SAFETY FIRST: INTRAOPERATIVE DECISION MAKING WITH A NASAL FOREIGN BODY ABUTTING THE SKULL BASE

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Introduction

Children with nasal foreign bodies may be asymptomatic or may present with symptoms of recurrent or chronic sinusitis. The most common cause of unilateral rhinorrhea in children is a nasal foreign body.

Case Information

History of present illness:

Nine-year-old male presented with one year of intermittent, right sided, purulent rhinorrhoea.

- Episodes were associated with congestion, occasional fevers and lasted 2-3 weeks.
- Symptoms resolved between episodes.
- Foreign body placement was denied.

Past medical and surgical history:

None

Physical exam:

Nasal endoscopy was limited due to patient tolerance and purulence in the right nasal cavity, though no foreign body was identified.

Imaging:

Outside CT head was obtained preoperatively during emergency department visit for headaches

- Report described near complete opacification of the right maxillary sinus and mucosal thickening in the bilateral sphenoids, ethmoids, and left maxillary sinus.
- Formal images were requested for review, though were not received.

Preoperative Assessment/Plan:

Recommendations were made for nasal endoscopy and adenoidectomy for recurrent acute sinusitis.

Intraoperative Findings

Extensive granulation tissue was encountered and debrided, revealing a metallic foreign body in the right nasal cavity.

- The object was firmly fixed in place.
- Debridement revealed an open safety pin (Figure 1). The sharp limb impaled on the floor of the nose.
- The other limb extended medial to the middle turbinate toward the sphenoid sinus (Figure 2, 3)

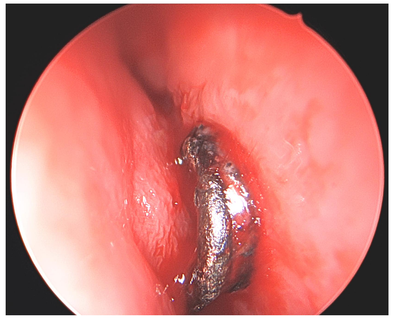
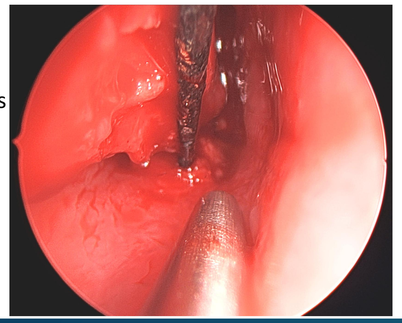


Figure 2 (above): Intraoperative Endoscopic Findings



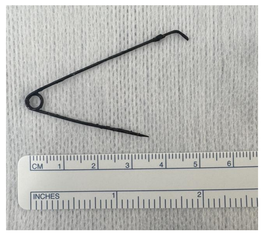


Figure 1 (above): Safety Pin After Removal
Figure 3 (left): Safety Pin Impaled on Floor of Nose

Intraoperative CT

Due to the proximity to the skull base, the decision was made to obtain an intraoperative CT scan

- This demonstrated the sharp limb traversing through the hard palate into the soft tissue of the roof of the mouth and the superior limb extended to the face of the sphenoid (Figure 3).

Outcome

Further debridement allowed for the pin to be retracted out of the hard palate and safely removed.

- Postoperative review of the CT head revealed the safety pin was only visible on scout images but not visible on traditional cuts (Figure 4).
- At his postoperative visit, the patient had resolution of his preoperative rhinorrhea and nasal congestion.

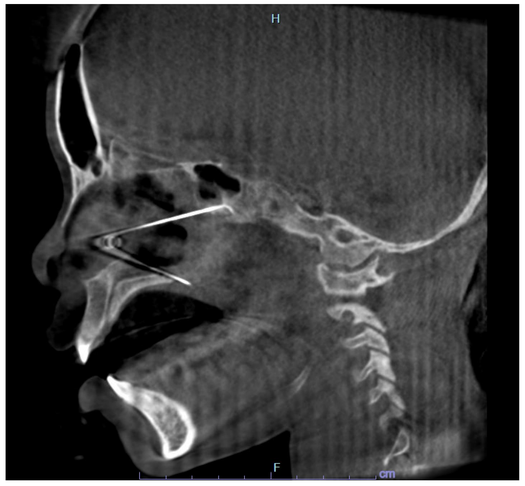


Figure 4 Intraoperative CT indicating open safety pin extending to skull base

Implications/Discussion

This case highlights the importance of:

- Reviewing all preoperative images, including scout images
- Considering the use of intraoperative CT sinus when foreign bodies are unexpectedly encountered near the skull base
- Having a high index of suspicion of patients with unilateral rhinorrhea

Conclusion

Pediatric nasal foreign bodies are the most common cause of purulent rhinorrhea. They can be unexpectedly encountered near the skull base, and intraoperative CT can assist with ensuring safe removal.

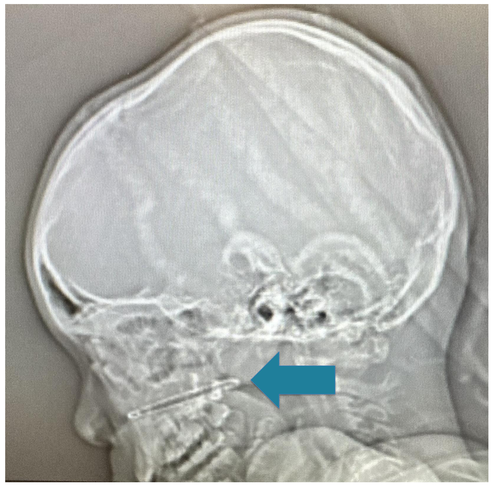


Figure 5: Preoperative scout CT image. Arrow denotes previously closed safety pin not seen on CT head reformatted cuts