Isolated intrasphenoïdal expansive lesion

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Introduction

There is a wide differential diagnosis when confronted with an isolated expansive lesion of the sphenoid sinus. Most patients present with isolated headache; the second most frequent symptom is visual complaint, possibly indicating a wide expansion of a growing lesion.

Surgery is mainly indicated to obtain tissue samples in order to have a definite diagnosis and to plan a curative/palliative complementary treatment.

Case presentation and history

A 51-year old female with a history of a hepatic hydatid cyst treated endoscopically in 2011 was referred to our center by the tropical medicine unit with chronic headache and visual complaints.

No fever, nausea or vomiting were reported.

An ophthalmological assessment was performed and no optic nerve lesion was found, no evidence of visual loss was described.

The subsequent clinical examination was almost normal; neither systemic nor neurological focal signs were found. A previously performed ultrasonographic abdominal examination was reported as normal, with no sign of cystic recurrence.

Cerebral MRI and CT scan both revealed an expansive lesion centered in the sphenoid sinus, with extension to the posterior ethmoidal cells and bone thickening of the sinus wall. No signs for any local lytic process or intra-cranial invasion were identified. Vascular structures, including cavernous sinus, were respected. There was an absence of pneumatisation of the sphenoid sinus. Microcalcifications were abundant.
Figure 1. Preoperative MRI in the axial, sagittal and coronal plane (T1-Gado).
Figure 2. Preoperative CT in the axial, sagittal and coronal plane.
Q1: What would the differential diagnosis be, based on imaging data?

A1:
- Chronic sphenoiditis
- Aspergillosis;
- Hydatid cyst;
- Chondrosarcoma;
- Chordoma;
- Fibrous dysplasia;
- Infected mucocele might also be a diagnosis possibility.

Q2: What would your next step be?

A2: Different possibilities
- Repeat CT/MRI after a short-term observation period (6 weeks to 3 months), if no worsening of symptoms or new clinical finding;
- Transnasal-Transsphenoidal biopsy-excision

The patient was referred to our team after a short period of antifungal therapy (Albendazole during 8 weeks) and new radiological investigations (CT and MRI) confirmed the stability of the lesion.

Q3: What would your surgical approach be?

A3: It appears that endoscopic transsphenoïdal biopsy offers the best access to the lesion. Neuronavigation should be used, as the normal sphenoid anatomy is not respected and carotido-ophtalmic recess not recognizable.

Description of the procedure/Outcome

A transsphenoïdal endoscopic biopsy was performed, beginning with a wide opening of the sphen-o-ethmoid recess, creating a large access pathway to the sphenoid sinus and also posterior ethmoidal cells. A thick bony shell was identified and then opened. This procedure revealed many bony formations adjacent to a gelatinous substance and little quantity of turbid liquid.

Despite the use of neuronavigation, the lateral margins of the sinus cavity could not be identified. We then decided not to extend our resection too laterally and therefore the resection wasn’t complete.

Frozen sections, definitive pathology and microbiological swabs were done during the operation.
Q4: Based on per-operative findings, what would your differential diagnosis be now?

A4:
- Aspergillosis;
- Fibrous dysplasia;
- Infected mucocele might also be a diagnosis possibility.

Pathology
Pathologists reported a psammomatoïd bony fibroma with focal signs of aneurysmal cyst modifications. It is a rare benign lesion with a recurrence potential, even when completely removed. This pathology is responsible for about 2.0% of sphenoidal isolated pathologies.

Microbiological results came back negative for fungal and bacterial evidence.

Further treatment
Despite the lack of evidence for any fungal infection, we decided to proceed with prophylactic antifungal treatment until the definitive histologic diagnosis had been established. Once it was done, the antifungal treatment was stopped.

As follow up, we decided to repeat the MRI 3 months after surgery. A total removal of the lesion is not scheduled because of the absence of visual loss and spontaneous regression of headache reported by the patient.

Follow up at 3 months, 6 months, 1 year, 2 years and 5 years are planned.

Conclusion
It seems that the transsphenoidal endoscopic surgery offers the best way to obtain biological material for the diagnosis of a pure intrasphenoidal lesion. It is indeed a minimal invasive procedure with minimal morbidity.
References


