

Lipoma of the Quadrigeminal Plate Cistern

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Citation

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Abstract

A 37-year-old Turkish woman with an intracranial lipoma of the quadrigeminal region is reported. Intracranial lipomas are extremely uncommon condition and generally occur in the midline areas, with an incidence of less than 0.1% of all intracranial tumours. Most lipomas were incidentally detected by autopsy or computed tomography (CT). The autopsy incidence of intracranial lipoma is 0.08% to 0.46%, while the incidence of CT finding is no more than 0.03% to 0.06%. Most intracranial lipomas are found incidentally during neuroradiological investigations. CT and MR examination usually lead to the diagnosis, because of the very low attenuation values of lipomas on CT and the short T1 and T2 on MR. We describe the findings of imaging studies, including computed tomography (CT), magnetic resonance (MR) imaging, along with a brief review of the literature.

INTRODUCTION

Diagnosis of Quadrigeminal Cistern Lipoma is always certain on imaging, and therefore histopathological confirmation is never practically required. However from a theoretical point of view, there are many other lesions which can present in this cistern on imaging. These are Arachnoid cysts, Tectal plate cyst, Tectal masses (Gliomas), Supracerebellar abscess, Dermoid and Epidermoid cysts, Thalamomesencephalic Ossified Cavernoma, Meningioma, Ruptured P4 segment aneurysm of the posterior cerebral artery, and rarely pineal region mass¹.

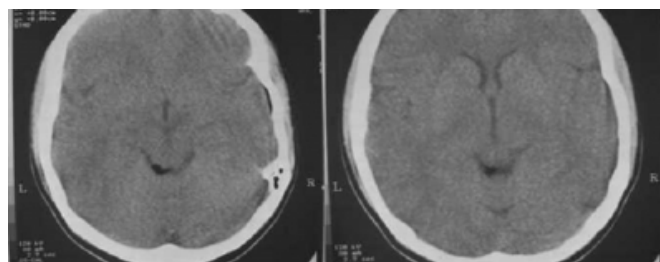
CASE REPORT

We report the case of a rare lipoma in the quadrigeminal cistern in a 37 year-old female presenting with headache. She was referred to our hospital by a local physician. Neurological and systemic examination were normal.

Blood analysis was within normal limits and EEG did not show abnormal discharges. Cranial CT revealed a mass (10 x 5 mm in size) in the quadrigeminal plate cistern which had very sharply demarcated homogeneous low density indicative of a lipoma (Fig. 1).

Figure 1

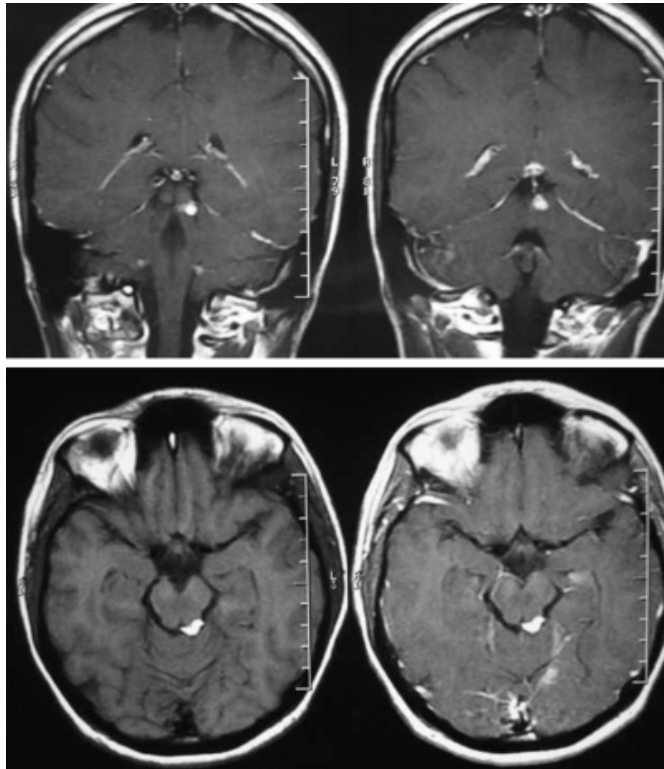
Figure 1: Axial CT image shows a hypodense lesion having fat attenuation in the left quadrigeminal plate cistern.



Cranial MR demonstrated marked hyperintensity on T1-weighted (T1-W) images and relatively high intensity on T2-weighted (T2-W) images (Fig. 2). These signal intensities were consistent with fat. The intracranial location of the lipoma was left-sided quadrigeminal cistern. Sagittal MR revealed a normal corpus callosum. No postcontrast enhancement was seen in MR.

Figure 2

Figure 2: Coronal T1-weighted MRI scan and axial T1-weighted MRI scan demonstrating the lipoma in the left quadrigeminal plate cistern.



DISCUSSION

Intracranial lipomas are more frequent in the quadrigeminal region of the brain; most are asymptomatic, generally caught incidentally ². Intracranial lipomas are accepted to be congenital malformations stemming from the abnormal differentiation of the persistent meninx primitiva, a area that constitutes the inner level of pia arachnoid and dura ².

Lipoma in the quadrigeminal region has previously been reported as lipoma in the quadrigeminal cistern, the quadrigeminal plate, the ambient cistern, the superior vermis, or the superior medullary velum ¹. The most common sites are the corpus callosum, quadrigeminal/superior cerebellar cistern, suprasellar/interpeduncular cistern, cerebellopontine angle cistern and sylvian cistern ³. Lipomas of the quadrigeminal plate/ambient cistern produce symptoms in 20% of patients

³.

We reported a patient with incidental lipoma of the quadrigeminal region. There was no symptoms related with lesion therefore there was no surgical indication.

Treatment of intracranial lipomas very rarely requires a direct surgical approach, because these tumors rarely reach a size sufficient to cause a mass effect or intracranial hypertension and this tumor strongly adheres to important vessels, so preservation is very difficult even when using microsurgical techniques ¹.

Surgical management may result in high morbidity and mortality due to the very vascular nature of intracranial lipomas⁷ and their strict adhesion with adjacent tissue ².

Surgical resection should be considered in epileptic patients who fail to respond to the medical treatment. Radical surgical extirpation is usually contraindicated for two reasons: first, the generally dense vasculature of the lipoma and its tendency to adhere to surrounding neural tissue, especially to the cranial nerves, makes resection technically difficult and hazardous; and second, the fact that the lesion does not grow or compress brain tissue makes surgery unnecessary for stable or asymptomatic cases. The necessity of surgical interventions aiming to relieve specific, medically intractable symptoms, such as vertigo or trigeminal neuralgia, remains inconclusive ².

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