## **Intracranial lipoma**

Intracranial lipomas are rare and presumably of maldevelopmental rather than neoplastic origin.

In 1818, Meckel described a lipoma of the chiasmatic cistern.

The following reports date back to 1856 for the corpus callosum, the most frequent localization, and to 1859 for the cerebellopontine angle (CPA).

Autopsy studies suggest incidences of 0.08% in general and 0.46% in preselected brain autopsy material.

This correlates with data obtained by computed tomography (CT) screening of 17,500 patients where the overall incidence of intracranial lipomas was 0.06%. In the subgroup of 2,300 patients with brain tumors the incidence was 0.34%. Another study described five lipomas in 6,125 CT scans (incidence 0.08%).

A investigation observing three lipomas in 1,100 scanned brain tumor patients (0.3%) confirms that modern imaging techniques do not increase the incidence compared with autopsy studies.10 In a review of 150 patients, 81% of all lipomas were found supratentorially and 82% in the midline, where 50% were related to the corpus callosum."I Similar results are reported by others.

Supratentorially, they often remain asymptomatic and can be associated with malformations <sup>1)</sup>.

## Tectal plate lipoma

Tectal plate lipoma

## Evaluation

May be diagnosed by CT, MRI (the study of choice), and ultrasound in infants. CT: Low density, may have peripheral calcification (difficult to appreciate on MRI).

Differential diagnosis on CT: primarily between a dermoid cyst, intracranial teratoma, and germinoma.

MRI: characteristic finding is a midline lesion with signal characteristics of fat (high intensity on T1WI, low intensity on T2 weighted image).

Intracranial lipomas are most commonly located in the interhemispheric fissure in the region of the pericallosal cistern (50%), ambient or quadrigeminal cisterns (20-25%). Other sites include cerebellopontine, suprasellar, sylvian, prepontine cisterns and rarely over the cerebral hemispheres.<sup>2)</sup>.

The majority of intracranial lipomas are detected incidentally. Symptoms, if present include those of raised intracranial pressure (due to obstructive hydrocephalus), seizures, and psychomotor

retardation and cranial nerve deficits. Those with subcutaneous extension of the intracranial portion present for cosmetic reasons. Half of intracranial lipomas are associated with midline brain malformations of varying severity which include hypoplasia/aplasia of corpus callosum and vascular abnormalities. The latter include distension, kinking or narrowing of arteries and veins, engulfment of cerebral arteries, arteriovenous malformation and aneurysm. Intracranial lipoma with subgaleal extension is rare with isolated case reports in literature <sup>3)</sup>.

Fourteen patients with a variety of symptoms and diagnosed with intracranial lipoma were included in the study. Problems presented upon admission, neurological findings, and other existing system abnormalities were evaluated. Localization of the lipomas and accompanying pathologies were determined by using computerised tomography and magnetic resonance imaging.

The most frequent reasons for admission of patients with intracranial lipomas were: headache 7 (50%), trauma 3 (21.5%), epilepsy 3 (21.5%) and one with symptoms due to the local mass effect of tumor (7%). Although the pericallosal region is accepted as the region where lipomas commonly occur, the study of Yilmaz et al., found the most frequent occurrence in the quadrigeminal cistern. Intracranial lipoma calcification was only evident in 1 of the 14 patients. In addition, contrary to the expectations, intracranial and extracranial lesions accompanying lipomas were rare. All patients received systematic treatment.

This study showed that intracranial lipomas are more frequent in the quadrigeminal region of the brain; most are asymptomatic, generally caught incidentally; and accompanying intracranial and extracranial pathologies are less common than expected <sup>4</sup>.

1)

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2)

Yildiz H, Hakyemez B, Koroglu M, Yesildag A, Baykal B. Intracranial lipomas: Importance of localization. Neuroradiology 2006;48:1-7.

Reddy SR, Panigrahi M, Varma R. Intracranial lipoma with subgaleal extension: An interesting case report with review of literature. Neurol India. 2012 Jul-Aug;60(4):444-6. doi: 10.4103/0028-3886.100734. PubMed PMID: 22954994.

Yilmaz N, Unal O, Kiymaz N, Yilmaz C, Etlik O. Intracranial lipomas-a clinical study. Clin Neurol Neurosurg. 2006 Jun;108(4):363-8. PubMed PMID: 15893874.

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