A red and swollen nose

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Case History

A 36-year-old woman with a history of type-2 diabetes mellitus and dyslipidemia presented to a general practice facility with a four-day history of a red, swollen, and painful nose. She had been feeling feverish and noticed some discharge from the tip of her nose on the morning of presentation. She couldn't recall any trauma or insect bite to the area. She denied plucking her nasal hair or picking or blowing her nose excessively. There was no history of other dermatological conditions. Her medications were extended-release metformin (2g at night), modified-release gliclazide (60mg in the morning) and simvastatin (20mg at night), but she admitted to not taking them regularly. She was unsure of her glycemic and lipid control as she had not seen any doctor for her chronic conditions in more than one year.

Clinically, she was alert and oriented. Her temperature was 36.5°C, blood pressure was 128/72 mmHg and pulse was 86 beats per minute. Her weight and height were 74.5kg and 164cm, respectively, making her body mass index (BMI) 28 kg/m^2. Capillary blood glucose was 12 mmol/L.

Examination revealed an erythematous, tender swelling over the nasal tip with a central punctum. There was crusting over the right vestibule. There were no gingival, buccal or facial swelling, nor sinus or facial tenderness. Her nasal passages were otherwise clear. There was no cervical lymphadenopathy.

Figure 1. The tip of the nose showing localized edema, erythema, with a central punctum and minimal crusting.

Questions

1. What is the diagnosis?
2. How should this condition be treated?
3. What are the more severe complications of this condition?

Answers

1. She had nasal vestibulitis with nasal tip abscess. Nasal vestibulitis (NV), nasal furunculosis (NF), or nasal vestibular furunculosis (NVF) is a localized infection of the hair-bearing nasal vestibule.[1] Dahle proposed the nomenclature NVF because it is specific to the nasal vestibule and the acute focal symptoms present.[2] It is associated with minor trauma to the area from nose picking, hair plucking, excessive nose blowing, and topical nasal steroid use.[2,3] Staphylococcus aureus may be the most common causative agent.[1]

2. Mild cases can be treated with warm compresses and topical mupirocin.[4] If there is no response, oral antibiotics should be used. More severe cases involving midfacial cellulitis or abscess formation such as in this patient, should be treated with systemic antibiotics.

3. These are potential severe intracranial complications, including[5,6]
   - Ophthalmic vein thrombosis
   - Cavernous sinus thrombosis
   - Orbital abscess.[7]

   The infected area involves the "danger triangle" zone of the face, which consists of the area from the corners of the mouth to the bridge of the nose, including the nose and maxilla.[8,9] There is consistent communication between the facial vein and cavernous sinus that is important in the spread of infection.[10]

Case continued

She was admitted under an otolaryngologist and was started on intravenous ceftriaxone and analgesics. Her abnormal blood results

included a white cell count of 13.05, (normal 4.0-10.0 x 10^3/μL), C-reactive protein of 17.7 (<5.0 mg/L), erythrocyte sedimentation rate of 30 (0-20 mm/hr) and HbA1c of 11.9% (106 mmol/mol). No further pus was obtained from the exploration and aspiration of the nasal tip punctum.

Her symptoms improved after three days of intravenous antibiotics, and she was discharged with a course of oral cefuroxime. She was counseled for regular follow up and treatment adherence to ensure good blood glucose control. This would help reduce the infection risk. An appointment was scheduled for a week post-discharge to review her progress, fasting lipid profile, and blood glucose.

Discussion

Previous reports suggest that NVF is commonly presented in clinical practice.[2] Given the benign initial symptoms, patients will normally present to a primary care facility. Hence, it is important for primary care doctors to be aware of this condition and understand the potentially severe complications. Mild cases can be managed with topical or oral antibiotics. Other infections to be considered around the perinasal area include impetigo and cellulitis.

There is a surprising lack of published literature on this condition. We found only three case reports published in English on intracranial complications from NVF.[6,7,9] In a retrospective review of 118 cases admitted to a tertiary medical center, the complication rates were 78.81% and 48.30% for mid-facial cellulitis and nasal vestibule abscesses, respectively.[1] The authors hypothesized that intracranial complications were not observed because appropriate treatment was given or these complications are actually very rare.[1] It has also been proposed that the spread of infection was due to the facial veins being in direct communication with the cavernous sinus, and the absence of valves in the facial veins facilitated the infection process.[8] Another study, however, demonstrated that the facial and superior ophthalmic veins do possess valves.[10] Hence, they proposed that the existence of communication between the facial vein and cavernous sinus and the direction of blood flow are important in the spread of infection from the face.[10]

Key points

- Mild cases of nasal vestibulitis/nasal vestibular furunculosis can be treated with warm compresses and topical antibiotics.
- Systemic antibiotics should be initiated for patients not responding to oral antibiotics, those with midfacial cellulitis or abscess formation, or more severe complications.
- Ophthalmic vein thrombosis, cavernous sinus thrombosis, and orbital abscess are rare but serious intracranial complications.

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Conflict of Interest

Authors declare none.

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How does this paper make a difference to general practice?

- This paper highlights that although nasal vestibulitis/nasal vestibular furunculosis may be a common presentation to general practice, we should be aware of the rare but potentially severe intracranial complications.

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