Case 14567

Case report of calcified intraventricular meningioma and review of literature

Published on 07.04.2017

DOI: 10.1594/EURORAD/CASE.14567
ISSN: 1563-4086
Section: Neuroradiology
Area of Interest: Head and neck
Procedure: Imaging sequences
Imaging Technique: CT
Imaging Technique: MR
Special Focus: Neoplasia
Case Type: Clinical Cases
Authors: Dr Zalak J Panchal1, Dr Bhoomi Modi2
Patient: 49 years, female

Clinical History:

A 49-year-old female patient presented with the chief complaints of headache for the past year. The headache was initially occipital and then later became generalized. There were no symptoms of raised intracranial pressure like seizures, loss of consciousness or vomiting. The patient had neither previous head irradiation nor head trauma.

Imaging Findings:

Computed tomography (CT) shows a hyperdense space-occupying lesion in the trigone of the left lateral ventricle. Magnetic resonance imaging (MRI) shows an approximately 28 x 12 x 13 mm sized well-defined lobulated altered signal intensity lesion in the trigone of the left lateral ventricle extending into the occipital horn of the left lateral ventricle, which is hypointense on T1 and T2 weighted images. An approximately 12 x 11 x 12 mm sized well-defined cystic lesion is seen adjacent to the above mentioned lesion, which appears hyperintense on T2WI and shows suppression on FLAIR images, a possibility of peritumoral cyst formation. The lesion shows blooming on FFE images and peripheral rim of enhancement on post-contrast study. No e/o restriction on DWI image is seen.

Discussion:

The incidence of primary intraventricular meningiomas is rare, accounting for only 0.5 to 5% of all intracranial meningiomas. Although rare, they do present as one of the commonest adult intraventricular neoplasms. [1] These tumours are believed to originate from meningotheial inclusion bodies located in the tela choroidea or from mesenchymal stroma of the choroid plexus. [2]

Most of these tumours occur between the 4th and 6th decade of life, with a notable female preponderance of 2:1. [1] Owing to its location in a deeper site in the brain they tend to remain asymptomatic and become clinically evident only on attaining large sizes. [3] Large tumours could give rise to symptoms either due to compression of adjacent brain structures or due to obstruction of normal CSF drainage. [3] Resultant symptoms include headache, visual defects, memory changes and seizures. [3]

The most common site of origin is trigones of the lateral ventricles, and the left lateral ventricle is more frequently affected than the right. [4, 5] Less common sites of origin include the foramen of Monro, within the 3rd ventricle or in the 4th ventricle.

On imaging the intraventricular meningiomas show attenuation and signal characteristics similar to other types of meningiomas. On CT (Computed tomography) they appear as a well-defined lobulated mass with attenuation higher
than the surrounding brain parenchyma. [1] Calcification within the lesion is common, accounting for about 50% of cases [1, 5, 6]. Following contrast administration they show heterogeneous contrast enhancement except for cystic and calcified areas. On MRI (Magnetic Resonance Imaging) it appears isointense to hypointense on T1 weighted images and isointense to hyperintense on T2 weighted images with heterogeneous enhancement on post-contrast study. [1] Cyst-like areas due to either cystic degeneration or necrosis may occasionally be seen within the lesion [1]. MR spectroscopy shows a pattern that is similar to other types of meningiomas, with decreased amounts of N-acetylaspartate and creatine; increased amounts of choline; and variable amounts of lactate, lipids, and alanine [1]. By using clinical, demographic, and imaging findings it is possible to limit the differential diagnosis of the common intraventricular neoplasms. As with other meningiomas, complete excision is possible, surgical excision is curative and therefore the treatment of choice. Preoperative embolization may be very useful in limiting blood loss and in size reduction of the mass before surgery. [1]

**Differential Diagnosis List:** Calcified intraventricular meningioma, Ependymoma, Astrocytoma

**Final Diagnosis:** Calcified intraventricular meningioma

**References:**

Koeller KK, Sandberg GD From the archives of the AFIP Cerebral intraventricular neoplasms: radiologic-pathologic correlation. Radiographics. 22 (6): 1473-505 (PMID: 226025118)


Description: Axial image of brain shows hyperdense lesion in the trigone of the left lateral ventricle extending into the occipital horn of the left lateral ventricle. Origin: Radiology department, Civil hospital, Ahmedabad, India
Description: Plain TIWI axial images show hypointense lobulated lesion in the trigone of the left lateral ventricle extending into the occipital horn of the left lateral ventricle. Origin: Radiology department, civil hospital, Ahmedabad, India
Description: Plain T2WI axial images shows hypointense lobulated lesion in the trigone of the left lateral ventricle. Well-defined hyperintense cystic lesion adjacent to the lesion, suggestive of peritumoral cyst. Origin: Radiology department, civil hospital, Ahmedabad, India
Description: The lesion in trigone of the left lateral ventricle shows blooming on FFE images, consistent with calcification. Origin: Radiology department, civil hospital, Ahmedabad, India
Description: On post contrast study, the lesion shows peripheral rim of enhancement. Origion: Radiology department, civil hospital, Ahmedabad, India