Content available at: https://www.ipinnovative.com/open-access-journals

IP Journal of Otorhinolaryngology and Allied Science

Journal homepage: https://www.joas.co.in/

Case Report

A case report: Septal abscess in a healthy child without trauma

Kishen Khanna PS[1], Aparna Das[1]*, Vijayasundaram S[1], Subhathra[1]

Dept. of ENT. Mahatma Gandhi Medical College and Research Institute, Sri Balaji Vidyapeeth University – Pondicherr, India.

Abstract

Background: Nasal septal abscess (NSA) is a rare but serious condition characterized by the accumulation of pus between the nasal septum and the perichondrium. Untreated, it can lead to severe complications such as nasal deformities, cavernous sinus thrombosis, and meningitis. While trauma is the most common cause, NSA can also result from infections like sinusitis, dental issues, or furunculosis. This case report highlights a non-traumatic NSA caused by Methicillin-resistant Staphylococcus aureus (MRSA) in an immunocompetent child, emphasizing the condition's potential even in healthy pediatric populations.

Methods: A 7-year-old girl presented with bilateral nasal obstruction, mouth breathing, snoring, fever, and a history of upper respiratory infection. Diagnostic workup included clinical examination, which revealed septal swelling and erythema, and aspiration of pus for microbiological analysis. The patient was diagnosed with MRSA infection and treated with intravenous linezolid, followed by incision and drainage under general anesthesia. Postoperative care involved nasal packing and continued antibiotic therapy.

Results: The patient showed significant improvement within days of treatment. She was discharged on oral antibiotics with no residual complications. Early intervention prevented potential severe outcomes, underscoring the efficacy of timely diagnosis and management.

Conclusion: This case underscores the importance of early diagnosis and intervention for NSA, which can mimic other upper respiratory conditions and lead to diagnostic delays. Clinicians should maintain a high index of suspicion in children with persistent nasal symptoms and ensure prompt referral to otolaryngology to avoid serious complications.

Keywords: Nasal septal abscess, MRSA, Pediatric, Non-traumatic, Linezolid, Early intervention.

Received: 02-05-2025; **Accepted:** 31-05-2025; **Available Online**: 27-06-2025

1. Introduction

Nasal septal abscess (NSA) is a rare but clinically significant condition characterized by the accumulation of pus between the nasal septum and the perichondrium and periosteum.[1] While most Nasal septal abscess cases are associated with nasal trauma leading to hematomas that further progress to abscesses, other causes such as nasal surgery, furunculosis, dental infections, and sinusitis are also recognized.[2] NSA typically starts with hematoma formation, which disrupts blood supply to the septal cartilage and can lead to ischemic necrosis, septal perforation, and cosmetic deformities if untreated.[2] The condition is most commonly caused by Staphylococcus species, though other pathogens can be involved.[3]

Beck's classification categorizes NSA causes into primary (trauma-related), secondary (from dental or Sino-nasal infections) and spontaneous cases, with the latter being exceptionally rare in immunocompetent individuals, particularly in children.[4]

This case report highlights a non-traumatic Nasal septal abscess in a healthy paediatric patient, underscoring the need for clinicians to remain alert to such conditions, as symptoms can often be mistaken for benign upper respiratory infections. This case emphasizes the importance of early diagnosis and intervention in preventing severe complications and ensuring positive outcomes for paediatric patients.

*Corresponding author: Aparna Das
Email: kishenkhanna@gmail.com

https://doi.org/10.18231/j.ijoas.2025.014

2. Case Report

A 7-year-old girl presented with bilateral nasal obstruction, mouth breathing, and snoring following history of upper respiratory infection and fever for 2 days. Examination revealed erythema of the nasal bridge, absent fogging on cold spatula test, and bilateral septal swelling (**Figure 1** A & B). The patient was initially evaluated in an outside hospital andaspiration of the septal abscess was done with culture report suggesting Methicillin-resistant Staphylococcus aureus (MRSA). The patient came for review in our hospital after 4 days of oral medications as patient did not improve symptomatically. In our hospital the patient was treated with intravenous linezolid based on culture and sensitivity and underwent incision and drainage under general anaesthesia. Intraoperatively, endoscopy revealed necrosis of the cartilaginous septum and serosanguinous fluid was drained. A thorough examination of bilateral sinuses were done which was normal. Postoperatively, antibiotic-soaked nasal pack was placed bilaterally along with wick in the incision site for adequate drainage. Wick was removed on postoperative day (POD) one and bilateral nasal pack was removed on POD 2 (**Figure 2 A**). Septal swelling had significantly reduced. Patient received 5 days of intravenous linezolid and was discharged on oral linezolid for 5 days and adequate analgesics. Patient came for follow up after 2 weeks and had symptomatically improved (**Figure 2 B**).

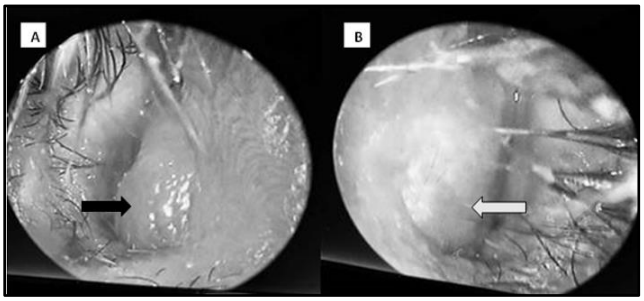

Figure 1: **A):** Intraoperative diagnostic nasal endoscopy picture showing right nasal septal bulge filling the entire right nasal cavity (black arrow), **B):** Intraoperative diagnostic nasal endoscopy picture showing nasal septal bulge filling the entire left nasal cavity (white arrow).

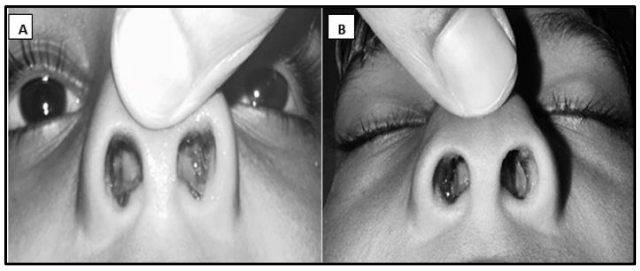

Figure 2: A): Bilateral septal bulge on post-operative day 2 following endoscopic incision and drainage and pack removal, **B):** Bilateral septal bulge significantly reduced after 2 weeks during follow up in ENT out patient department.

3. Discussion

Nasal septal abscess (NSA) is an uncommon yet serious condition, particularly in pediatric patients, due to the potential for significant complications and long-term deformities. This case report highlights a rare instance of spontaneous NSA in an immunocompetent child, with Methicillin-resistant *Staphylococcus aureus* (MRSA) identified as the causative pathogen.[5] While trauma remains the most common etiology, other causes such as infections, nasal furunculosis, sinusitis, dental infections, or systemic conditions like immune deficiency are recognized.[6] The unusual presentation underscores the need for heightened clinical suspicion when evaluating children with persistent nasal obstruction, fever, or facial swelling, even in the absence of reported trauma.

Children are particularly vulnerable to NSA and subsequent NSA due to the loose adherence of the mucoperichondrium to the nasal cartilage.[7] Even minor trauma can result in hematoma formation, which, when infected, can progress to abscess development. In this case, the absence of trauma suggested a primary infectious cause, emphasizing the importance of considering microbial pathogens like MRSA in differential diagnoses. The increasing prevalence of MRSA in pediatric infections also calls for vigilance and empiric antibiotic regimens that target resistant organisms.

The clinical presentation of NSA can mimic other upper respiratory conditions, leading to diagnostic delays. Symptoms such as nasal obstruction, pain, fever, and localized swelling are common but nonspecific. Timely diagnosis is crucial, as untreated NSA can result in severe complications, including cavernous sinus thrombosis, meningitis, orbital cellulitis, and permanent nasal deformities like saddle nose.[8] In this case, early identification and intervention prevented such outcomes. Diagnostic evaluation often relies on a thorough clinical examination, including anterior rhinos copy, to detect septal swelling or discoloration. While imaging modalities like CT scans are valuable in assessing abscess extension or ruling out fractures, diagnosis remains largely clinical.

Management of NSA involves prompt incision and drainage to evacuate purulent material and reduce pressure on the septum.[9] This is followed by targeted antibiotic therapy based on culture sensitivity. In cases where significant cartilage necrosis occurs, reconstructive surgery may be required to restore nasal function and appearance. This case further underscores the importance of early otolaryngology involvement for optimal management and to minimize long-term sequelae. Despite surgical intervention, complications such as nasal septal perforation or residual deformities may occur, necessitating ongoing follow-up.[10]

This case highlights the importance of early recognition, particularly by primary care and emergency providers, who are often the first to evaluate paediatric nasal conditions. Ensuring timely referral to otolaryngology and awareness of NSA's potential complications are essential. Furthermore, the case adds to the limited literature on non-traumatic NSA in immunocompetent children, emphasizing the need for a multidisciplinary approach to diagnosis and treatment. Continued research and documentation of such rare cases are vital to improve understanding and outcomes for paediatric patients with NSA.

4. Conclusion

This case of a nasal septal abscess in an immunocompetent child without a history of trauma illustrates the need for heightened awareness and vigilance in the paediatric population. It challenges the traditional notions of risk factors associated with this condition and emphasizes the importance of prompt diagnosis and treatment to prevent serious complications. As the landscape of microbial pathogens continues to evolve, clinicians must be equipped to recognize and manage these abscesses effectively, ensuring favourable outcomes for their patients. This case serves as a reminder of the complexity of nasal pathologies and the necessity for comprehensive assessment and management in paediatric care.

5. Source of Funding

None.

6. Conflict of Interest

None.

Reference

1. Salam B, Camilleri A. Non-traumatic nasal septal abscess in an immunocompetent patient. *Rhinology*. 2009;47(4):476.
2. Ambrus PS, Eavey RD, Baker AS, Wilson WR, Kelly JH. Management of nasal septal abscess. *Laryngoscope*. 1981;91(4):575.
3. Shapiro RS. Nasal septal abscess. *Can Med Assoc J*. 1978;119(11):1321-3.
4. Huang YC, et al. Nasal septal abscess in an immunocompetent child. *Pediatric Neonatol*. 2012;53(3):213-215.
5. Takano K, Abe A, Kakuki T, Himi T. Nasal Septal Abscess in a Pediatric Patient. *J Case Rep Med*. 2014;3(1):1-2.
6. Ali HM, Zavala H, Chinnadurai S, Roby B. Nasal septal hematoma in children: time to diagnosis and resulting complications. *Int J Pediatr Otorhinolaryngol*. 2021;145:110734.
7. Alshaikh N, Lo S. Nasal septal abscess in children: from diagnosis to management and prevention. *Int J Pediatr Otorhinolaryngol.* 2011;75(6):737-44.
8. Drake I, Wilkinson S, Kubba H. Spontaneous abscess of the nasal septum in children: a 10-year series. *J Laryngol Otol*. 2024;138(8):849-51.
9. Li J, Tao Y, Shi X. A case report of spontaneous nasal septal abscess in a child. *Ear Nose Throat J*. 2023;102(4):195-8.
10. Canty PA, Berkowitz RG. Hematoma and Abscess of the Nasal Septum in Children. *Arch Otolaryngol Head Neck Surg*. 1996;122(12):1373–6.

Cite this article: Kishen Khanna PS, Das A, Vijayasundaram S, Subhathra. A case report: Septal abscess in a healthy child without trauma. *J Otorhinolaryngol Allied Sci*. 2025;8(2):59-61.