Tip of the Month

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Innovation, Education, Communication, Implementation

A patient who presents with raised intraocular pressure or glaucoma and distended episcleral veins in one eye needs to be investigated for a spontaneous carotid – cavernous fistula

The Science behind the Tip

A carotid – cavernous sinus fistula is an abnormal vascular communication between the carotid artery system and the cavernous sinus. This can result in raised episcleral venous pressure and is a rare cause of elevated IOP and glaucoma[1].

Most occur after trauma and result in pulsatile proptosis, engorgement of the episcleral veins and a bruit. The remainder occur spontaneously with an insidious onset, mainly in middle-aged women. Because these dural carotid-cavernous sinus fistulas are low flow, less severe symptoms occur[2]. Prominent episcleral veins with minimal proptosis is found and two thirds have raised IOP or glaucoma[1].

Non-invasive imaging techniques can be used to confirm the diagnosis[3]. The most common treatment is occlusion of the fistula via a transarterial or transvenous route. This results in restoration of normal orbital and intracranial blood flow and reduction of IOP in most cases[2].

References

1) Ishijima K, Kashiwagi K, Nakano K et al., Ocular manifestations and prognosis of secondary glaucoma in patients with carotid-cavernous sinus fistula. Jpn J Ophthalmol 2003; 47: 603-8

2) Miller NR. Dural carotid-cavernous fistulas: epidemiology, clinical presentation and management. Neurosurg Clin N Am 2012; 23: 179-92.

3) Gandi D, Chen J, Pearl M et al. Intrancranial dural arteriovenous fistulas: classification, imaging findings and treatment. Am J Neuroradiology 2012; 33: 1007-13.

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