two routes out of the eye.

Elschnig stressed the extreme rarity of disc margin arteries occurring in conjunction with disc margin veins. Our case 2 is noteworthy in this regard. It is an example in which multiple disc margin arteries supplying all quadrants of the retina were present in a patient who also had a Kraupa’s disc edge vein. Lawford illustrated a similar anomaly in 1895.

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