Intradural Extramedullary Cavernous Angioma: Case Report

Luciano Mastronardi, M.D., Luigi Ferrante, M.D., Marco Scarpinati, M.D., Franco Maria Gagliardi, M.D., Paolo Celli, M.D., and Aldo Fortuna, M.D.

Department of Neurological Sciences Neurosurgery, University of Rome "La Sapienza," Rome, Italy

Cavernous angiomas represent 5 to 12% of spinal vascular malformations and usually are located at the vertebral body level with possible extension into the extradural space. The intradural extramedullary cavernoma occurs in about 3% of cases, whereas extramedullary localization is extremely rare. A new case of an intradural extramedullary cavernous angioma is reported, and the clinical, diagnostic, and therapeutic aspects of this rare malformation are analyzed.

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Key words: Cavernous angioma, Intradural extramedullary neoplasm, Magnetic resonance imaging, Spinal surgery

Cavernous angiomas or cavernomas are malformations composed of vascular spaces similar to those of sinusoïds lined with a single layer of endothelial cells without any interposed glial or nervous tissue (4, 12, 19). They constitute 5 to 18% of intracranial vascular malformations (8, 13, 14, 21, 26) and 5 to 12% of the spinal ones (3, 9, 25). Spinal cavernomas are located more frequently in the vertebral body (9) with occasional extension into the extradural space, or they may be primitively extraosseous and extradural (15, 17). Approximately 3% of spinal cavernous angiomas are intradural (16, 25), usually with an intramedullary (1, 3, 6, 9, 11, 19, 20, 22, 24, 27) or, occasionally, extramedullary location (7, 10, 16).

We report a case of an intradural extramedullary cavernous angioma and discuss the clinical, diagnostic, and therapeutic features of this unusual spinal malformation.

CASE REPORT

A 49-year-old woman began to show a progressive loss of sensitivity in the left lower extremity 6 months before admission. Two weeks before admission, she began to suffer progressive weakness in both lower extremities. A neurological examination revealed slight spastic paraparesis (right more than left) and severe, bilateral (left more than right), painful, thonic and tactile hypesthesia with a superior level at the mamillary line. Magnetic resonance imaging (MR) of the spine (Fig. 1) showed a right lateral extramedullary space-occupying lesion at the T4 level; the lesion was inhomogeneously hyperdense in T1- and T2-weighted images with a lattice-like aspect typical of cavernous angioma.

A T4 laminectomy was performed, and, when the dura was opened, a red-blue, soft, juxta- medullary lesion, measuring 2 × 1.5 cm, was found; it was isolated from the contiguous T4 nerve root to which it adhered and was removed completely. The pathologic analysis revealed a cavernous angioma (Fig. 2). The postoperative period was uneventful, and the patient recovered strength in her lower extremities a few days after the operation. At a recent follow-up, 3 years after the operation, she was asymptomatic.

DISCUSSION

Except for two cases mentioned by Pia (16) and one by Krayenhuel and Yasargil (10) in large series of spinal vascular malformations, the report of Heimberger et al. (7) is the only case of an intradural extramedullary cavernous angioma described in detail in the literature available to us. In this case report, a 23-year-old man experienced many episodes of subarachnoid hemorrhage; the diagnosis of a spinal neoplasm was made after a myelogram that showed a filling defect at the T2-T3 level. A mulberry-shaped, juxta- medullary, angiomaticus nodule, which a pathologic analysis revealed to be a cavernous angioma, was removed completely. A subarachnoid hemorrhage and acute low back pain also were the initial symptoms in the case reported by Ueda et al. (23), in which the cavernous angioma was located in the cauda equina.

In the cases of Heimberger et al. (7), Ueda et al. (23), and now in ours, the cavernoma was adherent to a spinal nerve root, and therefore it is possible to speculate that the vascular malformation originated from abnormal periradicular vessels.

The possibility that a subarachnoid hemorrhage represents the initial syndrome of an intradural cavernoma is explained by the considerable rate of bleeding of this malformation (more than 25% of cases) (4, 21, 26). In our case, the vascular malformation behaved like a space-occupying mass with a clinical picture similar to that of a dorsal meningioma.

At present, MRI with the intravenous administration of gadolinium diethylene-triamine-pentaacetic acid (2) appears to be the most sensitive imaging modality for the diagnosis of both tumors and spinal vascular malformations. A pattern strongly suggestive of a cavernous angioma is the presence of a webbed core of mixed signal intensity ringed by a border of hypointensity (macrophage uptake of hemosiderin) (5) in T1- and, moreover, T2-weighted images (18).
The treatment of an intradural extramedullary cavernoma consists of total excision of the lesion, which can be more or less adherent to a nerve root as observed in the cases of Heimberger et al. (7) and Ueda et al. (23), as well as ours. The microsurgical technique makes the dissection and the removal of the vascular malformation less difficult.

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Reprint requests: Luciano Mastronardi, M.D., Clinica Neurochirurgica, Viale dell'Università 30/A, 00185 Rome, Italy.

REFERENCES
A “PICA Communicating Artery” Aneurysm: Case Report

Mary Louise Hlavin M.D., Yoshiro Takaoka M.D., Ph.D., and Alison S. Smith M.D.

Departments of Neurosurgery (MLH, YT) and Radiology (ASS), MetroHealth Medical Center, Case Western Reserve University, Cleveland, Ohio

We present an unusual case of an aneurysm of the distal posterior inferior cerebellar artery (PICA). The aneurysm was associated with a unilateral PICA that supplied both cerebellar hemispheres and arose from an anastomotic vessel to the contralateral circulation, a branch of the contralateral PICA. Such an aneurysm has not been reported previously. The association of vascular anomalies with aneurysms of the PICA is discussed. (Neurosurgery 29:926–929, 1991)

Key words: Aneurysm, Posterior inferior cerebellar artery

INTRODUCTION

Aneurysms of the posterior inferior cerebellar artery (PICA) are uncommon; they account for 0.49 to 3% of all intracranial aneurysms (11, 18, 31, 33). Most of these occur at the origin of the PICA from the vertebral artery. Peripheral aneurysms of the PICA are even more rare; they represent roughly 0.9 to 5.2% of all aneurysms of the PICA (9, 35), and some 98 cases


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COMMENT

This is an interesting case report of an unusual lesion of the spinal cord, which presented as an intradural extramedullary tumor, and a prior history of progressive myelopathy suggestive of a space-occupying lesion. There was no history of a subarachnoid hemorrhage, which is one of the ways in which cavernomas suddenly can manifest themselves. This is indeed what was shown on the histological study.

Cavernous angiomas are considered by most modern pathologists to be a form of telangiectasia; however, there is an earlier paper by Michael and Levin, published in 1936 (which I have been unable to locate, but it is referred to in Aminoff’s excellent monograph on spinal angiomas), which disagrees with this classification primarily on the basis of the fact that telangiectatic hamartomas exist only in cases in which the local capillaries are pathologically enlarged selectively (1).

In any event, both forms of this hamartoma are uncommon, and they are not specifically recognized preoperatively in published reports. It is important to recognize these entities because they can behave like the much more common type of vascular hamartomas known as arteriovenous malformations, including the more recently defined entity, the arteriovenous fistula, which is primarily a dural hamartoma. The latter type of arteriovenous malformation is suggested by some as being an acquired rather than congenital lesion, and the current classification therefore remains open to further discussion and possible improvement.

Ayub K. Ommaya

Washington, District of Columbia