Endoscopic Resection of an Orbital Ossifying Fibroma Presenting with Subcutaneous Emphysema in an Adolescent

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Introduction

Ossifying fibromas are rare, benign fibro-osseous tumors that most commonly involve the paranasal sinuses and orbit in children and young adults.[1] When arising from the lamina papyracea, ossifying fibromas may present with proptosis, globe displacement, and orbital inflammation.[2] Although malignant transformation has not been reported, these lesions are locally aggressive and have high recurrence rates, making en bloc surgical resection the definitive treatment.[1,3] Given their proximity to critical orbital structures, endoscopic resection of orbital ossifying fibromas provides a minimally invasive approach that allows for complete excision while preserving orbital function.

Case Presentation

A 17-year-old female presented with recurrent subcutaneous emphysema associated with nose blowing. She denied visual changes or sinonasal complaints.

CT sinus was obtained and demonstrated an oval shaped, calcified lesion, measuring 12mm x 9.5mm x 9.0mm, arising from the left orbital surface of the lamina papyracea with attachment to the posterior left anterior ethmoid cavity. (Fig. 1)

MRI was obtained and demonstrated a T2 heterogenous enhancing lesion of the left medial orbit abutting the lamina papyracea, with displacement of the left medial rectus and contact with the globe. (Fig. 2)

Given proximity to critical orbital structures, endonasal, endoscopic resection was pursued.

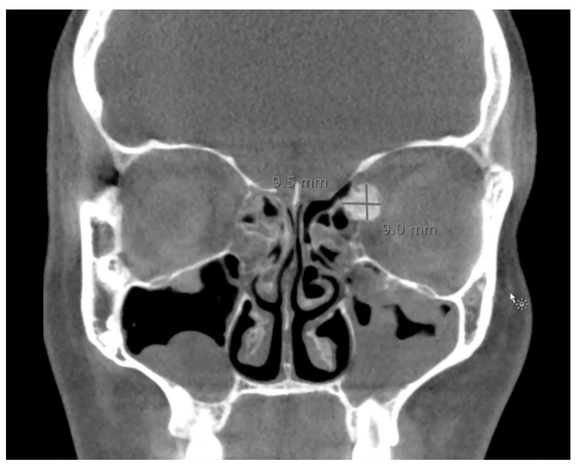

Fig. 1 CT Sinus demonstrating oval shaped, calcified lesion, measuring 12 x 9.5 x 9.0mm, arising from left orbital surface of the lamina papyracea.

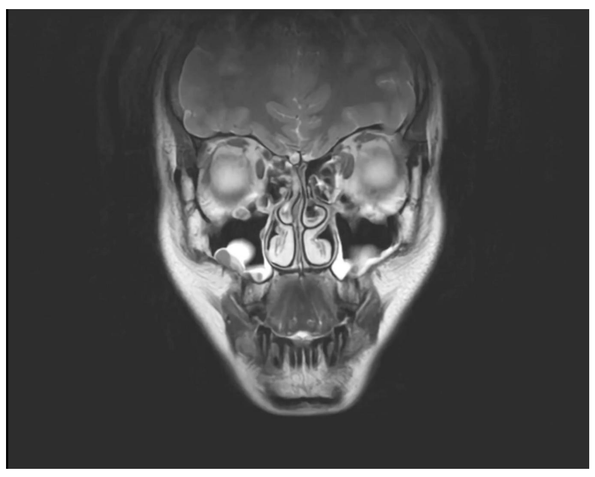

Fig. 2 MRI demonstrating T2 heterogenous enhancing lesion of the left medial orbit with displacement of the medial rectus muscle and contact with the globe.

Surgical Management

An endonasal, endoscopic approach was performed. Opening of a left middle turbinate concha bullosa was followed by complete uncinectomy and wide maxillary antrostomy. (Fig. 3)

The ethmoid bulla was widely opened, and bony septations were removed to allow complete anterior ethmoidectomy. The posterior ethmoid was then entered with takedown of the basal lamella to the skull base and laterally toward the lamina papyracea.

After skeletonization, the lamina papyracea was removed, allowing lateral reflection of the periorbital contents. The bony lesion was identified protruding through the periorbita and was bluntly dissected from the orbit using curettes and cottonoid pledgets to protect orbital structures. (Fig. 4)

Hemostasis was achieved with Surgicel applied to the exposed orbital area. Final pathology was consistent with ossifying fibroma. (Fig. 5 and Fig. 6)

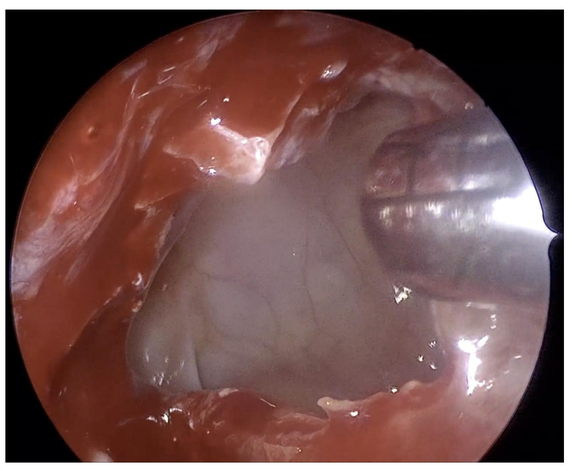

Fig. 3 Opened maxillary sinus following antrostomy.

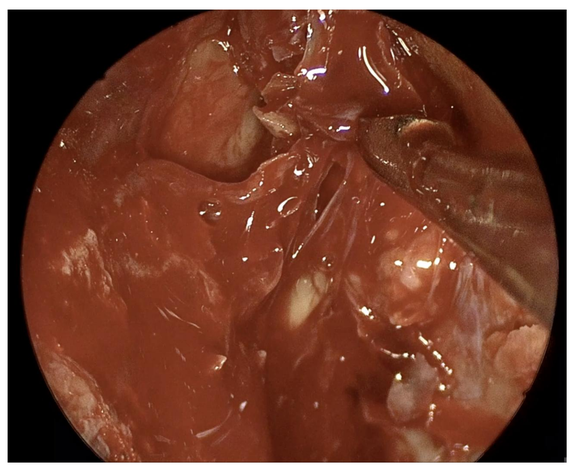

Fig. 4 Identification of fibroma inferior to curette.

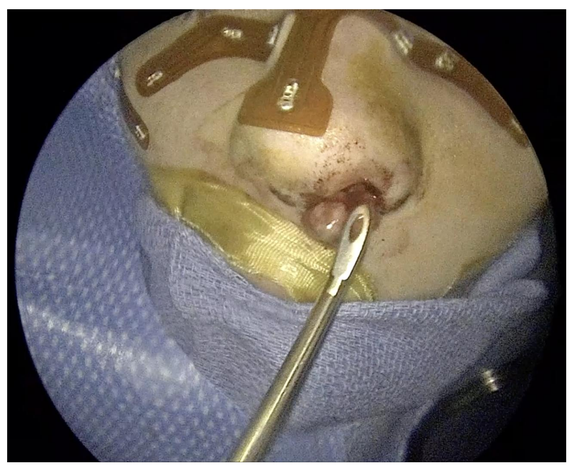

Fig. 5 Removal of fibroma.

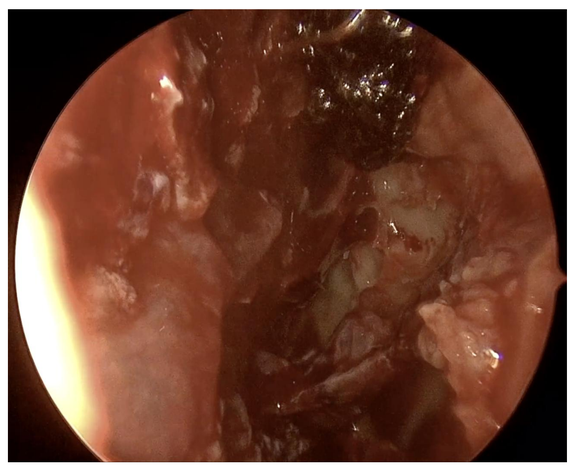

Fig. 6 Surgicel placed against exposed orbit.

Conclusions

The patient was seen 4 weeks postoperatively with no nasal complaints and appropriate mucosal healing on endoscopic exam. This case demonstrates successful endoscopic management of an orbital ossifying fibroma presenting with orbital emphysema. Endoscopic resection allows for excellent visualization, complete removal of lesion, and preservation of orbital function.

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References

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