

When should one avoid operating on orbital cavernous venous malformations?

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The study titled “Incidence and Risk Factors for Poor Postoperative Visual Outcome After Excision of Orbital Cavernous Venous Malformations,” which was published in *Ophthalmic Plastic and Reconstructive Surgery* in March 2023, is the largest study to report the risk of visual loss and its independent risk factors during the removal of orbital cavernous venous malformations. Co-authored by the oculoplastic surgeon Kaveh Vahdani and the admired and respected Professor Geoffrey Rose, this study retrospectively analyzed the medical records, images, and outcomes of 290 patients who were operated between 1970 and 2021 at the Moorfields Hospital in London.

Cavernous venous malformation, historically called cavernous hemangioma, is the most common benign orbital tumor in adults. Its surgical removal is one of the most satisfactory procedures for orbital surgeons. Although choosing the most direct, safe, and elegant surgical access to the lesion can be challenging, its complete removal is usually possible with blunt and delicate dissection. However, visual loss is one of the major complications of this surgery, especially when approaching intraconal lesions. It can develop even in uneventful surgeries due to mechanical or thermal trauma, compression, or damage to the optic nerve’s vascular supply.

Clinical and radiological characteristics of the lesion generally allow a presumptive diagnosis of nondistensible cavernous venous malformations of the orbit, and the need for intervention is at the surgeon’s discretion. The surgeon considers the location of the lesion, functional or aesthetic repercussions, and the anticipated surgical risks before deciding to intervene. Furthermore, surgeons usually rely on their knowledge and experience to make this decision. This study’s results will greatly help surgeons identify the lesion patterns with the highest risk for visual loss, enabling an evidence-based discussion with patients regarding the surgical prognosis and risks involved.

The study’s results indicate that although we have increasingly delicate and safe surgical techniques, equipment, and instruments, poor visual outcomes can be observed in up to 5% of patients with “free” retrobulbar intraconal lesions and in approximately one-third of patients with apical lesions. In wedge-shaped apical lesions below the optic nerve and firm/fibrous lesions, the risk of postoperative visual loss related is significant. In some cases, it may even exceed the acceptable limit. Thus, in patients with cavernous venous malformations that demonstrate high-risk characteristics, we should initially consider alternatives to their surgical removal, such as fractionated stereotactic radiotherapy or even orbital resizing.

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