Endoscopic Resection of a Sinonasal Ossifying Fibroma in a Patient with Sigmoid Sinus Thrombosis: A Case Report

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Background

- Fibro-osseous lesions are benign conditions in which normal bone is replaced by fibrous tissue with varying mineralization.
- Ossifying fibroma is a rare subtype that most commonly affects the mandible but can demonstrate locally aggressive growth despite its benign nature.
- Involvement of the spheno-ethmoidal region is exceptionally uncommon and poses diagnostic and surgical challenges due to proximity to critical skull base structures.
- We present a case of spheno-ethmoidal ossifying fibroma presenting with refractory headache as an atypical manifestation.

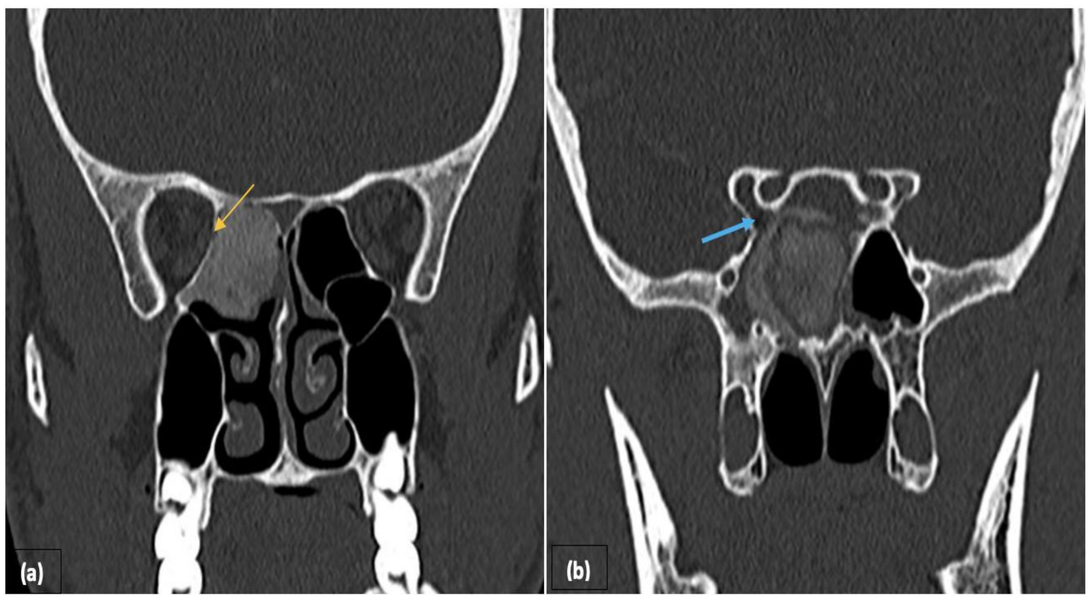

Figure 1 (a): Coronal cut of CT scan showing a 4 x 2.6 x 2.3 cm fibro-osseous lesion in the posterior ethmoids in close proximity to the ethmoid roof and lamina papyracea (yellow arrow). (b): CT showing the lesion in the right sphenoid sinus in proximity to the optico-carotid recess (blue arrow) with secondary sphenoethmoidal recess obstruction and mucosal disease.

Case presentation & investigation

- A 30-year-old male patient with known factor V Leiden mutation presented to the emergency room in a peripheral hospital with severe right-sided headaches and nasal obstruction of two weeks.
- He was initially diagnosed with right sphenoid sinusitis in addition to thrombosis of the left sigmoid sinus and proximal internal jugular vein, consequently treated with antibiotics and anti-coagulants with minimal improvement.
- He then presented to our institution, where nasal endoscopy revealed purulence in the right spheno-ethmoidal recess, with no other abnormality.
- CT scan demonstrated a well-defined lobulated lesion measuring 4.0 × 2.6 × 2.3 cm in the right sphenoid and posterior ethmoid sinuses, without bone erosion or orbital extension. The mass was heterogeneous with small fibrous hypodense areas and large mineralized hyperdense areas

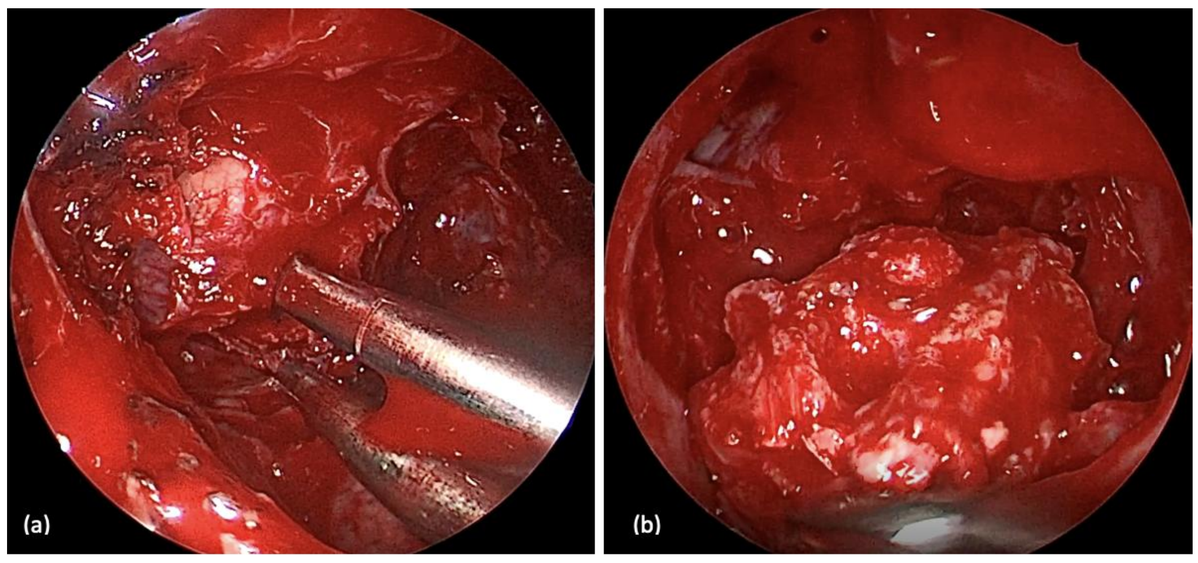

Figure 2 (a): Endoscopic images of the fibro-osseous lesion in the sinonasal cavity and (b) showing the lesion excised en-bloc.

Management

- Rivaroxaban was discontinued 5 days before surgery and bridged with enoxaparin starting 3 days pre-operatively.
- The lesion was excised via an expanded endoscopic endonasal approach using a posterior septectomy and four-handed bi-nostril technique.
- A hard mass occupying the right sphenoid sinus was identified, dissected along a clear plane from the sphenoid and posterior ethmoid walls, and removed en bloc.
- A small skull base defect with low-flow CSF leak was encountered at the posterior ethmoid–cribriform region and repaired using a multilayered reconstruction with mucosa and a nasoseptal flap.
- Histopathology confirmed ossifying fibroma, recovery was uneventful and early follow-up showed complete symptom resolution with no evidence of residual or recurrent disease.

Results

- This case highlights an unusual presentation of spheno-ethmoidal ossifying fibroma initially mimicking complicated sinusitis.
- CT imaging showed classic fibro-osseous lesion features, including a well-circumscribed, lobulated mass with mixed fibrous and mineralized components and preservation of surrounding bone, helping distinguish it from aggressive malignancy or invasive fungal disease.
- However, radiologic overlap with chronic sinus pathology necessitated histopathologic confirmation.
- The associated infection was likely secondary to sinus obstruction caused by the lesion.
- The presence of sigmoid sinus and internal jugular vein thrombosis added diagnostic complexity and was likely multifactorial, related to infection, inflammation, and the patient's underlying Factor V Leiden mutation.

Conclusions

Sphenoethmoidal OF is an uncommon diagnosis and can be missed because its symptoms and imaging findings often mimick those of infectious or inflammatory sinonasal disease.
In our case, the presence of systemic infection and venous thrombosis further masked the underlying pathology and delayed diagnosis.
Refractory symptoms with characteristic CT findings eventually led to surgical excision and histopatholhy confirmation.

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