Thalamic cavernous malformation

Case report

JOSÉ M. RODA, M.D., FERNANDO ÁLVAREZ, M.D., ALBERTO ISLA, M.D., AND MARTÍN G. BLÁZQUEZ, M.D.

Neurosurgery Service, Hospital “La Paz” and School of Medicine, Autonomous University of Madrid, Madrid, Spain

A 50-year-old man with a right hemiparesis was found to have a cavernous malformation in the left thalamus. The diagnosis was made using magnetic resonance (MR) imaging. The vascular malformation was totally removed by means of a transcallosal interhemispheric surgical approach, but the patient’s neurological deficit worsened. The role of MR imaging in establishing the diagnosis is emphasized and other published cases with thalamic locations are reviewed.

KEY WORDS • cavernous angioma • vascular malformation • hemorrhage • magnetic resonance imaging • computerized tomography

The majority of cavernous malformations occupy a supratentorial location, most commonly in the subcortical white matter, followed by the frontal and temporal lobes. A thalamic location has been only rarely reported.

Case Report

This 50-year-old man experienced an ictal episode in February, 1987, followed by motor aphasia and right hemiplegia. He was admitted to a local hospital, and computerized tomography (CT) revealed a left thalamic hematoma without mass effect. The patient underwent speech and motor rehabilitation and his neurological condition improved over the next 3 months. He did well thereafter and in August, 1988, he was referred to our hospital for evaluation.

Examination. Neurological examination on admission disclosed a mild right hemiparesis. Computerized tomography showed a hyperdense left posterior thalamic lesion, partly calcified, without significant enhancement after contrast administration (Fig. 1 left). Left carotid and vertebral angiography was normal. Magnetic resonance (MR) T1-weighted images showed a moderately hyperintense left posterior thalamic area with punctate zones of decreased signal intensity, surrounded by a prominent rim of hypointensity (Fig. 1 center). On T2-weighted images, the hyperintensity of the lesion and the hypointensity of the rim were much more evident (Fig. 1 right). These findings were compatible with the presumptive diagnosis of cavernous malformation.

Operation. With the patient in the semisitting position, the left thalamus was entered via a transcallosal interhemispheric approach. With the aid of the operating microscope, a mulberry-like mass was visualized and excised with very little bleeding. The histopathological examination revealed a cavernous malformation (Fig. 2).

Postoperative Course. In the immediate postoperative period, the patient presented motor aphasia and right hemiplegia. A control CT scan obtained 5 days later showed some blood remaining within the operative area and in the posterior half of the lateral ventricles. These remnants disappeared within the following week. By June, 1989, the patient’s condition had improved with ongoing rehabilitation, with only mild to moderate motor aphasia and right hemiparesis, allowing him to walk by himself.

Discussion

In a review of 22 personal intracranial cases of cavernous malformations published in 1988, Yaşargil did not mention any cases involving the thalamus. Among 25 cases, Vaquero, et al., found only one case of cavernous malformation in the left thalamus of a 24-
A 34-year-old woman who presented with progressive dysphasia and a right hemiparesis. After radical removal of the lesion, the patient died from respiratory complications. In 1986, Simard, et al., collected 138 cases with adequate histological descriptions published in the period between 1960 and 1986. Among all of these cases, only one patient was found to have a cavernous malformation located in the thalamus. This patient, originally reported by Becker, et al., in 1979, was a 34-year-old woman who had been transferred from another hospital after an ictal episode 3 months previously. Neurological examination disclosed moderate to severe
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hemiparesis and a right hemihypesthesia. Computerized tomography and angiography revealed an avascular left posterior thalamic lesion. At surgery, a cavernous malformation and hematoma were found in the posteromedial aspect of the thalamus. She did not improve during the postoperative period and developed a mild expressive dysphasia.

Deeply located cavernous malformations, like those lodged in the thalamus, present problems due to the risks of operative maneuvers in eloquent areas of the brain. The results of surgery in our patient and the two cases reviewed included one death and two instances of increased neurological deficits. These results should be balanced against the individual patient's clinical condition when surgery on a deep cavernous malformation is being considered. According to Rigamonti, et al., MR imaging is a precise method for the diagnosis of cavernous malformations since the presence of either multiple lesions, a reticulated core of mixed signal intensity, or a prominent hypointense encircling rim strongly supports the diagnosis of cavernous malformation. Thus, those patients with a benign clinical picture and a presumptive diagnosis of a thalamic cavernous malformation made by MR imaging should probably be followed conservatively instead of hastily being subjected to surgery.

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References


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