Orginal Article
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Incidental Cavernous Angioma

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Abstract

Introduction: Besides developmental venous anomaly (DVA), arteriovenous malformation (AVM) and capillary telangiectasia, cavernomas are one of the vascular malformations of the central nervous system. In this case report, we present a case diagnosed with cavernous angioma in the left posterior frontal region, who presented to our emergency department with the complaint of numbness in her left hand.

Case: A 38-year-old male patient was admitted to the emergency department with complaints of numbness in his left hand in the last few days. Brain CT examination showed a left sided hyperdensity at the level of vertex, which was suspected of hemorrhage. Afterwards, unenhanced and contrast-enhanced MRI scans of the brain revealed an image, which was considered primarily as hemorrhagic cavernous angioma, showed minimally heterogeneous intravenous contrast enhancement, hyperintense on T1-weighted images and heterogeneously hyperintense on T2-weighted images, and measured approximately 11 mm in size in the left posterior frontal region at high ventricular level. The patient was consulted to neurology and neurosurgery departments, and was hospitalized in the neurosurgery service.

Discussion: Cavernomas are the third most common vascular malformations after developmental venous anomaly and capillary telangiectasias, accounting for 5-13% of all cerebral vascular malformations. Cavernous angiomas can be seen in any area of the central nervous system (CNS), mostly in cerebral hemispheres (80%). They are most commonly located in the subcortical region and frontal-temporal lobes in the cerebral parenchyma. The most common clinical symptoms include epileptic seizures, intracerebral hemorrhage, focal neurological symptoms and headache. Magnetic resonance imaging is the most sensitive radiological diagnostic method for cavernous angiomas. Asymptomatic cases of cavernous angiomas are followed by periodic MRI studies, surgical resection of the lesions is recommended because recurrent hemorrhages may cause permanent neurological deficits in symptomatic patients.

Conclusion: In conclusion, patients with cavernoma present with atypical complaints to the emergency department and can be diagnosed incidentally. Cavernomas are lesions of vascular origin, which tends to be located more frequently in the frontotemporal lobes and subcortical areas, is often accompanied by developmental venous anomalies, and has a radiological appearance that varies according to the extent of hemorrhage.

Keywords: Numbness in the left arm, intracranial mass

Introduction

Besides developmental venous anomaly (DVA), arteriovenous malformation (AVM) and capillary telangiectasia, cavernomas are one of the vascular malformations of the central nervous system[1]. The incidence of cavernomas is approximately 0.5% in autopsy series and 0.7% in magnetic resonance imaging (MRI) studies[1,2,3]. Cavernomas are frequently asymptomatic lesions usually incidentally detected in brain imaging studies for unrelated reasons, but may also lead to headache, epileptic seizures and stroke-like symptoms[1]. In this case report, we present a case diagnosed with cavernous angioma in the left posterior frontal region, who presented to our emergency department with the complaint of numbness in her left hand.

Case

A 38-year-old male patient was admitted to the emergency department with complaints of numbness in his left hand in the last few days. He had a history of hypertension. Vital parameters were as follows: body temperature, 36°C;heart rate, 72 beats per minute; breathing rate, 18 breaths per minute; and blood pressure, 130/70 mmHg . The (ECG) examination showed normal sinus rhythm with a troponin level within the normal reference range. His neurological examination was normal and showed no neurological deficits. Brain CT examination showed a left sided hyperdensity at the level of vertex, which was suspected of hemorrhage (Figure-1). Afterwards, unenhanced and contrast-enhanced MRI scans of the brain revealed an image, which was considered pri-

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marily as hemorrhagic cavernous angioma, showed minimally heterogeneous intravenous contrast enhancement, hyperintense on T1-weighted images and heterogeneously hyperintense on T2-weighted images, and measured approximately 11 mm in size in the left posterior frontal region at high ventricular level (Figure 2). The patient was consulted to neurology and neurosurgery departments, and was hospitalized in the neurosurgery service.

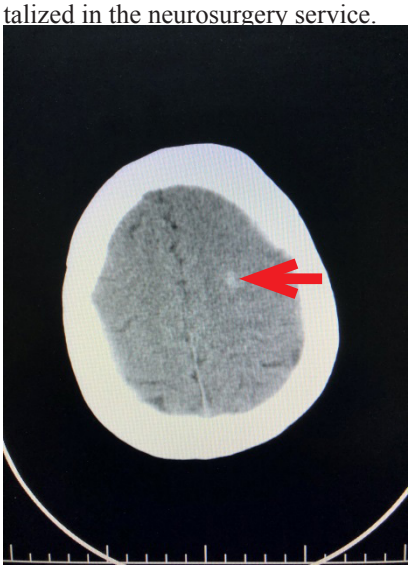

Figure 1: Brain CT examination showed a left sided hyperdensity at the level of vertex, which was suspected of hemorrhage.

Discussion

Cavernomas are the third most common vascular malformations after developmental venous anomaly and capillary telangiectasias, accounting for 5-13% of all cerebral vascular malformations[1,4,5]. Although cavernomas are considered rare lesions when first discovered, they were increasingly detected in neuroradiological examinations, especially after advances in MRI studies[1]. There are two types, including sporadic and familial cavernomas. The sporadic lesions are single, whereas the number of familial lesions is more than one.Familial forms of cavernomas show autosomal dominant inheritance[6]. The differential diagnosis of multiple cavernous angiomas should include the foci of hypertensive hemorrhages, amyloid angiopathy, and capillary telangiectasia. Patients with hypertensive hemorrhage have a long history of hypertension[7]. Our case also had a history of hypertension.

Cavernous angiomas can be seen in any area of the central nervous system (CNS), mostly in cerebral hemispheres (80%). They are most commonly located in the subcortical region and frontal-temporal lobes in the cerebral parenchyma. Infratentorial involvement is rarely seen, although they may show involvement on both sides of the tentorium[8,9]. Although the pons is the most common site of involvement in the brainstem, extraaxial involvement has been identified, albeit rare-

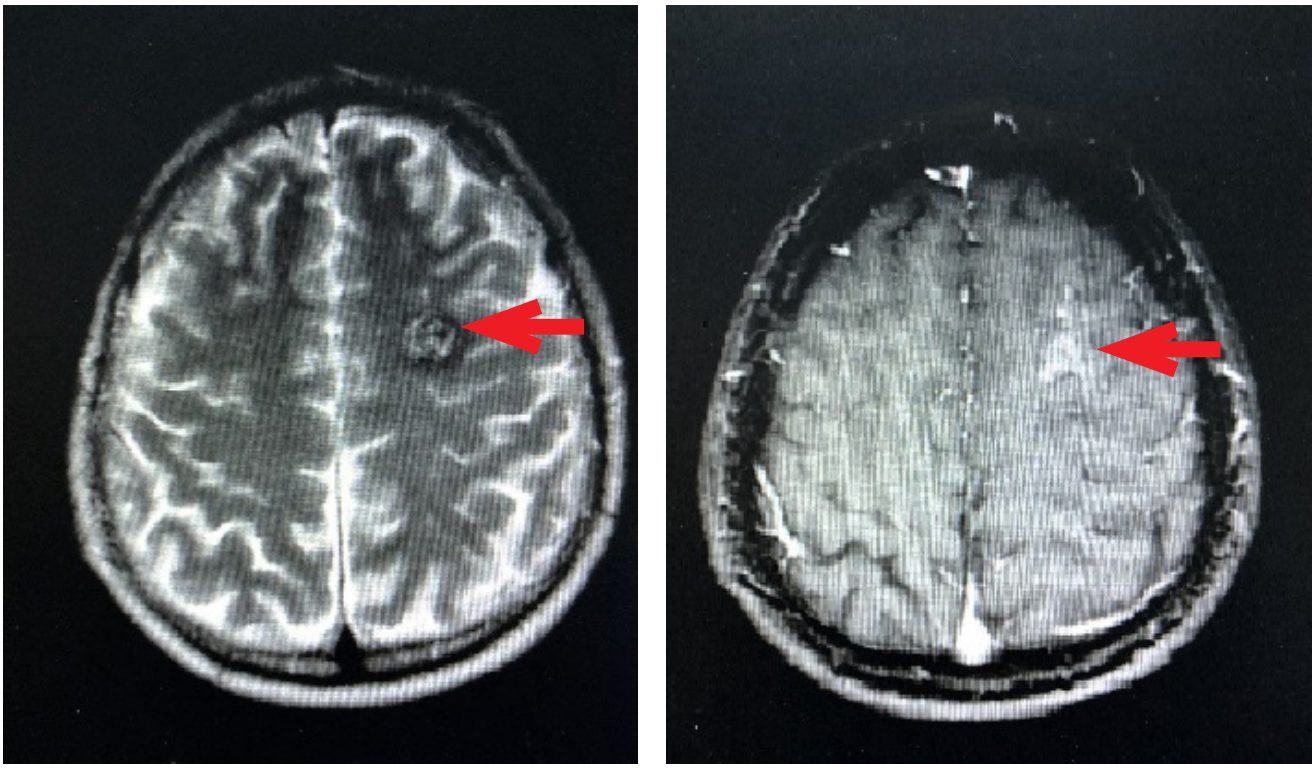

Figure 2: MRI scans of the brain revealing an image, which was considered primarily as hemorrhagic cavernous angioma, showed minimally heterogeneous intravenous contrast enhancement, hyperintense on T1-weighted images and heterogeneously hyperintense on T2-weighted images, and measured approximately 11 mm in size in the left posterior frontal region at high ventricular level

ly. Spinal involvement is usually seen in the epidural space, whereas intramedullary involvement is rather rare.

Symptoms and symptoms in cavernous angiomas vary depending on the extent of hemorrhage and the size and location of the lesion. If thrombosis develops in the cerebral lesion, they may cause infarction. The most common clinical symptoms include epileptic seizures, intracerebral hemorrhage, focal neurological symptoms and headache. Literature review showed that 50-60% of the patients with cavernous angioma present with epileptic seizures, 30% with focal neurological deficits and 25% with headache. Approximately 20% of cases present with hemorrhage. In addition, they may rarely cause subarachnoid hemorrhage. Cavernous angiomas also predispose to stroke and epileptic seizures throughout life. The incidence of re-hemorrhage in cavernous angiomas has been reported as 20 to 80% for weeks to years (10).

CT examination of cavernous angiomas shows well-demarcated focal hyperdense lesions, with and without mass effect or edema. They show little or no contrast enhancement. Magnetic resonance imaging is the most sensitive radiological diagnostic method for cavernous angiomas. Cavernous angiomas are usually 1 to 2 cm in size (11). The treatment strategy of cavernous angiomas varies according to whether the lesion is symptomatic or not. If brain MRI detects an incidental asymptomatic cavernous angioma, a conservative approach is followed and annual MRI studies are performed. Asymptomatic cases of cavernous angiomas are followed by periodic MRI studies, surgical resection of the lesions is recommended because recurrent hemorrhages may cause permanent neurological deficits in symptomatic patients.

Conclusion

In conclusion, patients with cavernoma present with atypical complaints to the emergency department and can be diagnosed incidentally. Cavernomas are lesions of vascular origin, which tends to be located more frequently in the frontotemporal lobes and subcortical areas, is often accompanied by developmental venous anomalies, and has a radiological appearance that varies according to the extent of hemorrhage.

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