

## Lipoma of the corpus callosum: Case report

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World Journal of Advanced Research and Reviews, 2024, 22(01), 1527–1529

Publication history: Received on 11 March 2024; revised on 17 April 2024; accepted on 20 April 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.22.1.1193>

### Abstract

Corpus callosum lipoma is a very rare congenital malformation, which may be associated with varying degrees of corpus callosum dysgenesis. It is often asymptomatic but may present with epilepsy, hemiplegia, dementia, or simple headache. We report the case of a 48-year-old adult, followed for psychomotor retardation since childhood, who presented with epileptic seizures and was found to have a lipoma of the corpus callosum. Symptoms and prognosis depend on the associated malformation. MRI is the imaging modality of choice for diagnosis. Treatment is symptomatic: antiepileptic drugs in the event of epileptic seizures, and surgery is rarely indicated.

**Keywords:** Lipoma; Corpus callosum; Seizures; MRI.

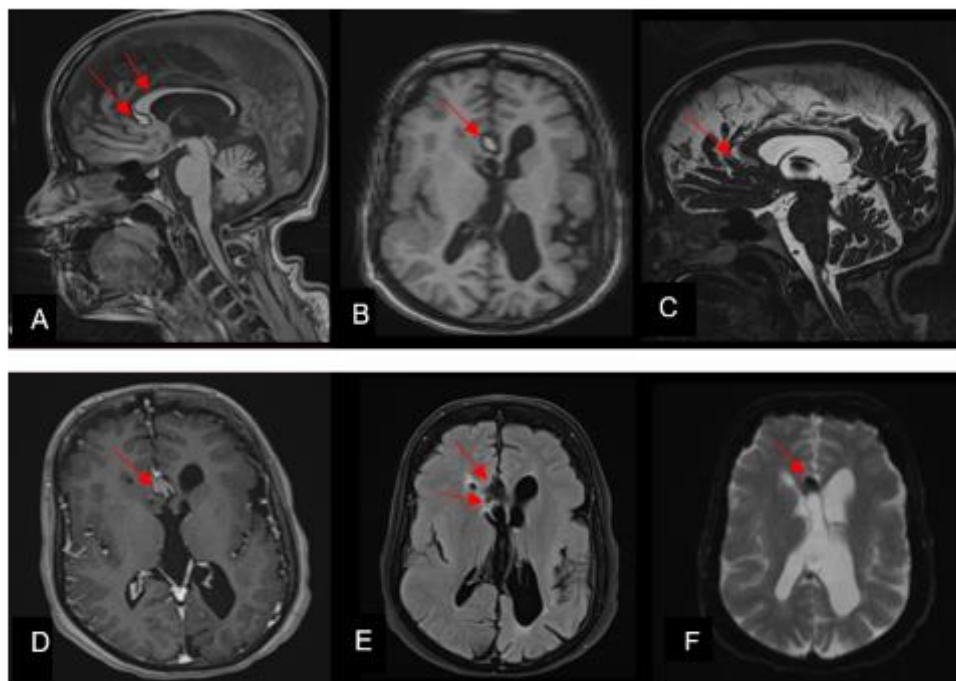
### 1. Introduction

Intracranial lipomas are very rare entities, accounting for less than 0.1% of intracranial tumors, and are considered malformative congenital lesions. [1, 2,3]. They are constituted by normal adipose cells, anatomically displaced, and therefore considered as heterotopias and not as tumors [3,4]. They are classically located on the median line, in particular at the level of the corpus callosum [5], and these lesions account for only 5% of corpus callosum tumors [1]. They may be associated with other congenital malformations such as agenesis or dysgenesis of the corpus callosum, and are clinically asymptomatic in most cases. Otherwise, they may manifest as headaches or seizures [1,5].

### 2. Case report

A 48-year-old female patient, treated for psychomotor delay, presented with generalized tonic-clonic seizures, on clinical and neurological examination no abnormality was seen. The MRI revealed a peri callosum lesional process which appeared hyperintense on both T1 and T2 weighted images (A, B, C), not enhanced after intravenous gadolinium injection (D), with low signal on others sequences in particular FLAIR and Diffusion weighted images (E, F). The diagnosis of corpus callosum lipoma was retained (Figure 1).

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**Figure 1** Weighted image showing corpus callosal lipoma; sagittal and axial sections T1 (A, B). Sagittal section T2 (C). T1 after intravenous gadolinium injection (D). T2 weighted FLAIR image (E). T2 weighted diffusion image (F).

### 3. Discussion

Intracranial lipoma was first described in 1818 by Meckel, who found a chiasmatic lipoma; in 1856 Rokitansky first described a peri callosum lipoma associated with corpus callosum agenesis [6]. Lipomas of the corpus callosum are morphologically classified into two groups: anterior and posterior. Anterior lipomas are indicated as tubulonodular bigger than 2 cm and frequently associated with hypogenesis and/or agenesis of the corpus callosum, frontal lobes anomalies, frontal encephalocele, calcifications, and ocular anomalies. Posterior lipomas are presented as curvilinear, they are thin and usually lay on splenium; they are less frequently associated with corpus callosum anomalies and other encephalic anomalies [7,8,9]. The lipoma of the corpus callosum was posterior curvilinear in our case.

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 [10,11]. Interpeduncular locations may cause periorbital pain, ptosis, and conjunctival injection. Pericallosal locations may present with psychomotor retardation or epilepsy, such our case [11, 12]. Quadrigeminal cistern location of lipoma may present with diplopia, signs of vertigo, increased quadrantanopsia, intracranial pressure headache, or progress to show intracranial pressure due to hydrocephalus [11, 13].

MRI is the tool of choice not only to characterize the extension of the lipoma but also to search for frequently associated agenesis/dysgenesis of the corpus callosum. Not surprisingly, these masses follow the fat signal intensity on all weighted sequences: they appear in hyper T1 and T2, with signal drops on FATSAT sequences [14].

The Management of corpus callosal lipoma is mainly symptomatic and conservative with surgery not indicated due to the location and its peripheral structures. Managing seizures is the mainstay of the treatment [15].

Prognosis and symptoms depend on associated malformations [9, 16].

### 4. Conclusion

Corpus callosum lipomas are very rare entities, often asymptomatic in the majority of cases and discovered incidentally. Symptomatology and prognosis depend on the associated malformation. Treatment is symptomatic, with antiepileptic drugs in the event of epileptic seizures. Surgery is rarely indicated.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

### *Statement of informed consent*

Informed consent was obtained from participants included in this case report.

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