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Symptomatic cavernous hemangioma of fronto-parietal region of the brain in a young female patient – a case report

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ABSTRACT

Introduction: Cavernous hemangioma is a being blood vessel malformation that can be located in the central nervous system. Although most patients who are found to have a CNS hemangioma are asymptomatic, the entity can cause a wide spectrum of symptoms including severe ones like epileptic seizures, stroke, diplopia, dysfasia or cognitive functions' disorders.

Case report: A 21-year-old female patient was admitted to the Department Of Neurology due to transient vision impairment, dysfasia, headache and tinnitus. Physical examination revealed no focal neurological signs. A brain MRI was performed. A cavernous hemangioma of 7-8 mm in size was found. The patient was examined by neurosurgeon as well, who did not qualify her for an immediate surgery.

Discussion: Although cavernous hemangiomas are often asymptomatic, sometimes they can be a causative factor of different neurological symptoms. One should always take into account a possibility of cerebral hemangioma presence in young patients that suffer from headaches, tinnitis or have impaired vision.

Keywords: Hemangioma, Cavernous, Central Nervous System; Headache; Diagnostic imaging; Cerebral Hemorrhage

INTRODUCTION

Cavernous hemangioma is a blood vessel malformation of being nature, that can sometimes appear in central nervous system (and then is often called Cerebral Cavernous Malformation, CCM) [1]. The incidence of the entity in general population is about 0.4-0.5% (with higher rates of familial occurrence) and constitute 5-10% of all intracranial malformations. Cavernous hemangiomas have a 0.7-1% of annual rate of hemorrhage incidence. According to the literature data, about 4 to even 35% of cerebral cavernous malformations are located in the brainstem [2, 3]. Although in most patients the hemangioma remains clinically silent, some of affected individuals can experience different symptoms in which the most often ones are headaches, seizures and focal neurological deficits [3, 5].

CASE REPORT

A 21-year-old female patient was admitted to the Department of Neurology due to transient dysfasia, diplopia, headache and tinnitus. Physical examination on the admission revealed no signs of focal neurological deficits. A brain CT performed in the A&E Department showed an atypical, hyperdense lesion in the left fronto-parietal region, which could be a subtle hemorrhage. The patient was referred for MRI. The examination revealed a cavernous hemangioma of 7-8 mm in size, located in the region of fronto-parietal junction, surrounded by

hemosiderin deposists. Moreover, it turned out, that the patient was hospitalised 3 years before the incident because of limited intracranial hemorrhage.

The patient was examined by neurosurgeon due to possible surgical treatment. The physician described the patient's state as not requiring an immediate surgery. The main reason was the localization of the hemangioma – there was no safe entry for a surgeon, and the surgery might cause the damage in pyramidal tract resulting in upper limb paralysis. Besides, during the hospitalization, the symptoms had withdrawn and the patient felt better. The neurosurgeon left the decision whether to excise the hemangioma according to schedule or not to the patient. The patient declined the possibility of surgical treatment. The patient was discharged from the hospital with recommended control brain MRI in twelve months, or earlier in case of any neurological symptoms occurred.

DISCUSSION

Untreated cerebral cavernous malformations can cause symptomatic intracranial hemorrhages, risk of which remains uncertain. Some studies suggest, that annual risk of hemorrhage is from less than 1% to even 15% during five-year follow-up [3, 6]. The risk seems to be even higher in patients, who have already undergone an intracranial hemorrhage, and is in general up to 40%. Brainstem location increases the risk of hemorrhagic incidents significantly [7, 8, 9]. The risk is also higher in females than males, especially younger than 40 years of age [3, 9].

Last decade brought an improvement of microsurgical techniques. The surgery remains the most effective treatment in symptomatic cerebral cavernous malformations. The effects are especially well seen in the presence of seizures – the epilepsy is almost always resolved by the surgical treatment [3, 4, 10]. A meta-analysis involving 3424 patients shows, that the risk of neurosurgical excision of the hemangioma compares favorably with the risk of the incidence of intracranial hemorrhages in an untreated cavernous hemangioma, although the long-term effects stays unknown, especially in stereotactic radiosurgery [11]. However, because of the high risk of surgical morbidity and the fact, that most patients with cavernous hemangiomas stay asymptomatic, the active treatment of all patients does not seem like a proper way of dealing with this entity. The literature data suggest, that the surgery should be perform in carefully selected patients, who have symptomatic lesions, the hemangioma is in an accessible location with safe entry zone and the lesion provoked more than one significantly symptomatic intracranial hemorrhage. In other cases, watchful waiting is recommended. The use of

medication or stereotactical radiosurgery in the treatment of cavernous hemangioma of the brain stays controversial [4, 5].

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