

Intrasellar Arachnoid Cyst, a Rare Radiological Finding: Report of a Case.

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Abstract

Intrasellar arachnoid cysts are uncommon radiological findings, generally incidental and clinically silent. We present the case of 70 year-old female who was treated of meningitis due to cerebrospinal fluid nasal fistulae. She was diagnosed of intrasellar arachnoid cyst and managed conservatively because no neurologic, hormonal, symptomatic either CSF fistulae appeared during follow-up. The origin of intrasellar arachnoid cysts is unclear; although an incomplete diaphragma sellae through basal arachnoid membrane herniates may be a plausible theory. Conservative treatment is the usual option, but if hormonal, visual or intracranial hypertension symptoms appeared, surgery may be the best therapy. This entity should be in the differential diagnosis of cystic sellar lesions with other benign cysts and tumors as craniopharyngioma.

Introduction

Arachnoid cysts are congenital benign lesions with an adult incidence of 1.4–2.3%¹. Intrasellar arachnoid cysts are very exceptional findings, representing about 3% of all intracranial arachnoid cysts². These cysts, unlike other arachnoid cysts, are not associated with normal cerebrospinal fluid (CSF) cisterns because leptomeninges are missing in the sella turcica. Nevertheless, their pathogenesis remains still unclear. The majority of cases are clinically silent and few require surgical treatment. When these cysts become symptomatic resemble non-secreting pituitary adenomas, generally developing visual alteration and headache.

We present an uncommon case treated conservatively of intrasellar arachnoid cyst (IAC) which onset symptom was CSF fistulae.

Clinical Presentation

History

A 70 year-old female with antecedents of arterial hypertension, hypothyroidism and obesity was treated from meningitis caused by *Haemophilus influenza* due to CSF nasal fistulae. Arachnoid cyst was found within sella turcica and the patient was sent to Neurosurgery outpatient. At first visit the patient did not present any neurological deficit or visual defect.

Diagnosis

Magnetic Resonance Imaging (MRI) showed an intrasellar arachnoid cyst with pituitary gland compression. Hypointensed in T1 and hyperintensed in T2, with no enhancement after gadolinium contrast infusion. Fine-cut cranial base Computerized Tomography (CT) revealed multiple dehiscences within cribose lamina, with association of slight quantity of CSF inside posterior ethmoidals cells and remodeling of sphenoid sinus and sellar floor. The otorrinolaringological exploration was normal. No hormonal alterations were encountered.

Treatment and outcome

Despite radiological findings, the patient did not present any fistulae episode again. During follow-up no neurological, hormonal either visual alterations were seen. Consequently, we decided to keep observational conduct.

Discussion

Arachnoid cysts are commonly seen supratentorial, being fossa media the most frequent location. Intrasellar distribution is extremely rare, accounting for 0.5% in autopsy studies³. There are few operated cases reported in literature.

The pathophysiology is still unknown, although several theories have been advocated such as being produced by a defective diaphragma sellae through which basal arachnoid membrane herniates. This defect may close as a result of meningitis –as it happened in our case-, hemorrhage, or inflammatory event creating a non-communicating cyst⁴.

IAC clinically resemble a nonfunctional pituitary adenoma, thus endocrine symptoms are observed to be less common⁵.

IAC are characterized on the MRI images by cystic intrasellar lesion with no contrast enhancement and calcification with a typical CSF-like signal which is hypointense on T1 and hyperintense on T2-weighted sequences. Suprasellar extension is seen regularly, adopting a balloon regular shape molding but no invading cavernous sinus^{5,6}.

The differential diagnosis should be done with other benign cysts and tumors, being sometimes complicated preoperatively because symptoms and images may mimic each other. Benign intrasellar cysts can be divided into arachnoid cysts, Rathke's cleft cysts, epidermoid cysts and pars intermedia cysts. These cysts have no free communication with the surrounding subarachnoid space. The appearance of rim like enhancement of the cyst wall is typical of Rathke's cleft cysts and craniopharyngiomas, moreover, these entities may show calcifications. Solid, heterogeneous contrast-enhancing parts within the cyst and elevated protein concentration in the fluid are classically characteristics of craniopharyngioma, showing slightly higher intensity than CSF and isointense with CSF on T1 and T2-weighted sequences, respectively^{5,7}.

Surgical treatment options of IAC are indicated when appears pituitary dysfunction, visual pathway affection and symptoms of intracranial hypertension. Generally, the elective surgical technique is endoscopic endonasal transsphenoidal approach. Surgical morbidity for those cysts seems to be higher than that for pituitary adenomas; being CSF fistulae the most frequent complication.

Despite being a very exceptional entity, intrasellar arachnoid cyst should be taken in consideration in the differential diagnosis of sellar cystic lesions. Surgical treatment may be necessary in cases of hormonal

alteration, visual affectation or symptomatic intracranial hypertension.

Declarations

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- **Conflicts of interest/Competing interests:**

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- **Consent to participate:**

'Not applicable'.

- **Consent for publication:**

Informed consent was obtained from the individual whose case is reported.

- **Availability of data and material:**

'Not applicable'.

- **Authors' contributions:**

All authors contributed to the case report conception and design. Material preparation, data collection and analysis were performed by AAOR. The first draft of the manuscript was written by AAOR and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Figures

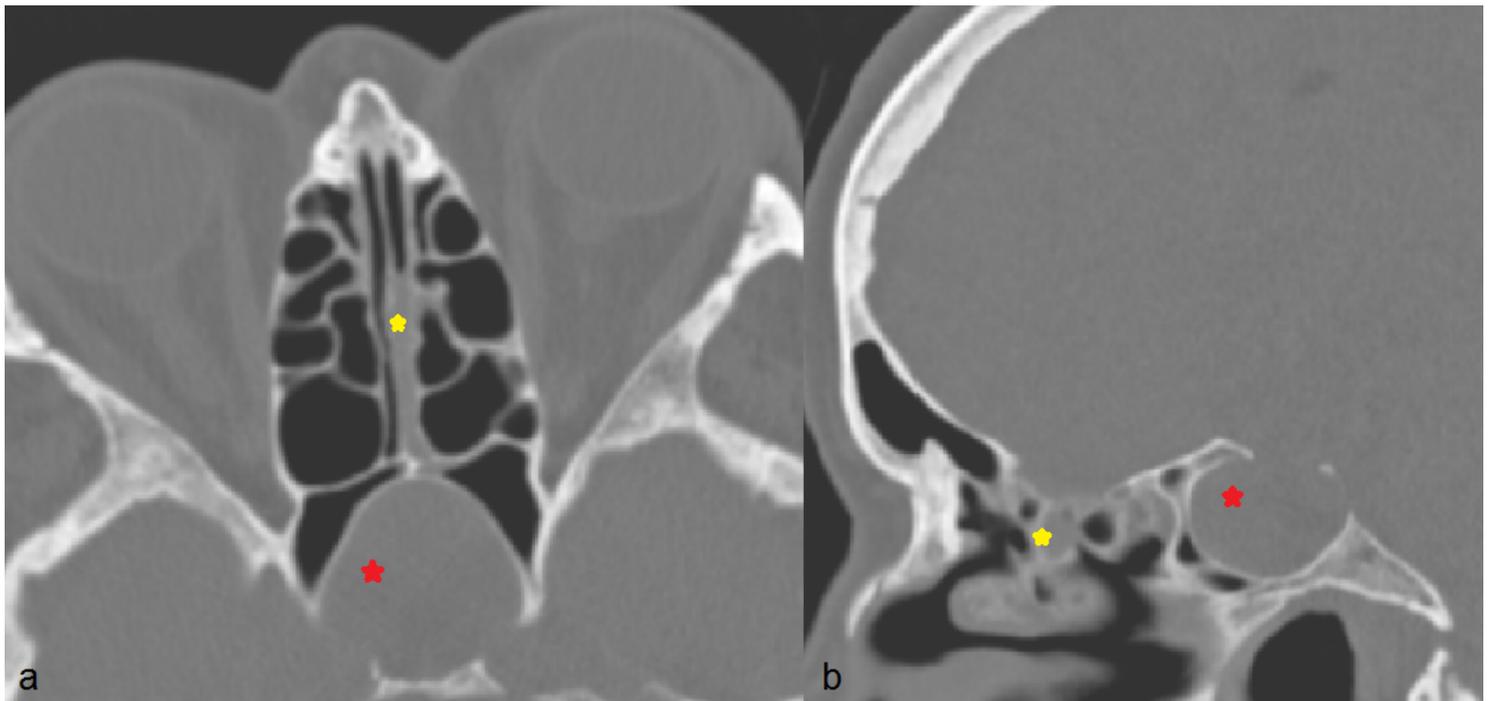


Figure 1

Axial (a) and Sagittal (b) fine cut bone CT scan showing intrasellar arachnoid cyst (red symbol) and CSF on ethmoidal cells (yellow symbol).

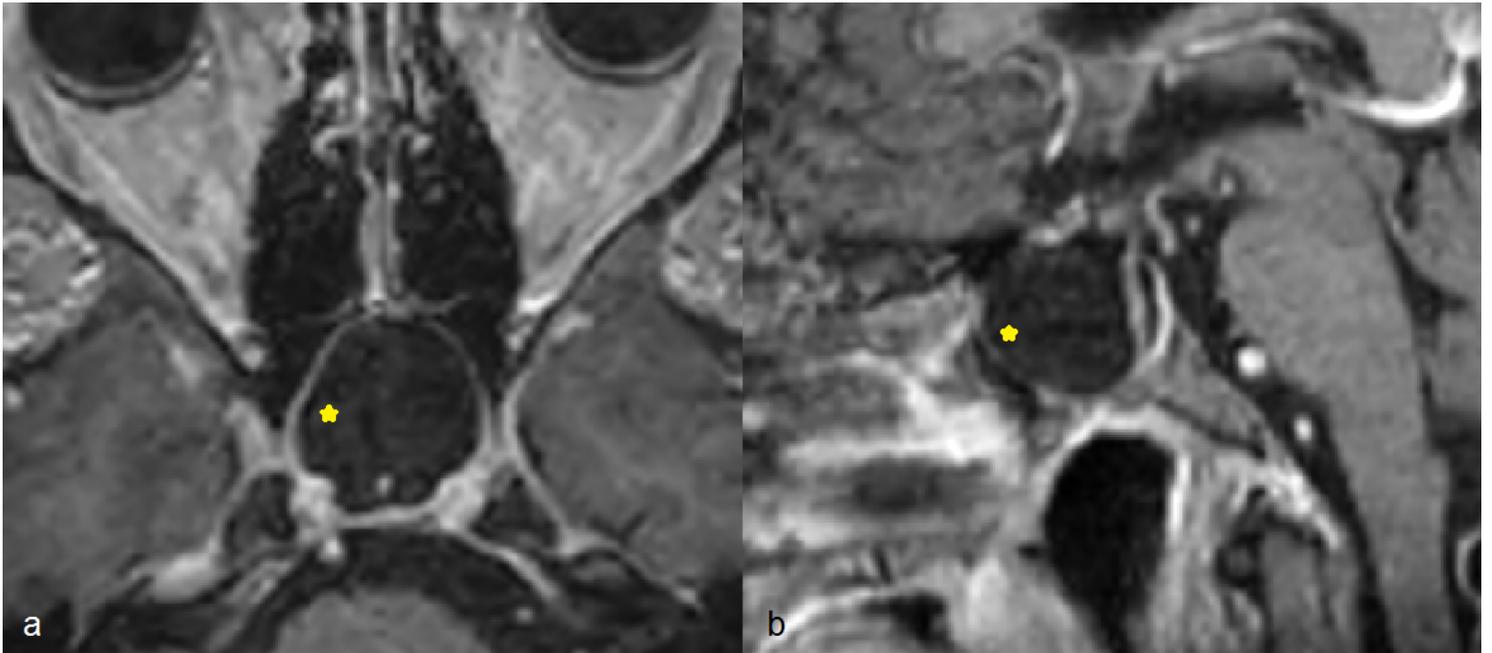


Figure 2

Axial (a) and Sagittal (b) enhanced T1-weighted sequences revealing intrasellar arachnoid cyst (yellow symbol).

Supplementary Files

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