Nasal Septal Abscess with Uncontrolled Diabetes Mellitus: Case Reports

R Dinesh, MBBS, S Avatar, MS, Ali Haron, MS, Suhana, MD, Azwarizan, MD

Department of Otorhinolaryngology, 34000 Hospital Taiping, Perak, Malaysia

SUMMARY

Nasal septum abscesses caused by uncontrolled diabetes mellitus are rare. We report 3 cases. Very few cases have been published concerning non-traumatic nasal septum abscesses . The development of the condition, possible complications, and treatment are discussed.

KEY WORDS:
Nasal septal abscess; diabetes mellitus; non-trauma

INTRODUCTION

A nasal septal abscess (NSA) is defined as a collection of pus between the cartilage or bony septum and its mucoperichondrium or mucoperiostium. NSA is a rare entity, but, if diagnosed and attended to promptly, can be cured with little residual deformity[2]. Nasal septal abscesses can be potentially fatal.

Causes range from trauma, which appears to be the commonest predisposing factor, occurring up to 75% of the cases, ethmoiditis, sphenoiditis, dental abscess, nasal furuncles and AIDS [3]. The pathogenic organism is the *Staphylococcus*. Much less frequently *Pneumococcus* and *Streptococcus* are found[4]. Most nasal septal abscesses occur in the anterior cartilaginous septum, although an abscess of the posterior nasal septum has been found.

CASE REPORTS

Case 1

A 59 years old Indian lady with a history of diabetes mellitus, hypertension, renal impairment and on treatment with subcutaneous insulin presented with pain and swelling over the nose for 3 days. She had no history of trauma, sinusitis or any surgical procedures. Direct nasoendoscopy showed swelling of the anterior aspect of left nasal septum. There was no polyp, turbinate hypertrophy or pus at osteomeatal complex. Random blood sugar was 20.3mmol/l. She had an incision and drainage done under local anesthesia where 2 cc of pus was drained and a corrugated drain was inserted. The pus was sent for microbiological examination. Patient was started on IV cefuroxime 1.5 grams stat and 750 mg tds for 5 days, IV metronidazole 500mg tds and normal saline flushing of the corrugated drain site. She was started on sliding scale insulin for rapid blood sugar control. The microbiological examination showed *Staphylococcus aureus* sensitive to cefuroxime. After completion of 5 days of intravenous antibiotics, there was no pus at the incision site and the corrugated drain was removed. Blood sugar was well controlled and patient was discharged with oral cefuroxime for another 5 days and subcutaneous insulin. Patient was seen after a week and showed no evidence of infection and blood sugar was well controlled.

Case 2

A 68 years old Mala lady with history of diabetes mellitus, hypertension and on oral hypoglycemic medication presented with a swelling of the nose associated with nasal pain and nasal block for 3 days. She had no history of sinusitis, trauma or surgery. On examination, there was a swelling of the collumella and tip of the nose. Direct nasoendoscopy showed a swelling of the anterior aspect of left nasal septum and bilateral inferior turbinate hypertrophy. There was no pus at the osteomeatal complex or nasal polyp. Random blood sugar was 22.7mmol/l. She underwent incision and drainage under local anaesthesia and minimal pus was drained out. A corrugated drain was also inserted. The patient was started on IV cefuroxime 1.5 gram stat and 750mg tds and IV metronidazole 500mg tds and normal saline flushing at the corrugated drain site. She was also started on sliding scale insulin for sugar control. There was not enough pus for microbiological evaluation. She completed intravenous antibiotics for 1 week. Blood sugar was well controlled and patient was discharged with oral cloxacillin for another one week and oral hypoglycaemic drug. Patient was seen after one week and showed no evidence of infection with good sugar control.

Case 3

A 63 years old Malay lady with a history of diabetes mellitus, hypertension, bronchial asthma and on treatment with oral hypoglycemic medication presented with pus discharge from the right nostril associated with nasal block for 3 days. There was no history of trauma, sinusitis or any surgical procedures. Direct nasoendoscopy showed bilateral septal swelling at the anterior aspect. There was no pus at the osteomeatal complex or inferior turbinate hypertrophy. Random blood sugar was 19.0mmol/l. Aspiration of the nasal septum swelling showed pus. Under local anesthesia, incision and drainage was done and 5 cc of pus was drained and a corrugated drain was inserted. Patient was started on IV amoxicillin/clavulanic acid 1.5 gram tds with sliding scale insulin for blood sugar control. Microbiological examination of the pus showed Beta *Haemolytic Streptococcus* which was sensitive to penicillin. Patient completed one week intravenous antibiotics and

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Corresponding Author: Dinesh Raj Gurunathan, Hospital Taiping, Otorhinolaryngology, Jalan Taming Sari, Taiping, Perak 32000, Malaysia
Email: dineshrajg@yahoo.com

discharged with oral amoxicillin/clavulanic acid for another 1 week and oral hypoglycemic drug. Patient was seen after one week and showed no evidence of infection. She however developed saddle nose deformity.

DISCUSSION

Abscesses of the nasal septum are uncommon. The most common cause is infection of an untreated nasal septal hematoma following nasal trauma. More infrequently, nasal septal abscess occurs following nasal surgery, furunculosis of the nasal vestibule, uncontrolled diabetes mellitus, sinusitis, influenza, and dental infections. Nasal obstruction is the most common presenting symptom seen with NSA. Other associated symptoms include throbbing nose pain, general malaise, fever, headache, and tenderness over the perinasal area[5].

As hematoma formation occurs in the nasal septum the perichondrium is lifted away from the cartilage. The cartilage is thus deprived of its blood supply and tends to be destroyed rapidly, often within 24 hours. Destruction of the quadrilateral cartilage may result in subsequent saddle deformity of the nasal dorsum. Other complications of nasal septal abscess are rare. They include meningitis, septal perforation, orbital cellulitis, cavernous sinus infection and thrombosis, and osteomyelitis of the cranial bones.

There have been very few cases reported of nasal septal abscess caused by uncontrolled diabetes. A retrospective study on nasal septum abscess was done by University Kuala Lumpur where there were 14 cases reported between June 1981and June 1991 of which only one case was attributed to uncontrolled diabetes[3]. There were also 2 cases reported by Tokyo Women's Medical University in 2001 where patient had bilateral nasal obstruction with uncontrolled diabetes and developed nasal septal abscess[1].

Prevention of serious complications can be achieved by prompt and effective surgical treatment[2,5]. Different reports advocate almost same treatment methods. Antibiotic treatment has to be given immediately to prevent bacteriemia, which will occur on manipulation of a mature abscess[2,5]. Most often the choice of antibiotic is penicillin. Bacteriology of aspiration samples reveal that the pathogenic organism is usually *Staphylococcus*. Less often, it may be *Streptococcus pneumonia* or *β-hemolytic Streptococcus*. An incision across the swelling is made as near as possible to the floor of the nose to prevent pocketing of the pus. Necrotic tissue and cartilage, granulations, and blood clots are removed. Drainage is provided by Penrose drain sutured in the incision. The packing serves both as a stent for the nasal skeleton and septum. It prevents reaccumulation of blood and pus.

CONCLUSION

Nasal septal abscess is a rare condition. However uncontrolled diabetes should be considered as a cause in any patient with nasal septal abscess when trauma is excluded. Therefore prompt treatment should be given to prevent serious cosmetic nasal deformity and intracranial complications. Sugar control must be dealt with aggressively.

REFERENCES

1. Two cases of Nasal Septal Abscess with Uncontrolled Diabetes Mellitus, Takano S, Uchimura K, Okabe H, Kitajima S, Aramaki H (Tokyo Women Medical University Dani Hospital) Vol 71: 832-5 (2001).
2. Rafael Santiao, Villalonga P, Maggioni A. Nasal Septal Abscess: A Case Report. Int Pediatr. 1999; 14: 229-31.
3. MAB Jalaludin Nasal Septal Abscess- Retrospective analysis of 14 cases from University Hospital Kuala Lumpur. SINGAPORE MED J Vol 34: 435-7.
4. Thomson STC: Disease of the septum, in Disease of the Nose and Throat: a Textbook for students and practioners, 6th reved. Nagus VE, BatcmanGH(eds) Cassel London, 1955, pp 180-82.
5. Matsuba H, Thawley SE. Nasal Septal Abscess: Unusual Causes, Complications, Treatment, and Sequelae. Ann Plast Surg 1986; 16: 161-6.