SKIN

BRIEF ARTICLE

# Verrucous Lesion on the Nose in an HIV Seropositive Female: A Rare Case Report

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## ABSTRACT

Tuberculosis is a chronic granulomatous infectious disease caused by mycobacterium tuberculosis and mycobacterium bovis. Although commonly affecting lungs, almost all other organ systems may be involved. Cutaneous tuberculosis is one of the most challenging diseases to diagnose. It possesses a wide array of differential diagnosis and is difficult to confirm microbiologically, often leading to delayed diagnosis and treatment. Emergence of resistant strains and the HIV pandemic contribute to distribution of cutaneous tuberculosis worldwide. Clinical findings of cutaneous tuberculosis depend on source of infection and immune status of host. We report an HIV seropositive female presenting with a verrucous fungating growth over nose, which was diagnosed as tuberculosis cutis orificialis likely due to endogenous seeding from pulmonary disease. She was treated with extended anti-tubercular therapy (HRZE) fixed dose combination. The lesion responded remarkably to treatment and resolved completely within 18 months.

## INTRODUCTION

The nose is the central part of the mid-face with an important functional, aesthetic, and psychological role. Because of this exposed and highly visible location, lesions over the nose seldom go unnoticed. From a dermatological perspective, verrucous lesions over nose have multiple differentials, like human papilloma virus infection (verruca vulgaris), deep fungal infections (sporotrichosis, blastomycosis etc), pyoderma vegetans, tuberculosis and tumours.[1] These lesions often mimic each other clinically, leading to delay in diagnosis and treatment.

## CASE REPORT

A 35-year-old woman presented to our hospital with complaints of a painless, gradually progressing cauliflower-like lesion over the nose for 6 months. She was a person living with Human immunodeficiency virus infection (CD4 count of 55/ul) on Antiretroviral therapy (TLD) regimen (Tenofovir300mg+Lamivudine300mg+Dolute gravir 50 mg) for 7 months. The lesion had not responded to empirical antibiotics. She denied history of chronic cough, fever, significant weight loss, antecedent trauma and past or family history of tuberculosis. On general examination, she had pallor without regional or generalised lymphadenopathy. Dermatological examination showed a brownish indurated plaque with thick crust

over the nasal bridge extending from the glabella and a non-tender verrucous lesion (4 x 5 cm size) with irregular borders over the tip (**Figure 1A**). On removal of the friable greyish black crust, greenish yellow pus oozed out on manipulation. Multiple fleshy finger-like projections were seen which bled on touch (**Figure 1B and C**). Bilateral nasal alae were spared. History and clinical findings suggested a differential diagnosis of cutaneous tuberculosis, atypical mycobacterial infection, and deep fungal infection (blastomycosis, chromoblastomycosis, chromomycosis).

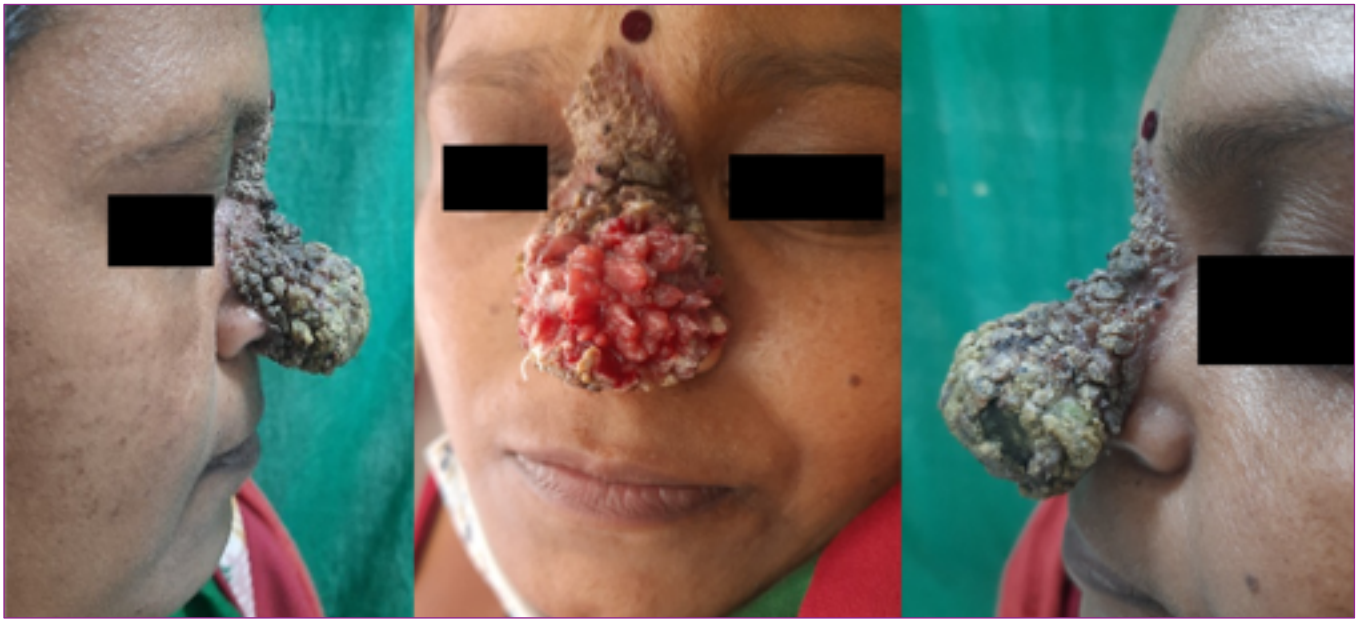

**Figure 1.** (A,B,C) Brownish indurated plaque with thick crust over the nasal bridge extending from the glabella and a non-tender verrucous lesion (4 x 5 cm size) with irregular borders over the tip. Fleshy finger like projections noticed on removal of crusts.

Haematological investigations revealed anaemia (Hb=8.8) and erythrocyte sedimentation rate >30mm at the end of 1hour. Tuberculin skin sensitivity test showed an induration of 10mm. Sputum was negative for acid fast bacilli (AFB) and Nucleic acid amplification tests (NAAT). Gene-Xpert from skin specimen was non-contributory. Local ultrasound, X-ray nose and paranasal sinuses were unremarkable. On anterior rhinoscopy, nasal cartilage and mucosa were apparently normal. Chest X-ray revealed blunting of right costophrenic angle and hilar lymphadenopathy. Ultrasound abdomen was within normal limits. Histopathology revealed epidermal hyperkeratosis and parakeratosis and multiple ill-defined caseating epithelioid cell granulomas with Langerhans giant cells and dense mononuclear inflammatory infiltrate in dermis (**Figure 2**). Ziehl Neelsen stain was negative for acid fast bacilli. Periodic acid-Schiff and Silver methenamine stains did not demonstrate fungal elements. Clinicopathological correlation led to final diagnosis of tuberculosis cutis orificialis in a patient with pulmonary tuberculosis. She was started on antitubercular therapy (ATT)-fixed dose combination of Rifampicin 150mg, Isoniazid 75mg, Pyrazinamide 400mg and Ethambutol 275mg (5 tablets daily). ATT was administered for 12 months with complete resolution of hilar lymphadenopathy and pleural effusion. However, repeat histopathological examination from the partially regressed skin lesion revealed similar findings as earlier. Hence

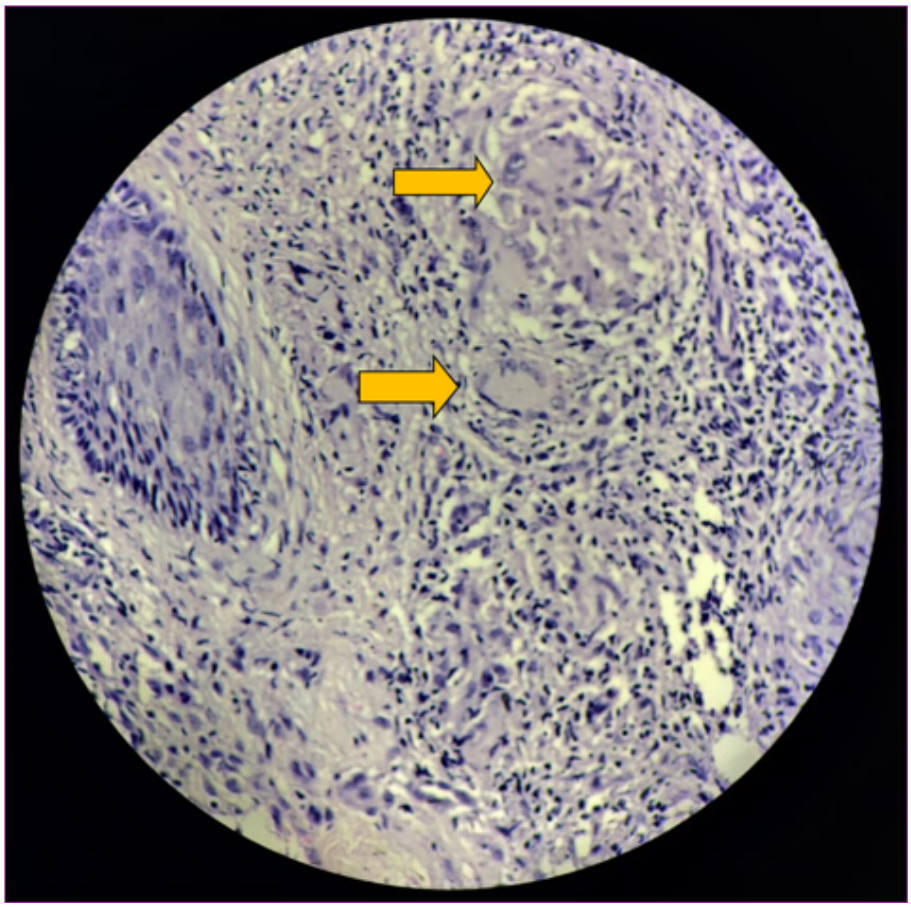

**Figure 2.** (H& E ,40X) Dense collection of lymphocytes with epithelioid cell granulomas with caseous necrosis at centre and Langhans type giant cells seen in the field (yellow arrow).

Antitubercular therapy was extended for an additional period of 6 months following which, the skin lesion resolved completely with atrophic scarring (**Figure 3**).

## DISCUSSION

Extrapulmonary tuberculosis constitutes 10-15% of total tuberculosis cases out of which 1.5 to 2% cases are contributed by cutaneous tuberculosis.[2] Cutaneous TB (CTB) is a chronic granulomatous infection caused by Mycobacterium tuberculosis, Mycobacterium bovis and attenuated form of Bacille Calmette Guérin (BCG vaccine, attenuated strain of M. bovis). It is classified as multibacillary and paucibacillary and exogenous and endogenous.[3] Endogenous forms are by contiguous (tuberculosis cutis orificialis, lupus vulgaris, scrofuloderma) or hematogenous spread (miliary, metastatic tuberculous abscesses/gumma and lupus vulgaris). Exogenous CTB is categorised as tuberculosis verrucosa cutis and tuberculous chancre.

Overall incidence of cutaneous tuberculosis in India is 0.7% with paucity of data regarding tuberculosis cutis orificialis.[4] Tuberculosis cutis orificialis (TCO, acute tuberculous ulcer, ulcerative cutaneous and mucosal tuberculosis) results from self-inoculation of MTB in the mucosa and peri-orifical skin in the presence of tuberculous involvement of internal organs like lungs, urogenital and gastrointestinal organs. This extremely rare form is more frequently reported in the elderly

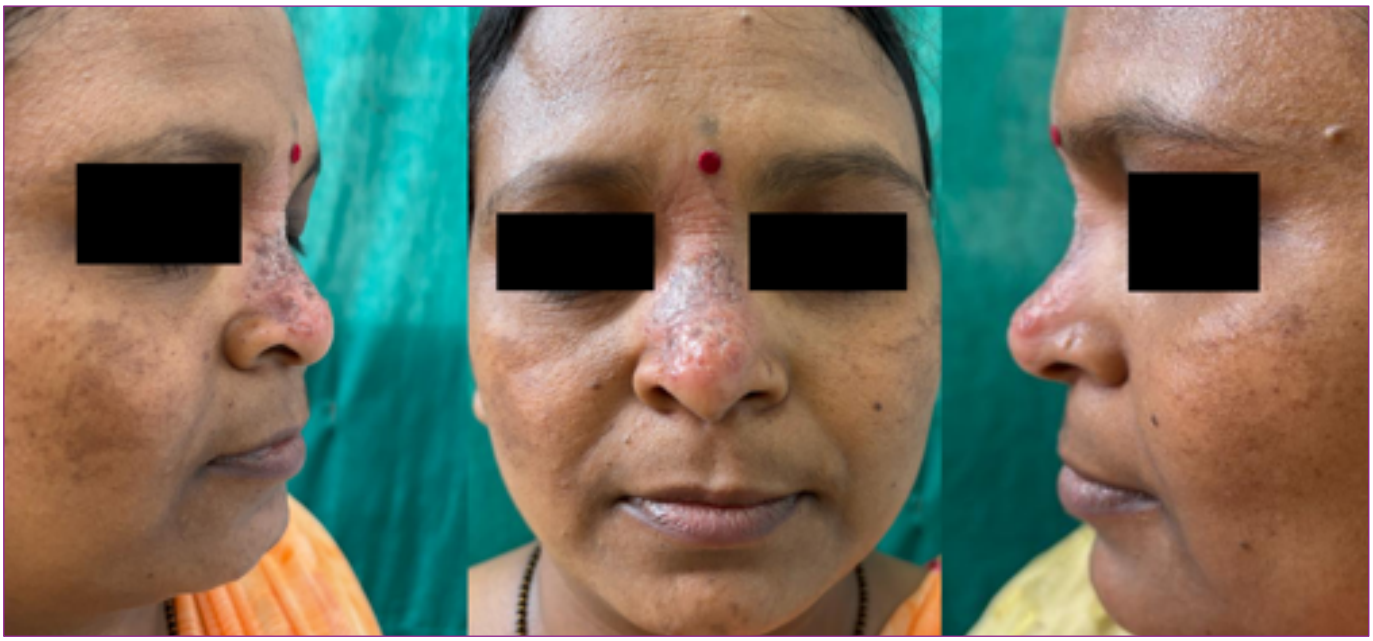

**Figure 3.** (A,B,C) Complete regression of verrucous lesion over nose after extended course of (18 months) Anti tubercular therapy (ATT).

and those with immunological deficiency. Clinically, it usually manifests as oral or anal ulcers, while hypertrophic verrucous plaques (as in our case), may be occasionally seen. Differential diagnosis for this form of cutaneous TB include malignancy, fungal (chromoblastomycosis, paracoccidiomycosis), viral and bacterial infections.

Orificial tuberculosis has predilection for perianal, perioral and vulval area with rare involvement of perinasal area. We found many case reports mentioning primary nasal tuberculosis but orificial tuberculosis secondary to pulmonary disease is very very rare. Jindal SK et al, Seyed Mohammad Alavi et al and Saha et al reported cases of nasal tuberculosis without evidence of pulmonary disease.[5,6,7] We found very few documented cases of orificial tuberculosis involving perinasal area. Naser Gharabaghi et al reported a rare case of periorificial tuberculosis in 21-year-old immunocompetent male patient.[8]

Some atypical presentations are nodular, crusted, exuberant granulomatous forms which confound the diagnosis [8].

Orificial tuberculosis often remains underdiagnosed as it may masquerade as other dermatological conditions leading to delay in treatment. The present case demonstrated typical histopathological features comprising hyperkeratosis, parakeratosis and tuberculoid granulomas with caseous necrosis and Langerhans giant cells. Our case presented as a fungating growth over the tip of nose, an extremely rare site for orificial tuberculosis leading to immense difficulty in differentiating it from Tuberculosis verrucosa cutis. The interpretation of tuberculin skin test is debatable in endemic countries like India especially in immunocompromised patients. Although the predominant point in favour of TVC was the conspicuous absence of demonstrable Acid-Fast Bacilli, we arrived at the final diagnosis of orificial tuberculosis due to the high probability of endogenous seeding from pulmonary disease in an

immunocompromised patient with a low CD4 count. The dramatic response to a therapeutic trial of antitubercular therapy further confirmed the diagnosis.

## CONCLUSION

Orificial tuberculosis is considered as a diagnostic challenge in HIV seropositive individuals due to atypical presentations and diagnostic difficulties. In TB endemic countries like India, a high index of suspicion is always required while dealing with verrucous growths over head, neck, face area despite its rarity in this region. This case will help dermatologists to promptly identify similar cases. Appropriate clinical and histopathological correlation might help in solving the puzzle and directing us towards the correct diagnosis.

**Conflict of Interest Disclosures:** None

**Funding:** None

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