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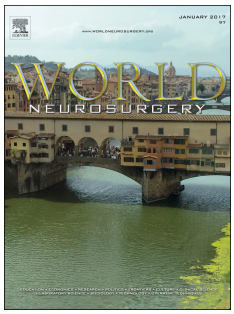

A Rare Case of Brain Angiolipoma Imitating Arteriovenous Malformation: Differential Diagnosis, Surgical Treatment and Literature Review

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A rare case of brain angiolipoma imitating arteriovenous malformation: differential diagnosis, surgical treatment and literature review.

Introduction. Angiolipomas (AL) are tumors of mesenchymal origin including abnormal vasculature and developed (mature) adipose tissue. Typically, they arise in subcutaneous tissue of the extremities. Usually, CNS angiolipomas are found in the extradural parts of the spine. There is only a dozen reports on intracranial angiolipomas published, all covering 1-2 patients experience [1-12]. Brain ALs are extremely rare and almost all presented observations describe tumors of the sellar region. On MRI study brain AL may be mistaken for pituitary adenoma or meningioma but fat saturation sequences and histological examination clear the diagnosis [2,6,10,12]. In those rare cases when AL is found in cerebral hemispheres, it is important to establish the diagnosis before surgery to plan correct treatment and avoid complications, particularly profound bleeding.

A brain arteriovenous malformation (AVM) is a congenital malformation of cerebral vessels with annual incidence of 1-1.42 cases per 100,000 population. Estimated risk of hemorrhage demonstrated in meta-analysis by Gross et al. is 2.2% for unruptured and 4.5% per year for ruptured AVMs [13]. At 20 years mark after diagnosis was established an accumulated risk of rupture is high comprising 42-67% [14,15]. AVM-related hemorrhages usually occur in young patients (mean age 28 years) and in most cases (58-81%) cause disabling neurological symptoms [15-17]. At onset, typical signs of the disease include parenchymatous hemorrhage (70%), seizures (15%) or neurologic symptoms (6%) due to steal syndrome caused by blood shunting [18]. Diagnosis of AVM is usually straight forward and based on brain CT, MRI and digital subtraction angiography (DSA).

Below we present a rare case of angiolipoma of the right frontal lobe, which manifested with AVM-like features, both clinically and on neuroimaging. The discrepancy with the primary diagnosis became evident during surgery and was confirmed later by the histological examination.

Case report

Patient A., female, 14 years old. The disease onset was reported at 8 months with focal seizures in the left hand, twitching of the left eyelid, sometimes with the head rotation to the left, without loss of consciousness. These episodes were rare, 1-3 times per year. At 5 years the pattern of seizures had gradually changed: during paroxysm, the girl could talk, sing songs, or