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Surgery mandated for bleeding venous angiomas?

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Surgery Mandated for Bleeding Venous Angiomas?

We read with interest the article by Rothfus et al. [1] in the January/February 1984 *AJNR* on cerebellar venous angioma. Three of four patients with bleeding cerebellar venous angiomas underwent successful surgery, and the authors concluded that surgical intervention may be warranted.

In the past year we have examined two female patients with angiographically confirmed cerebellar venous angiomas. One patient had a subacute cerebellar hematoma and underwent posterior fossa craniotomy for evacuation of the hematoma and excision of the malformation. She had a massive hemorrhagic venous infarction of the brainstem and cerebellum and died 3 weeks postoperatively. The second patient, with an unruptured right cerebellar venous angioma, had a 3 year history of headaches, tinnitus, and positional vertigo. Conservative management was elected, and the patient was unchanged after 6 months of follow-up.

In an attempt to determine possible therapeutic guidelines we reviewed 24 reported cases of cerebellar venous angioma that had adequate clinical information. We added our two cases and outlined the data in tabular form. Four (15.3%) of the 26 patients died: one was dead on arrival, one died of cardiac failure and intractable seizures, and the other two were unresponsive immediately postoperatively and died later. Four other patients had successful surgeries; in another, the outcome of surgery and follow-up were not mentioned. Three of four patients who had a successful postoperative outcome had hydrocephalus in addition to posterior fossa hematoma caused by a ruptured cerebellar venous angioma. Four other patients, two with cerebellar hematomas and two others with subarachnoid hemorrhage, had conservative treatment. These four patients showed marked improvement at follow-up.

Unlike Rothfus et al., no trend was apparent from our experience and literature review; the numbers are too small to draw any significant statistical data. However, there seems to be anecdotal evidence that surgical intervention may be indicated in patients who bleed, but the size of the posterior fossa hematoma and associated hydrocephalus must certainly be a strong consideration.

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Reply

We appreciate the comments of Toffol et al. and would like to comment on aspects of their letter and our article.

First, we would like to provide some follow-up on the four cases we presented. In the past year the operated cases (cases 1, 2, and 3) had uneventful courses, with no evidence of rebleeding or infarct. In comparison, the unoperated case (case 4) had relentless progression of vertigo and ataxia and on serial computed tomographic scans was found to have an enlarging cerebellar mass (hematoma) at the site of the venous angioma. The patient ultimately had surgery: the angioma and hematoma were removed, and there were no postoperative complications. In summary our four operated cases had excellent postoperative courses. The similarity of our cases must be stressed; they were all fairly focal lesions in surgically accessible regions of the cerebellum.

It is a misconception to believe that our experience should be extrapolated to all cases of cerebellar venous angioma. The decision to operate is not unifactorial; the mere presence of a venous angioma is not an indication to operate. Many variables enter into the picture: the patient's age and clinical state, the size and drainage pattern of the angioma, the location of the angioma, the degree and type of symptomatology, and the neurosurgeon's experience with posterior fossa surgery. Carte blanche for operation on every cerebellar venous angioma is not warranted, and definitely was not advocated in our article.

Obviously large series with long-term follow-up are required before the natural history of cerebellar venous angiomas can be understood fully. Until that information is available, we retain a conservative approach to the nonruptured cerebellar venous angioma, especially realizing the potential for harm in operating on such cases [1]. Our cases and literature review lead us to be more aggressive about the ruptured cerebellar venous angioma. Again the merits of surgery have to be decided on an individual basis; however, we surmise that life-threatening hemorrhages and inexorable neurologic decline are sufficient indications for aggressive surgical intervention. Our experience is limited, which is precisely why we qualified our statements about operations.

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