International Journal of Otorhinolaryngology and Head and Neck Surgery
Sachidananda R et al. Int J Otorhinolaryngol Head Neck Surg. 2024 Dec;10(6):740-742
http://www.ijorl.com
pISSN 2454-5929 | eISSN 2454-5937

DOI: https://dx.doi.org/10.18203/issn.2454-5929.ijohns20243518

Case Report

Primary nasal tuberculosis due to inoculation by nasal picking: a case report

Ravi Sachidananda[1], Nithya Venkataramani[1]*, Suraksha Rao[2], Pradeep Ishwarappagol[3], Vivek Gundappa[3], Saikiran Shankarnarayan[4], Manjunath M. K.[5]

[1]Department of ENT, People tree Hospitals, Bangalore, Karnataka, India
[2]Department of Pathology, People tree Hospitals, Bangalore, Karnataka, India
[3]Department of Pulmonology, People tree Hospitals, Bangalore, Karnataka, India
[4]Department of Medicine, People tree Hospitals, Bangalore, Karnataka, India
[5]Department of ENT, Sparsh Hospitals, Bangalore, Karnataka, India

Received: 03 May 2024
Revised: 02 October 2024
Accepted: 05 November 2024

***Correspondence:**
Dr. Nithya Venkataramani,
E-mail: nithya.venkataramani@gmail.com

ABSTRACT

Tuberculosis of the nose is a rare entity and is usually secondary to pulmonary tuberculosis. Due to its nonspecific presentation, it can be easily missed. Early diagnosis and treatment helps to prevent associated morbidity. We present a case of nasal tuberculosis in a 39-year-old male patient with the habit of nasal picking who presented with a non-healing septal ulcer. Histopathology revealed the diagnosis of tuberculosis. He did not have any evidence of pulmonary tuberculosis. A diagnosis of primary nasal tuberculosis due to inoculation by finger nail trauma was made and patient was treated with antitubercular medications. It is important to have a high index of suspicion to prevent late diagnosis and sequelae.

Keywords: Nasal tuberculosis, Primary, Inoculation

INTRODUCTION

Nasal tuberculosis is an uncommon entity.[1] The disease was first described by Giovanni Morgagni in 1761.[2] It is a chronic nasal condition and usually occurs secondary to pulmonary tuberculosis.[3] Due to the rare nature of disease and non-specific symptoms, the diagnosis of often missed. Diagnosis requires a high index of suspicion and is confirmed by histopathological evidence of granulomatous inflammation with identification of bacilli.[4] Early identification and treatment will help in preventing complications.

We present a case of primary nasal tuberculosis which presented as a non-healing septal ulcer which progressed rapidly.

CASE REPORT

A 39-year-old male patient presented with complaints of nasal blockage since one month and recurrent episodes of epistaxis. He did not give any history of headache or purulent nasal discharge. On examination he had an ulcer on the right side of nasal septum. On further questioning he gave history of nasal picking. With an initial diagnosis of traumatic anterior epistaxis, patient was managed conservatively with nasal decongestant and topical antibacterial ointment and advised follow up. On repeat visit, he was treated with oral antibiotics. However, the ulcer did not respond to medical treatment and continued to increase in size with fleshy margins. Computed tomography scan of paranasal sinuses (CT PNS) showed only mucosal abnormality over septum no significant change in the rest of nose and sinuses and no signs of

destruction. Intraoperatively, he was found to have unhealthy mucosa with involvement of septal cartilage. Patient underwent excision biopsy of the non-healing ulcer and specimen was sent for histopathological examination and gene expert with the differential diagnosis of granulomatous diseases and malignancy. Histopathological evaluation revealed caseating granulomas with giant cell and was hence diagnosed as tuberculosis. Gene-Xpert was positive for Mycobacterium tuberculosis. Patient then underwent complete workup for tuberculosis with blood investigations and X-ray chest, all of which were normal. Mantoux test was positive with induration of 17 mm. While counselling, he revealed the history of compulsive nasal picking whenever he was stressed. He was then started on antitubercular treatment (ATT) as per regimen (2 months Isoniazid [H], Rifampicin [R], Pyrazinamide [Z], Ethambutol [E] HRZE + 4 months HRE) and has completed 6 months of treatment. He also underwent counselling and behavioral therapy to avoid nasal picking. On follow up visit, there was very good healing of septal mucosa and complete resolution of ulcer (Figure 1). On follow up after 1 year, he is doing well with no evidence of recurrence, however, due to cartilage involvement he had a subtle saddle deformity (Figure 2).

Figure 1: Healed septal mucosa after 6 months of treatment.

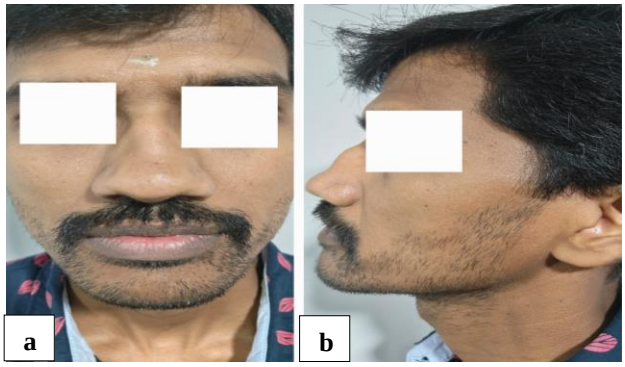

Figure 2: Saddle nose deformity after 1 year (a) anterior view, and (b) lateral view.

DISCUSSION

Primary nasal tuberculosis is a rare clinical entity even in places where prevalence of tuberculosis is high.[3] It is a diagnostic challenge in view of its nonspecific presentation and chronicity.[4] Extrapumonary tuberculosis cases are on the rise since late 1980's.[5] The common site of extrapulmonary TB in the head and neck region include cervical lymph nodes.[6] Extranodal head and neck TB constitute less than 1 percent of TB cases.[7] Tuberculosis of nose is usually secondary to pulmonary tuberculosis or facial lupus, however, it may rarely be primary caused by direct inhalation or inoculation.[2] The nasal mucosa has its protective mechanisms which makes tuberculosis very rare, but a break in the mucosa due to trauma or other atrophic changes can cause an infection.[8] The rare nature of the disease and its close similarity of presentation with other granulomatous diseases leads to delay in diagnosis and treatment.[9]

Nasal tuberculosis can be asymptomatic and present very late. The symptoms include nasal blockage, crusting, discharge, epistaxis. Sinus involvement may present with headaches. Signs include non-healing ulcer, mainly over the anterior septum which is rapidly progressive, it may rarely involve the turbinates, however, the floor is generally spared.[8] Destruction of nasal septum can cause saddle nose deformity. In advanced cases, paranasal sinues and orbit may be involved.

The differential diagnoses include other granulomatous diseases of the nose namely Wegner's granulomatosis, syphilis, leprosy, sarcoidosis, rhinoscleroma, rhinitis sicca.[10] The other differential diagnosis are fungal rhinosinusitis, carcinoma, NK-T cell lymphoma, midline malignant reticuloma.[2]

Diagnosis is based on clinical suspicion and laboratory tests. Histopathological evidence of Tuberculosis and isolation of the bacilli will aid diagnosis. Mantoux test or tuberculin skin test positivity will add further strength to the diagnosis is cases where clinical suspicion is high.[4] The Gene-Xpert which is a cartridge-based nucleic acid amplification test (CBNAAT) is widely accepted in the rapid diagnosis of TB and rifampicin resistance.[7]

Other tests include a chest X-ray to look for pulmonary focus and testing for human immunodeficiency virus (HIV) infection due to the high incidence of co-exixtence of TB and HIV.[11] Computed tomography scan of paranasal sinuses (CT PNS) will show extent of disease, concomitant sinus infection, evidence of bone or cartilaginous destruction.

Treatment includes multidrug therapy with antitubercular treatment (ATT) as per regimen. It is usually a short course treatment with 4 drugs for 2 months with long course treatment with at least 2 drugs. In our patient we followed the HRZE [H-Isoniazid, R-Rifampicin, Z-Pyrazinamide, E-Ethambutol] regimen for 2 months followed by HRE for 4 months to complete a course of 6 months of ATT.

Surgical intervention may be needed to treat local complications in selected cases.[12] Local therapy in the

form of nasal douching and regular nasal toilet is also important.[13] Regular follow up is mandatory to monitor response to treatment and identify recurrence.

Primary nasal tuberculosis is rare and diagnosis is challenging due to the non-specific symptoms. It is important to consider other differential diagnoses of granulomatous diseases of nose when histopathology is inconclusive.[14] Though cases of primary nasal tuberculosis have been reported in the past, the cause of tuberculosis in this case is inoculation due to nasal picking which makes it rare.

CONCLUSION

Though nasal tuberculosis is rare, it should still be considered as a diagnostic possibility in cases of granulomatous nasal conditions. Early diagnosis will prevent scarring and deformities. Regular follow up and proper multidrug treatment is important in the management.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Goguen L, Karmody C. Nasal tuberculosis. Otolaryngol Head Neck Surg. 1995;113:131-5.
2. Khan S, Pujani M, Jetley S. Primary Nasal Tuberculosis: Resurgence or Coincidence - A Report of Four Cases with Review of Literature. J Lab Physicians. 2017;9:26-30.
3. Mohindroo NK, Sharma DR, Chauhan I, Mohindroo S. Primary Nasal Tuberculosis. Int J Clin Rhinol. 2011;4:39-41.
4. Masterson L, Srouji I, Kent R, Bath AP. Nasal tuberculosis--an update of current clinical and laboratory investigation. J Laryngol Otol. 2011;125:210-3.
5. Lmekki S, Lecanu JB. Tuberculosis of the middle ear and nasal passage: A case report. Int J Mycobacteriol. 2013;2:51-3.
6. Al-Serhani AM. Mycobacterial infection of the head and neck: Presentation and diagnosis. Laryngoscope. 2001;111:2012-6.
7. Chavan RP, Ingole SM, Parokaran AA, Desai WV, Damodhar AP. ENT manifestation CCs in tuberculosis: a descriptive study. Egypt J Otolaryngol. 2022;38(1):140.
8. Dixit R, Dave L. Primary nasal tuberculosis. Lung India. 2008;25:102-3.
9. Swain SK, Behera IC, Sahu MC. Primary sinonasal tuberculosis: Our experiences in a tertiary care hospital of eastern India. Egypt J Ear Nose Throat All Sci. 2017;18:237-40.
10. Dey S, Misra S, Dutta M. Primary Sinonasal Tuberculosis: A Diagnostic Challenge. Turk Arch Otorhinolaryngol. 2018;56:117-21.
11. World Health Organisation. Global tuberculosis report 2020. 2020. Available at: https://www.who.int/publications/i/item/9789240013131. Accessed on 18 August 2024.
12. Kameswaran M, Anand Kumar RS, Murali S, Raghunandan S, Vijaya Krishnan P. Primary nasal Tuberculosis - A case report. Indian J Otolaryngol Head Neck Surg. 2007;59:87-9.
13. Bouatay R, Bouaziz N, Harrathi K, Koubaa J. Primary sinonasal tuberculosis: A diagnostic challenge. Otolaryngol Case Rep. 2024;31:100611.
14. George MV, Theresa L, Aswathi R. A rare case of primary nasal tuberculosis. Int J Otorhinolaryngol Head Neck Surg. 2020;6:793-5.

Cite this article as: Sachidananda R, Venkataramani N, Rao S, Ishwarappagol P, Gundappa V, Shankarnarayan S, et al. Primary nasal tuberculosis due to inoculation by nasal picking: a case report. Int J Otorhinolaryngol Head Neck Surg 2024;10:740-2.