

Introduction

Intracerebral arteriovenous malformations (AVM’s) are a complex pathology. Of AVM’s that do not present with hemorrhage, treatment strategies are often predicated on reducing risk of hemorrhage and minimizing morbidity. Outcomes are often a result of the efficacy of the selected treatment. Radiosurgical treatment of certain AVM’s can have incomplete rates of obliteration and may also have minimal effect on the presenting, non-hemorrhagic, symptomology. Restriction of venous outflow can be associated with much of the presentation and treatment morbidity associated with intracerebral arteriovenous malformations (AVM’s).

Methods

We reviewed the surgical treatment of 2 cases of initially radiosurgically treated AVM’s in patients that exhibited primary clinical symptom of headache and persisted after radiosurgical treatment and whose symptoms abated after subsequent microsurgical resection. Intraoperative observations were reviewed and evaluated.

Results

Intraoperative indocyanine green angiography, represented with what appeared to be competitive outflow between the AVM nidus and the existing venous architecture. Flow was restored to normal once the AVM was micro surgically resected.

Conclusions

Venous outflow obstruction is likely to be a sizable contributive factor in occipital AVM’s that present with headache and symptoms of intracranial hypertension. These high flow lesions may be sub-optimally responsive to stereotactic radiosurgery. Microsurgical resection, with or without adjunctive endovascular embolization should be considered as an initial and definitive treatment strategy. Optimal outcomes may be achieved in patients with an anatomically correlated visual deficit

Learning Objectives

Understand the flow dynamics related to partially treated occipital AVM's and the potential role in altering the hemodynamics and exacerbating symptoms.

References

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