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CASE STUDY

A Post-Traumatic Nasal Septal Abscess about a Case Report

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ABSTRACT

Introduction: **Nasal septal abscess is the presence of pus between the nasal septum and its mucosa. It Is a rare condition but there are risks of fatal complications if left untreated, it can occur spontaneously or after trauma of nasal septum. Treatments include antibiotics, surgical drainage of abscess, and treatment of its etiology.**

Case Report: **A case of a post-traumatic septal abscess has observed in a 11-year-old child Who was presented with a 5-day history of nasal obstruction, swelling and pain. We have performed incision and drainage with administration of antibiotic, the patient showed satisfactory recovery without any complication.**

Conclusion: **Nasal septal abscess is rare; it can be accompanied by fatal complications if left untreated.**

Keywords: Abscess, drainage, nasal septal, post-traumatic.

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1. Introduction

A nasal septal abscess is a rare collection of pus between the septum and its mucosa [1] post-traumatic septal hematoma, which is usually seen as the most common etiology. Nasal obstruction, pain, and fever are the most common symptoms of nasal septal abscess [2]. The physical examination found swelling of the septum mucosa, rhinorrhea, and nasal deformation. The etiology of nasal septal abscesses can be classified into three categories: post-traumatic septal hematoma, sinonasal or dental infection, and spontaneous occurrence without an underlying cause. The absence of treatment exposes the patient to the risk of fatal complications such as intracranial infection, which is why immediate therapy is indicated to avoid all these complications. Treatments include antibiotics and surgical drainage. We report a case of nasal septal abscess post-traumatic in an 11-year-old female.

2. Case Presentation

An 11-year-old female was presented to the ENT department, Pediatric Hospitals of Nice CHU-Lenval, on April 18th, 2024, with a 5-day history of nasal pain, bilateral progressive nasal obstruction, and rhinorrhea. She did not have a fever. She had a closed-face trauma seven days before, with no history of chronic rhinosinusitis, diabetes, or any other associated diseases. Nasal endoscopy revealed a swelling, with a fluctuant mass obstructing both sides of the nasal cavity (Fig. 1).

The patient was admitted to the ENT department. Laboratory tests showed a C-reactive protein (CRP) at 21. Blood count was significant for a leukocytosis of 15,6 $\times$ 10^9 /L (normal range 4.0–11.0 $\times$ 10^9 /L). We have performed a drainage of the abscess under general anesthesia. A bilateral vertical incision was made in the septal mucosa. Purulent fluid was aspirated and sent for examination. There was no destruction of septal cartilage. At the end of the drainage, a nasal packing was placed on both sides of the nasal cavity, and the patient began an intravenous treatment with amoxicillin-clavulanate. The nasal packing was removed 2 days later. The pus culture revealed a methicillin-sensitive staphylococcus aureus. After 8 days of antibiotic, the C-reactive protein was normalized, the nasal mucosa became normal, and physical examination revealed only slight edema. During follow-up, the nasal airways remained in excellent condition; there was no septal perforation.

3. Discussion

A nasal septal abscess is a rare collection of pus in the space between the nasal septum and its mucosa [3].

Fig. 1. Clinical photograph showing swelling on both sides of the nasal septum with rhinorrhea.

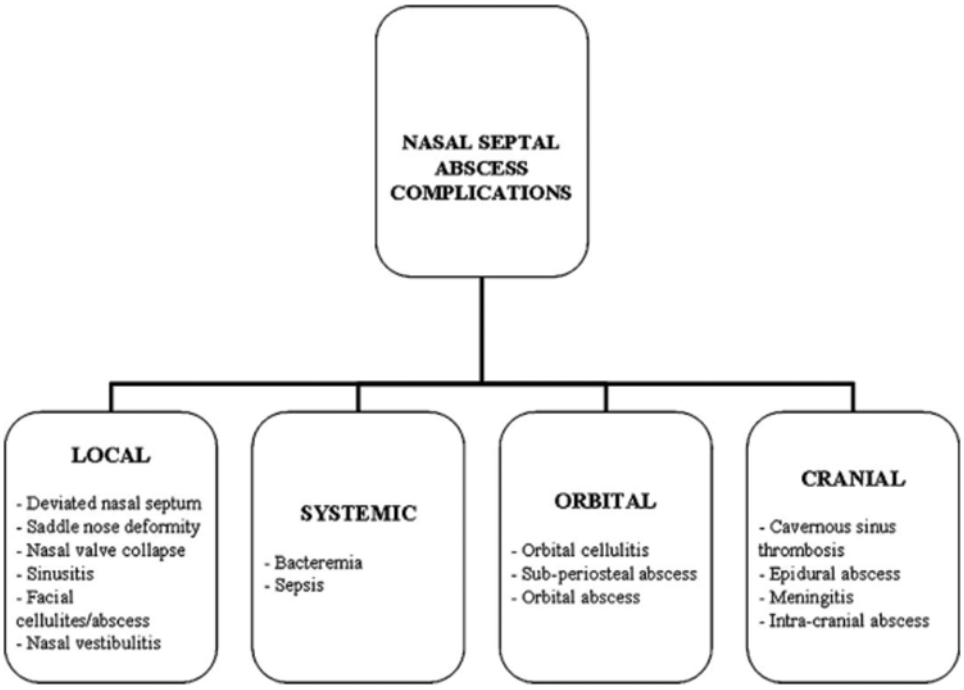

Fig. 2. Complications of nasal septal abscess. Adapted from [3], [15], [16].

The incidence of nasal septal abscesses is unknown, but a male predominance is observed in hematomas and nasal trauma. Moreover, males are more exposed to aggressive activities and violence than females [3]. Nasal trauma is more commonly observed in children, and their mucoperichondrium is not too close to the septum, which promotes the occurrence and spread of septal hematoma and abscess formation [4]. A nasal septal abscess is caused most often by infection of a post-traumatic hematoma in 75% of cases [5] or after a rhino septoplasty hematoma. Previous research has shown that diabetes is an independent risk factor for nasal septal abscesses for patients who have had septoplasty [6]. There are other etiologies, like nasal and sinus infections, dental infections, furunculosis of the nasal vestibule, and some cases of spontaneous abscess. Pourmohammadi described a nasal septal abscess as a complication of the COVID-19 Nasal Swab Test in a patient with thalassemia major [7].

Progressive nasal obstruction and nasal pain are the clinical symptoms of nasal septal abscess; physical examination could find swollen septum mucosa [8] and fever [9]. For the management of nasal septal abscess, drainage is required initially, followed by sensitive antibiotics selected based on the results of bacterial culture [9] to prevent the risk of complications. Abscess is mostly a mono-microbial infection caused by Staphylococcus, methicillin-resistant Staphylococcus aureus, Klebsiella pneumococcus, or Haemophilus influenzae [10]–[12]. Amoxicillin-clavulanate, cloxacillin, and cefuroxime are used for the most common pathogens in nasal septal abscesses [13]. If left untreated, the nasal septal abscess can be exposed to the risks of fatal complications such as intracranial complications [14], facial deformity, and nasal septal perforation (see Fig. 2).

For patients with necrotic defects in the nasal septum cartilage could be reconstructed with autogenous cartilage [17]. Huizing [18] and Masing, were the first to successfully implant homologous cartilage.

4. Conclusion

A nasal septal abscess is a rare but potentially serious ENT emergency. Diagnosis is clinical. Treatment is based on surgery and antibiotics, which must be started immediately to avoid functional, fatal, and aesthetic complications. We must insist on the prevention of these abscesses through appropriate management of any etiology, essentially nasal trauma, and a systematic and complete examination of the nasal cavity in the event of any sinusitis in children.

Conflict of Interest

The authors declare that there is no conflict of interest.

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