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Intracranial cavernous angioma

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Abstract

We report 14 cases of intracranial cavernous angioma, analyzing the clinical features, with special reference to the risk of bleeding, radiological images and treatment in these and in 153 published cases, 167 in all. Cerebral hemorrhage occurred in 44%: typical (intraparenchymal or subarachnoid) in 24.6%, and masked by epilepsy, headache or neurological deficits in 19.2%. In patients with the typical hemorrhagic pattern posthemorrhagic mortality was 12.2%. Of the patients who had a hemorrhage 42.5% were left with more or less disabling neurological deficits, and 16.4% had a rebleed.
In discussing treatment we consider four groups of intracranial cavernous angioma: A) symptomatic in a zone of low surgical risk; B) asymptomatic with low surgical risk; C) symptomatic with high surgical risk; D) asymptomatic with high surgical risk. The treatment is surgical, except in the high risk asymptomatic variety, best followed initially with sequential CT scan and MRI and then considered for surgery if the lesion becomes symptomatic, increases in size or presents neuroradiological signs of bleeding.

Keywords: Angiography, cavernous angioma, CT, epilepsy, hemorrhage, MRI.

1 Introduction

Cavernous angiomas or cavernomas are vascular malformations made up of spaces similar to sinusoids consisting entirely of collagen and covered with a single layer of endothelial cells without any interposed glial or nervous tissue [12, 23, 27, 42, 54]. They account for 5–16% of intracranial malformations, venous angiomas, teleangiectases and varices [23, 27, 42, 54]. The post-mortem frequency of cavernomas is between 0.02% and 0.13% [4, 16].

Increasing number of new cases of cavernous angioma reported in recent years is explained by the wider use of computerized tomographic (CT) scanning and magnetic resonance imaging (MRI) in the diagnostic assessment of epilepsy and neurological disorders generally. These procedures have resulted in the earlier diagnosis of cavernomas, formerly included inder "cryptic" vascular malformations [7, 8, 22, 24, 39, 54].

We analyze the 14 cases of our series together with those of the largest published series and discuss the clinical features, emphasizing the risk of hemorrhage, radiological features, and treatment.

2 Material and methods

2.1 Clinical findings (Table I)

Between 1953 and 1987 our Neurosurgery Section team operated on 14 patients with intracranial cavernous angioma, 6 children (1–16 years) and 8 adults (19–63 years). The mean age was 21.75 years (median 20), and the most often affected decade of life was the first (5 cases: 36%) (Figure 1). Eight were females and 6 males, with a sex ratio of 4 : 3 in favor of females.

The lesion was on the left side in 8 cases and on the right in 6. It was parietal in 4, temporal in 4, frontal in 2, trigonal in 2, and extra-axial in 2 (parasellar in the middle cranial fossa in 1 and adhering to the dura mater of the convexity of the posterior fossa in 1). The duration of symptoms ranged from 1 month to 20 years (mean 32 months).

The presenting symptom was epilepsy in 10 cases (generalized in 8 and Jacksonian in 2) and headache in 4. Anticonvulsants, prescribed in 8 cases with epileptic onset, resulted in cessation of the seizures in 4. In the other 4 cases and in 2 not treated chemically the epileptic syndrome worsened. Responsiveness to drugs had no significant effect on the clinical course. In cases 1, 7, and 14,