

# Idiopathic Nasal Septal Abscess: A Case Report

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## BACKGROUND

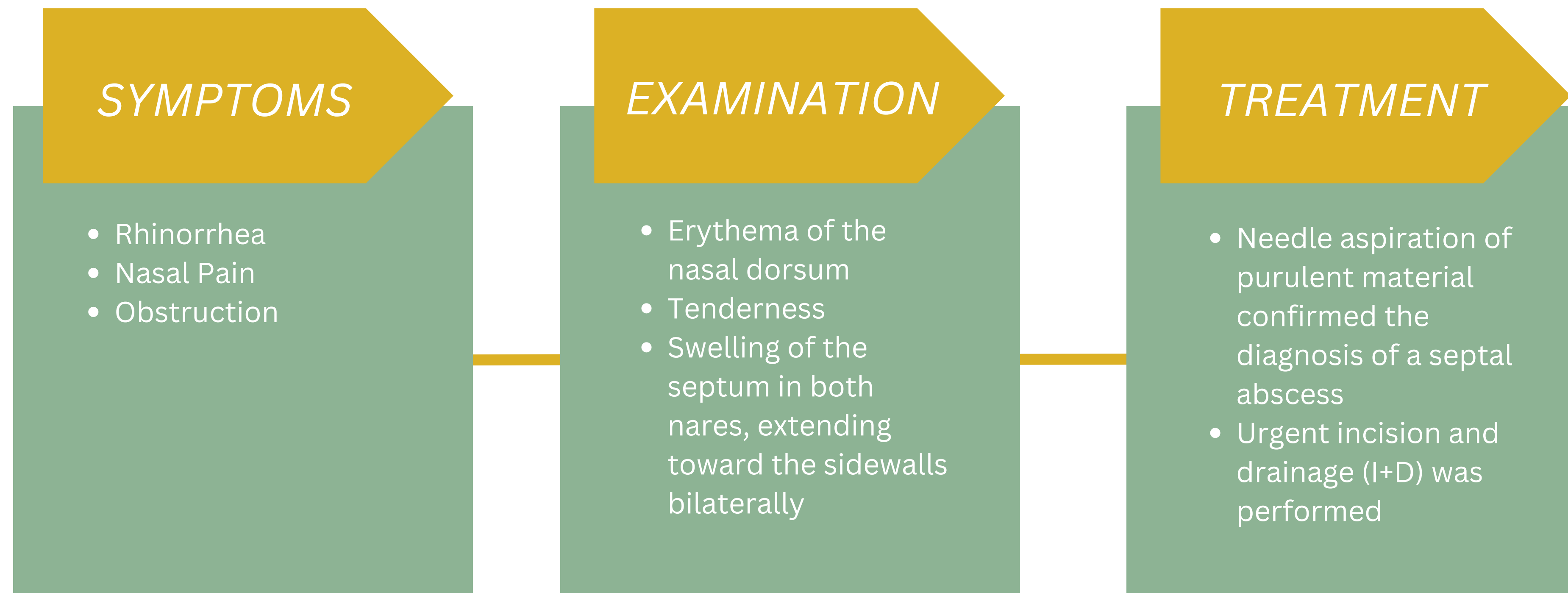
Nasal septal abscess (NSA) is an uncommon condition characterized by a collection of pus between the septal cartilage and its overlying muco-perichondrium or periosteum [1].

NSA's arise most commonly due to infected hematoma secondary to nasal trauma and require urgent treatment due to the risk of lethal intracranial complications and facial deformity; NSA rarely occurs without nasal injury or a clear source [1,3,4].

Here we describe a case of **idiopathic** septal abscess formation in an otherwise-healthy 13-year-old patient with no apparent trigger or infection source.

## CASE PRESENTATION

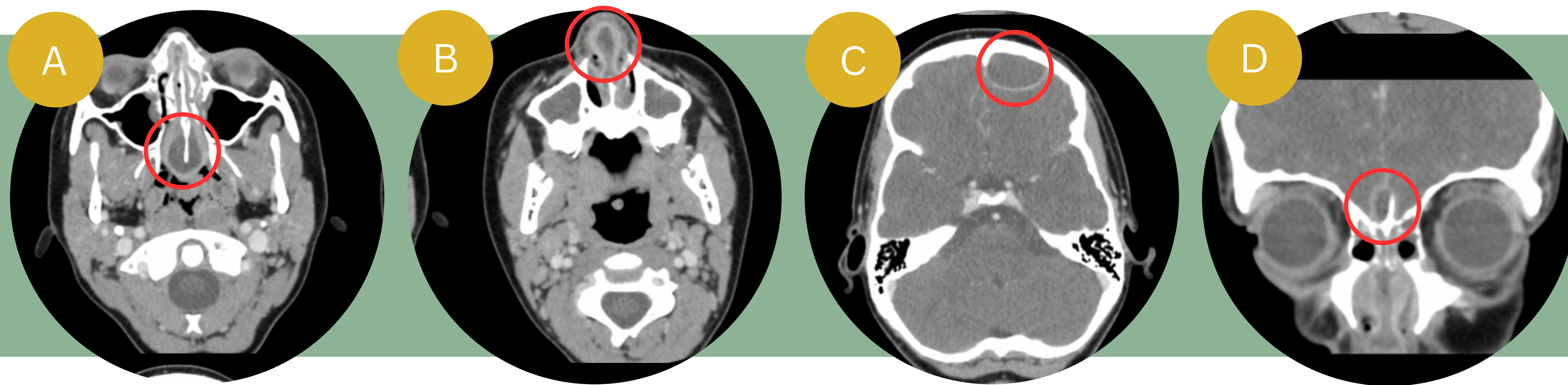
A healthy 13-year-old male presented with complaints of sinusitis and no previous history of head and neck infection, foreign body aspiration, sino-nasalsurgery, hematoma, or trauma. Initial evaluation and management included:



He was discharged following drainage. Recurrent headaches following I+D brought the patient in for re-evaluation. CT imaging revealed septal abscess recurrence, pansinusitis, and left frontal epidural empyema. He was transferred to a tertiary care centre for further management. **Surgery included:**

- Cranial fixation and endoscopic image guidance. Hemi-transfixion incision of the left septal muco-perichondrium revealed underlying purulent soft tissue necrosis and degeneration of the quadrangular septal cartilage due to the infection.
- Further exploration revealed significant polypoid degeneration along the sphenoid sinus ostia and middle meatus, which required resection. Maxillary antrostomies, anterior and posterior ethmoidectomies, and sphenoid sinusotomies allowed for further debridement and drainage of the paranasal sinuses. NasoPore Firm (Stryker Corp., Kalamazoo, MI, USA) was placed bilaterally alongside septal splints to facilitate hemostasis and bolgerization.
- The remainder of the procedure consisted of craniotomy and epidural pus drainage.

The patient's postoperative course was uncomplicated; the follow-up CT scan showed no abscess recurrence. Pus culture revealed growth of *Streptococcus constellatus*. The patient was discharged home on antibiotics with community follow-up.



**Figure 1.** Pre-treatment CT imaging. A) Axial CT scan with contrast: posterior extent of septal abscess wrapping around the vomer posteriorly. B) Axial CT scan with contrast: Anterior septal abscess and maxillary sinus opacification. C) Axial CT with contrast: Epidural abscess collection. D) Coronal CT with contrast: Septal abscess with intracranial abscess formation at cribriform plate extending along crista galli.

## DISCUSSION

Beck's classifications of NSA's [5]:

- **Infectious**
- **Trauma-evoked**
- **Idiopathic**

Despite the susceptibility of the nasal septum to injury, abscess formation has been uncommon since the advent of antibiotics. Furthermore, spontaneous abscess formation in an otherwise healthy child is rare [6,7].

### SIGNIFICANCE

- Prompt diagnosis and treatment is critical:
  - Septal mucoperiosteal erosion causes blood supply compromise and rapid avascular necrosis of the septal cartilage, resulting in the formation of a **saddle nose**.
  - The potential for life-threatening complications occur as the infection expands contiguously, leading to possible orbital cellulitis, meningitis, cavernous sinus thrombosis, and sepsis [8].

## CONCLUSION

Although uncommon with current antibiotic therapy, NSA's can still occur, as highlighted in this case study. Prompt diagnosis and treatment are essential in mitigating the potentially life-threatening complications of the disease.

### SYMPTOMS

- Bilateral nasal obstruction
- Pain localized to the nasal tip
- Fever
- Headache
- Epistaxis
- Purulent discharge

### TREATMENT

- Immediate empiric, parenteral broad-spectrum antibiotics.
- Fine-needle aspiration allows for bacterial culture and further antibiotic tailoring. However, surgical incision and drainage is required for definitive treatment. Recurrence can occur, as highlighted in our case. Thus, nasal packing continued antibiotic therapy, and close monitoring are all important steps in managing septal abscesses following surgery.



## References:

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