SPONTANEOUS NASAL SEPTAL ABSCESS: A CASE REPORT

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ABSTRACT

Spontaneous nasal septal abscess is a rare condition. It typically occurs following traumatic events preceded by septal hematoma. Prompt recognition and intervention are must to avoid further infective and cosmetic complications. Hence, it is considered as a rhinologic emergency. This is a case of 27-year-old female with complaints of nasal mass, swelling, pain and difficulty in breathing for 7 days. She was diagnosed as spontaneous nasoseptal abscess and surgical intervention made her symptoms free.

KEYWORDS

Septal abscess, Rhinologic, Nasal mass

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INTRODUCTION

Nasal septal abscess (NSA) is defined as a collection of pus between the cartilaginous or bony nasal septum and the mucoperichondrium or mucoperiosteum.[1] It typically follows traumatic events preceded by septal hematoma and subsequent infection usually by isolated organisms like *Staphyloccus aureus, S. epidermidis, Staphylococcus pneumonia, S. milleri, S. viridians, Haemophilus influenza* and anaerobic organisms.[2] It is also less frequently associated with infections of nearby structures like nasal furunculosis, sinusitis, influenza, dental infection, and after nasal septal surgery.[3] Due to enriched perineural lymphatics at the anterior skull base and valve less venous communication, the infection may produce lethal complications like cavernous sinus thrombosis, meningitis, brain abscess, subarachnoid empyema and consequent to contiguous spread may lead to orbital cellulitis and abscess. Other complications include saddle nose deformity, septal perforation, and permanent nasal obstruction. Thus, prompt recognition and early intervention is mandatory to prevent the potentially dangerous complications and the development of severe functional and structural deformities in the future.[2-4]

CASE REPORT

A 27-year-old female presented with complaints of nasal mass, swelling, pain and difficulty in breathing for 7 days without any prior traumatic events or nearby surrounding structures infective conditions. The onset of the symptoms were sudden and gradually progressive. The patient was well oriented and there was no associated high grade fever, blurred vision, headache, rhinorrhea, or previous history of surgery or trauma. On local examination of nose, the inspectory findings were of a diffusely swollen erythematous nasal framework with broadened nasal ala and vestibule completely occupied with reddish mass bilaterally. On palpation, there was a local rise of temperature, tender and a tinge of purulent discharge coming out from the top of reddish swelling and the swelling was fluctuating (Figure 1). Anterior rhinoscopy couldn't be performed as the swelling was completely occupying upto the vestibule bilaterally. Oral examination was also normal. There was no presence of cervical lymphadenopathy either. X-ray of nose and paranasal sinuses occipito-mental view and routine blood investigations were sent. Her laboratory findings were of total leucocyte count: 14000 (N75, L 45 E01 M01 B0), hemoglobin 13 gm/dL and platelet count of 180000 cells/cumm. Random blood sugar, urea, creatinine and electrolytes were within normal limits. Urinalysis was normal and serology of HIV and hepatitis B and C were non-reactive. X-ray paranasal sinuses showed a complete opacification in the nasal cavities. She was admitted as a case of septal abscess and planned for incision and drainage under intravenous anesthesia. She was put on injection flucloxacillin 1 gm 6 hourly and metronidazole 500mg 8 hourly and paracetamol 1gm 8 hourly intravenously. Intraoperatively, Freer's incision was made at the bulging and fluctuant area at the left anterior septal region. Around 8 cc of frank pus was drained from both sides of the septum, thorough cleansing was done with betadine mixed saline and hemostasis was secured. A corrugated drain was kept at the incision site and bilateral anterior nasal packing was done with the application of bolster. The pus sample was sent for culture and sensitivity testing. Pack was removed after 48 hours followed by placement of ciprofloxacin ointment impregnated cotton pledget on both nasal cavities. Dressing was done on daily basis. *Staphylococcus aureus* was isolated on pus culture and sensitivity and cloxacillin was sensitive. On 5th postoperative day, she was discharged on oral and topical medications and advised to come after 1 week. She was free of complaints on her next visit (Figure 2).

Figure. 1. Preoperative picture showing bilateral naso-septal swelling and broadened nose

Figure 2. Picture on 1st follow up

DISCUSSION

NSA is an uncommon entity. It usually develops in a pre-existing septal hematoma with a history of nasal trauma and less commonly associated with nasal furunculosis, sinusitis, influenza, dental infection, and after nasal septal surgery.[3] Beck AL et al had classified the etiology of nasal septal abscesses into three distinct groups: primary causes (such as trauma), secondary causes, which usually results from surrounding structure infections, and cases with an idiopathic origin. There are very limited publications on idiopathic or spontaneous nasal septal abscess.[3,5-7]

The most common features of the NSA is nasal obstruction and pain. In contrast, septal hematoma usually presents as painless nasal obstruction after injury. Other signs and symptoms include headache, fever, saddle nose, blurring of vision and swelling of the nasal septum. On anterior rhinoscopy, it is often mistaken as nasal septal deviation or inferior turbinate hypertrophy or neoplastic conditions by less experienced physicians.[3,8-10] In doubtful condition, aspiration can be done for confirmation after taking a detailed history.

The accumulation of pus between the cartilage and perichondrium will lead to ischemic necrosis of the cartilage resulting in septal cartilage destruction, septal perforation, saddle nose deformity, functional dysfunction and cosmetic problems.[10] In children in particular, it may affect the normal development of the nose and maxilla leading to external naso-facial deformity.[10] Life-threatening intracranial complications; such as brain abscess, meningitis and cavernous sinus thrombosis; especially in the immunocompromised as well as in immunocompetent patients may progress rapidly if the NSA remains untreated.[9,10]

Thus, it's an emergency condition and should have a prompt recognition and intervention. Patients are usually admitted with intravenous broad spectrum antibiotics, analgesics and

antipyretics followed by incision and drainage, bilateral nasal packs with a drain in situ. Either of vertical or horizontal incision can be made in the anterior aspect of the cartilaginous septum. Later on the antibiotics are changed as per pus culture and sensitivity results and the patients are discharged by around 5-7 days on oral medications.

Fortunately, our case, along with the majority of the cases as shown in table 1, had a favorable outcomes, with only one case reporting a mild dorsum depression for which rhinoplasty was recommended. Therefore, early diagnosis and prompt intervention is vital in preventing complications.[11]

Table 1. Some of the reported cases of nontraumatic nasal septal abscesses in immunocompetent patients

Reference	Sex	Age (years)	Duration (days)	Infectious agent	Treatment	Outcome
Yavuz and Vural	Male	18	10	Amoebiasis	Drainage (LA) + oral metronidazole	Favorable
Cai et al.	Male	7	Non-available	*MRSA*	Drainage (GA) + clindamycin	Favorable
Wang and Chen	Male	58	Non-available	*V. streptococci*	Drainage (GA) + antibiotic	Saddle nose
Balouk et al.	Female	29	3	Non-available	Drainage + antibiotic	Favorable
Bennett and Rapado	Female	39	21	Non-available	Drainage + antibiotic	Loss of the central quadrilateral cartilage
Salam and Camilleri	Female	38	4	Non-available	Drainage (GA) + antibiotic (intravenous amoxicillin/clavulanic acid)	No longer follow up
Adnane et al.	Male	35	5	*S. aureus*	Drainage (GA) + antibiotic (intravenous amoxicillin/clavulanic acid)	Favorable
Chung et al.	Male	41	10	*MRSA*	Drainage (GA) + antibiotic (intravenous amoxicillin/clavulanic acid)	Mild nasal dorsum depression, augmentation rhinoplasty has been suggested

V. streptococci: Viridans streptococci, S. aureus: Staphylococcus aureus, MRSA: Methicillin resistant S. aureus, LA: Local anesthesia, GA: General anesthesia

CONCLUSION

NSA is a rare rhinological emergency condition. One should be highly suspicious to prevent potential morbidities associated with this condition. There should be meticulous and detailed examination and history taking since it primarily relies on clinical diagnosis necessitating the prompt initiation of treatment. In the absence of risk factors and unavailability of imaging investigations, one should not impede the initiation of treatment. Timely intervention is key to avert both nasal deformities and potential intracranial complications Management should begin with instant surgical drainage and intravenous broad spectrum antibiotics.

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