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Lipoma of the Corpus Callosum: Case Report

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Abstract **Case Report**

Lipomas of the corpus callosum are rare congenital lesions, representing about 5% of tumors in this area. They are typically asymptomatic and often discovered incidentally. A case of a 74-year-old patient with altered consciousness showed an anterior lipoma on CT, characterized by a lobulated, hypodense mass with calcifications. These lipomas are categorized into anterior and posterior types, with anterior ones being larger and often associated with agenesis of the corpus callosum. CT and MRI are crucial for diagnosis and evaluation.

Keywords: Lipoma, Fatty Density, CT, MRI.

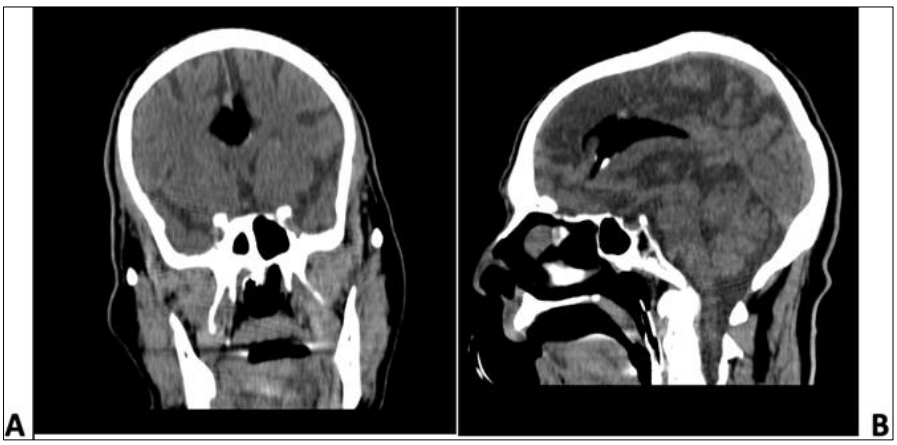
INTRODUCTION

Lipomas of the corpus callosum are a rare congenital abnormality, representing only 5% of all tumors affecting this central commissural structure [1]. As benign, adipose-containing lesions, they are classified as malformative heterotopias rather than true neoplasms [2]. While intracranial lipomas overall are exceedingly uncommon, comprising less than 0.1% of all intracranial tumors, the corpus callosum is a relatively frequent site of occurrence, accounting for around 45% of cases [3].

These midline lesions are typically asymptomatic and discovered incidentally on neuroimaging studies performed for unrelated reasons. However, a subset of patients may experience symptoms such as headaches or seizures, depending on the extent and location of the lipoma as well as any associated congenital abnormalities [1-4]. Callosal lipomas have been reported in association with agenesis or dysgenesis of the corpus callosum in over half of cases [1].

PATIENT AND OBSERVATION

This is a 74-year-old patient, with no significant past medical history, who presents with non-febrile and non-traumatic altered consciousness, with a Glasgow Coma Scale score of 13-15 and a craniocerebral CT scan, before and after injection of contrast medium, showed oblong lesion formation visible in the anterior and middle part of the interhemispheric fissure, lobulated in places, hypodense on spontaneous contrast of fat density, with a few peripheral calcifications measuring 60x58x21mm.



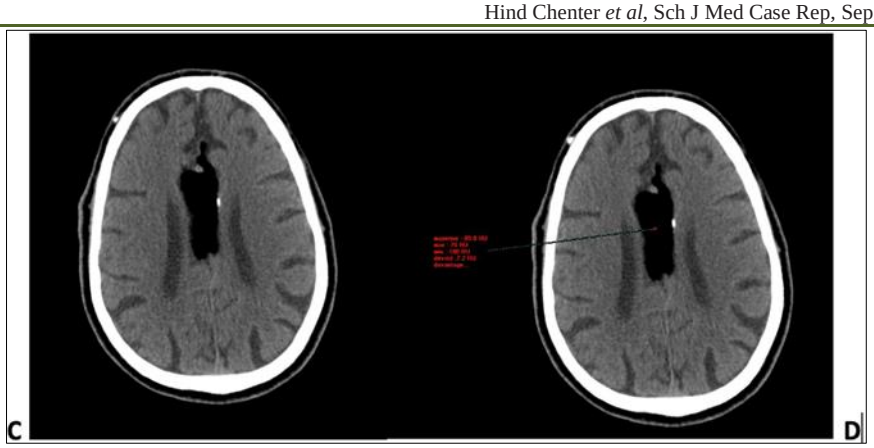


Figure 1: (A, B, C, D): Spontaneous contrast brain CT, in axial, coronal and sagittal slices, showing: showed oblong lesion formation visible in the anterior and middle part of the interhemispheric fissure, lobulated in places, hypodense on spontaneous contrast of fat density, with a few peripheral calcifications.

DISCUSSION

Intracranial lipomas were first described in 1818 by Meckel, who found a lipoma affecting the optic chiasm. In 1856, Rokitansky was the first to describe a lipoma associated with agenesis of the corpus callosum [6].

Lipomas of the corpus callosum can be morphologically classified into two main groups: anterior and posterior subtypes. Anterior lipomas are typically larger, measuring over 2 cm, and have a tubulonodular appearance. They are frequently associated with hypogenesis or complete agenesis of the corpus callosum, as well as other anomalies such as frontal lobe abnormalities, frontal encephalocele, calcifications, and ocular defects.

In contrast, posterior lipomas tend to be thinner and have a curvilinear configuration, typically lying over the splenium of the corpus callosum. These posterior lipomas are less commonly associated with corpus callosum anomalies or other encephalic malformations [7, 8].

In the case presented, the patient was found to have an anterior lipoma of the corpus callosum, characterized by its larger size, and location in the anterior and middle aspects of the interhemispheric fissure.

Other sites of intracranial lipomas are optic chiasma and the basal cisterns, mainly involving the circumesencephalic, interpeduncular and cerebello-pontine cisterns. Infratentorial lipomas are seen in the CP angle cisterns [9].

Most intracerebral lipomas are asymptomatic and come into clinical attention through neuroradiological lesion investigations for other conditions. If symptoms are present, they are related to the location of the lipomas Interpeduncular locations may cause periorbital pain, ptosis, and conjunctival injection [5-8].

Lipomas of the corpus callosum are benign fatty lesions that can be visualized using various medical imaging techniques. On standard skull radiography, these lipomas are generally silent and undetectable. In contrast, computed tomography (CT) scan allows clear identification: the lipomas appear as well-defined masses with characteristic fatty density, located at the level of the corpus callosum. Magnetic resonance imaging (MRI) offers an even finer analysis, these masses follow the fat signal intensity on all weighted sequences: they appear in hyper T1 and T2, with signal drops on FATSAT sequences This modality is particularly useful for accurately delineating the extent of the lipomas and evaluating their relationship with adjacent structures and also to search for frequently associated agenesis/dysgenesis of the corpus callosum.

Thus, CT and especially MRI constitute the reference examinations for the diagnosis and characterization of lipomas of the corpus callosum [10].

The main differential diagnoses to consider for corpus callosum lipomas include:Arachnoid cysts - Arachnoid cysts are benign fluid collections that can also occur in the region of the corpus callosum. They can be distinguished from lipomas by their fluid density on imaging [6].

Other fatty tumors rare benign fatty lesions such as teratomas or lipomatous hamartomas may also develop in the corpus callosum area, but are less common than lipomas, Brain tumors certain intracranial tumors, including gliomas, meningiomas, or metastases, can present with a fatty component that may be mistaken for a lipoma. And developmental abnormalities - Congenital cerebral developmental anomalies like agenesis of the

corpus callosum can also mimic the appearance of a lipoma on imaging [6, 7].

Treatment of intracranial lipomas is surgical but often the circumesencephalic, interpeduncular and cerebello- pontine cisterns. Infratentorial lipomas are seen in the CP angle cisterns. Pericallosal lipomas have an incidence of 1: 1700 and are classified into two types the anteriorly located bulky tubulo-nodular, which have a mean diameter of more than 20 mm and the posteriorly located ribbon like curvilinear with mean diameter of more than 10 mm [9, 10].

CONCLUSION

Corpus callosum lipomas are benign fatty lesions that can be reliably identified using modern imaging techniques. Computed tomography and magnetic resonance imaging constitute the reference examinations for their diagnosis and characterization.

MRI, in particular, offers accurate assessment of the extent of these lipomas and their relationship with adjacent structures. This is essential to guide therapeutic management, which most often remains conservative in the absence of symptoms. Only large lipomas or those causing neurological complications may occasionally require surgical excision.

Overall, a good understanding of the radiological characteristics of these fatty lesions helps avoid diagnostic errors and ensure appropriate patient management for those presenting with a corpus callosum lipoma.

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