Nasal Tip Necrosis a Sign of Leprosy: Case Report

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Abstract

We report a case of leprosy presented with a nasal tip necrosis in a female in her 50s with no, apparently, risk factors of leprosy. We highlight the importance of taking a thorough clinical history and widen the differential diagnosis to avoid misdiagnosis and delay of treatment.

Introduction

Mycobacterium leprae, an acid-fast, rod-shaped bacillus, obligate intracellular pathogen causing leprosy, or Hansen disease. Leprosy is a chronic slowly growing granulomatous disease involving the skin, peripheral nerves, eyes, and mucosa of upper respiratory tract. It is usually found in tropical and developing countries. Leprosy occurrence in Saudi Arabia is rare, it was reported that 242 freshly diagnosed leprosy cases were in Saudi Arabia from 2003 to 2012. According to the Ridley and Jopling classification system, there are five types of leprosy: lepromatous (LL), tuberculoid (TT), borderline borderline (BB), borderline lepromatous (BL) and borderline tuberculoid (BT). They have also used the term indeterminate leprosy (IL) when a biopsy sample shows evidence of leprosy without a clear clinical manifestation. (3) If left untreated, leprosy can cause progressive and permanent damage to the skin, nerves, limbs, and eyes. Thus, rapid recognition is crucial to avoid complications of leprosy.

Case report

A 56-year-old lady, known to have diabetic mellitus, hypertension, dyslipidemia, hypothyroidism, and sinusitis. She presented to the outpatient department of ear nose and throat (ENT) six months prior to admission complaining of bilateral nasal obstruction on and off for five months associated with nasal discharge, facial rash, and erythema around nasal bridge started four months ago. She had no post-nasal drip, no change of smell, no facial pain, no ear symptoms, no throat symptoms, no hair loss nor photosensitivity. She had a history of on and off joint pain. Her social history is remarkable as she was born in Al-Khurma and lived there for fifteen years. Family history remarkable for rheumatoid arthritis in both her brother and son. On examination, she was vitally stable, afebrile. Nasal examination showed deviated nasal septum with thick nasal discharge, hypertrophied inferior turbinate, the middle meatus and nasopharynx were clear, no septal perforation. Ear exam: bilateral intact tympanic membrane. Throat exam: grade I tonsil bilaterally. Neck examination: no neck masses. Facial rash, nasal and perinasal swelling and tenderness with palpation were noted. Lower limb: no deformity, no scar, no swelling. The plan in the clinic was to give nasal spray, order sinuses computed tomography (CT), follow CT result, and to refer to rheumatology and dermatology.

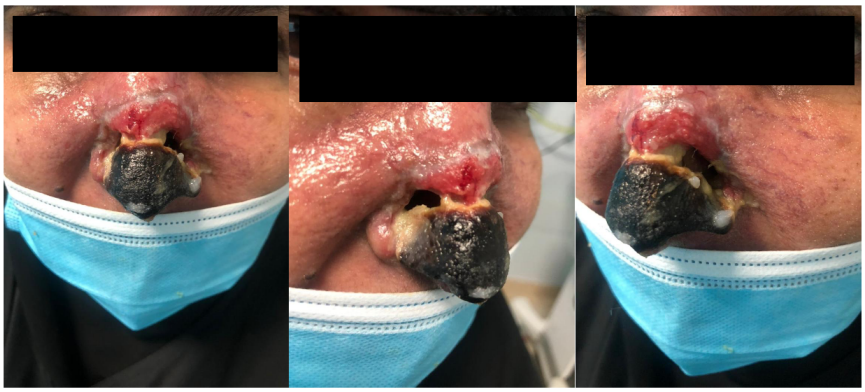


Figure 1: the photos of our case showing nasal tip necrosis

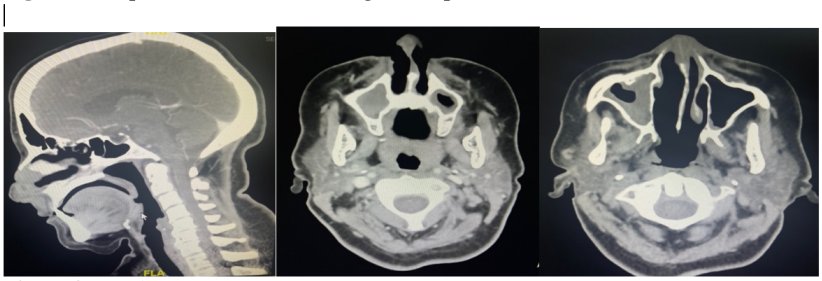


Figure 2: CT sinuses

Figure 1: CT sinuses.

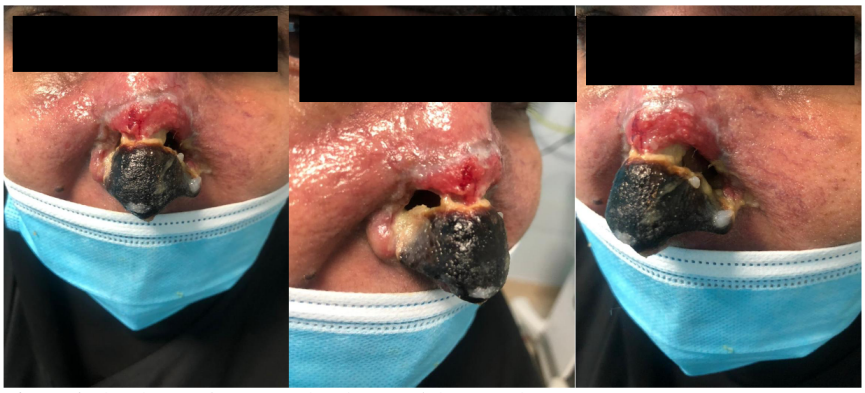
Two months later, the patient was seen in dermatology clinic and was treated conservatively with local creams as acne vulgaris. At that time, she was also seen by rheumatology. Laboratory workup was done. (Table 1) shows the results of the laboratory workup. CT sinuses (Figure 1) reported small poorly delineated non-enhancing soft tissue swelling seen at anterosuperior aspect of nasal cavities, associated with invovment of subcutenious fat and thicking of skin at the inferior aspect of nasal bone. Nasal bone and nasal septum appeared intact.

WBC: 11.4
Hgb: 161 g/l
Electrolytes: normal
Liver function test: normal
Bone profile: normal
ESR: 42 (high)
CRP: 9 (high)
Antinuclear antibody: positive
Rheumatoid factor: negative
C3 and C4: within normal range
DAT: weak positive
Anti IgG: weak positive
Anti C3d: negative
Urine analysis: unremarkable
Anti-DNA: negative
ELISA IgG and IgM: negative
Anti gly IgG and IgM: negative
SS-A and SS-B: negative

WBC: 11.4
SM, RNP, JO-1 and SCL-70: negative **Hepatitis A, B and C:** negative

Table 1: Laboratory results.

Two days prior to ER presentation the patient came to the outpatient ENT clinic complaining of skin edema, nasal tip necrosis (Figure 2) associated with needle prick sensation, and on/off nasal obstruction. She had no nasal discharge, no paroxysmal nocturnal dyspnea, no smell loss, nor cough. On examination, there was midfacial necrotizing lesion localized to dorsum of the nose with exposed cartilage, with surrounding erythema and inflammation. The lesion started as pustule with pus and underlying facial erythema localized to central face. No joint pain no rash, no hematuria, hemoptysis



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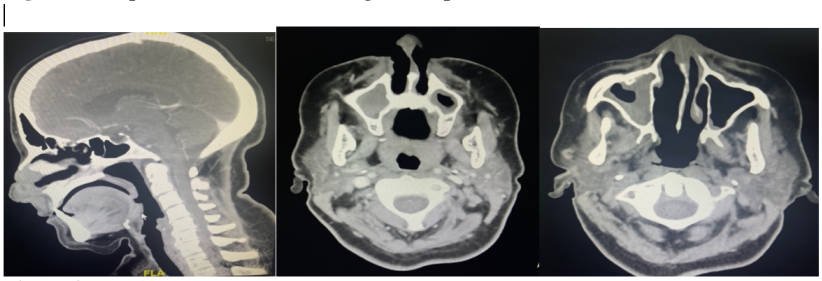


Figure 2: CT sinuses

Figure 2: Clinical presentation showing nasal tip necrosis

Then the patient presented to emergency department (ER) with the same complaint. The ENT team were contacted. Then, she was admitted for further investigation. In ER, three biopsies were taken, mid nasal dorsum, left and right nasal dorsum. All showed acute inflammatory cells with no malignant cells. Also, culture was taken in ER and showed normal skin flora moderate growth. Blood culture was negative. Hepatitis A, B, and C negative. The patient was started on empirical antibiotic, Tazocin. At that time, by the clinical judgement of the nasal examination, our differential was either midline NK T cell lymphoma, granulomatosis with polyangiitis, leprosy, or vasculitis.

During her stay, Infectious diseases (ID) team were consulted, their recommendation was to discontinue Tazocin and start ceftriaxone 500mg once daily and metronidazole every 8 hours, amphotericin B 300mg intravenously. They also requested for acid fast bacilli, and culture. All came with negative results. Rheumatology team were also consulted, they requested for C-ANCA, P-ANCA, ANA, SSA, and SSB. All were

negative except for ANA it came with positive result. Also, a chest x-ray was ordered and showed no cavities.

Next day the patient was taken to ENT operating room (OR). Endoscopic examination was normal, and no abnormality was seen except the nasal tip. Twelve biopsies were taken under general anesthesia. From right and left middle nasal turbinate, nasal septum. The result of the biopsies showed granulation tissue formation with dense acute inflammatory cells and no malignancy. Biopsies from the skin of right nostril, skin of left nostril were also taken, it showed chronic inflammation, no histopathological evidence of vasculitis, and no malignancy. Culture from wound and tissue came with a negative result, no organisms were seen.

Dermatology team were contacted, they took two punch biopsies from healthy tissues (cheeks) and requested for Hematoxylin and Eosin stain (H&E). Fungal, bacterial, mycobacterial swabs were also requested. Fungal culture and acid-fast bacilli were both negative. LDH normal 136. The biopsy was reported as a granuloma in deep dermis mainly around peripheral nerve. For a better visualization of Mycobacterium leprae, Wade-Fite acid fast stain (modified Ziehl-Neelsen stain) was used. It revealed scanty acid-fast bacilli-like organisms around the nerve suggestive of leprosy. Grocott's Methenamine Silver (GMS) and Periodic Acid Schiff (PAS) stains were both negative.

After the biopsy result, ID were contacted, and they advised to start the patient on a triple antibiotic regimen which is dapsone 100mg orally once daily, rifampicin 600mg orally once monthly, clofazimine 50mg orally once daily, and follow up in their clinic. No surgical intervention other than the biopsies was done. Finally, the case was referred to plastic surgery for reconstruction and based on their recommendation, the reconstruction will be done after one year of starting the treatment, and if the disease is stable at that time. (Figure 3) Shows the presentation after 6 months of treatment initiation.

Discussion

Since the first meeting of the World Health Organization's Leprosy Expert Committee in 1956, the prevalence of leprosy has decreased worldwide. However, there are still endemic leprosy areas, such as India and Indonesia. Regarding the epidemiology of leprosy in Saudi Arabia, Asiri et al. reported the occurrence of 242 new leprosy cases over a 10-year period spanning 2003-2012. Leprosy is known to exist in Saudi Arabia, with a geographical distribution showing clustering of cases in the South-Western and Eastern regions of the country. Unlike our case, as she presented in Riyadh, at the central region of the country. However, she was born and lived fifteen years of her life in Al-Khurma, which is a city in the western region of the country. Emphasizing the importance of taking a thorough past medical and social history.

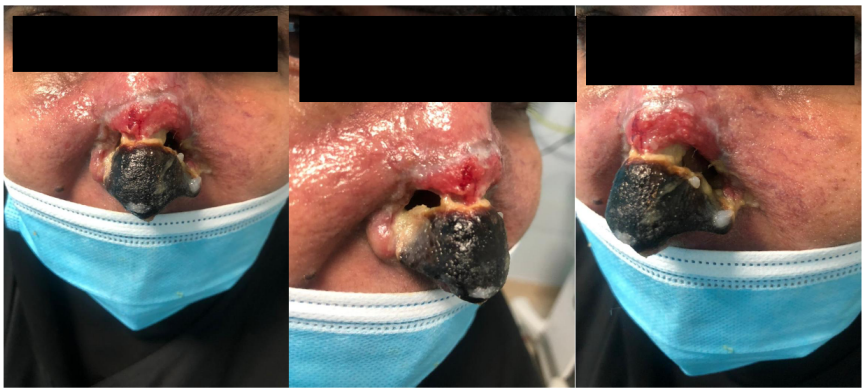
Of diagnosed leprosy patients in Saudi Arabia, 57% are immigrants, and leprosy is more common in males than females at a ratio of 3:1. Our patient is of a Saudi nationality, with no direct physical contact with immigrants nor recent contact with patients known to have leprosy. She had no history of travelling abroad.

Dermatological lesions and peripheral neuropathy are the cardinal clinical features of leprosy. Unlike our case, Swain SK. and his colleagues report that the clinical presentation in their case was chronic unilateral nasal obstruction and unilateral/ same side intermittent epistaxis. Other case presented with chronic nasal congestion, rhinorrhea, intermittent epistaxis, and headache. Our patient was complaining of on/off bilateral nasal obstruction for five months associated with nasal discharge, facial rash, and erythema around nasal bridge started four months prior to her first presentation. No epistaxis.

Upon physical examination, the case report done by Swain SK presented with a small reddish mass in the anterior part of nasal cavity. Al-Aboud et al. reported a case with asymptomatic reddish plaque over the nose extending to malar area measuring 12 cm in diameter for six months. Nasal tip drop, or saddle nose, has been reported in the literature due to cartilaginous destruction with no nasal tip necrosis. Our patient, however, presented with midfacial edema with no septal perforation. Then nasal tip necrosis in a later presentation. This unusual presentation led to a delay in the final diagnosis which was based on histopathological examination.

Conclusion

Because of the decrease of reported cases over the past several years, leprosy is not considered as a major public health problem in Saudi Arabia. Nevertheless, it has not been eradicated yet. Up to our knowledge, no similar case was reported regarding nasal tip necrosis. Leprosy could be one of the differential diagnoses of nasal tip necrosis, which has not been reported before. This case shows the importance of maintaining a high suspicion index for leprosy even in non-endemic areas.



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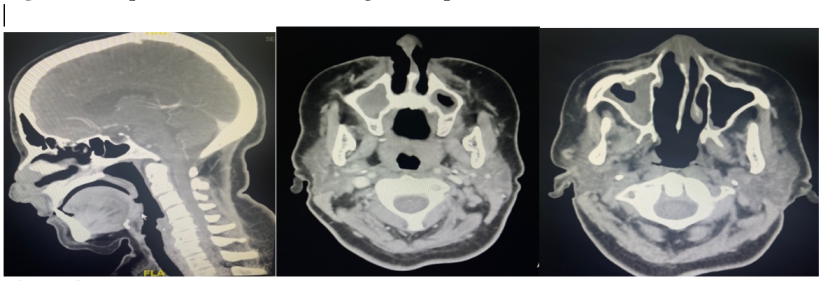

Figure 2: CT sinuses

Figure 3: Six months of starting the treatment.

Reference:

Informed Consent Statement: Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy

Declaration statement for conflict of interest: None.

Data Availability Statement: Not applicable