Nasal Septal Abscess with Uncontrolled Diabetes Mellitus: Case Reports

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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. 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. The pathogenic organism is the Staphylococcus. Much less frequently Pneumococcus and Streptococcus are found. 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. There was no pus at the osteomeatal complex or inferior turbinate hypertrophy. There was no pus at the osteomeatal complex and bilateral inferior turbinate hypertrophy. There was no history of trauma, sinusitis, or nasal polyp. Random blood sugar was 22.7mmol/l. She underwent incision and drainage under local anesthesia 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 and blood sugar was well controlled.

Case 2
A 68 years old Malay 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 trauma, sinusitis, trauma or surgery. On examination, there was a swelling of the collar 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 anesthesia 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 and blood 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
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.

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 sepal abscess are rare. They include meningitis, sepal 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 1981 and June 1991 of which only one case was attributed to uncontrolled diabetes. 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.

Prevention of serious complications can be achieved by prompt and effective surgical treatment. 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. 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 pneumoniae* 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 sepal abscess is a rare condition. However uncontrolled diabetes should be considered as a cause in any patient with nasal sepal 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**