



Unique Journal of Medical and Dental Sciences

Available online: www.ujconline.net

Case Report

A RARE ASSOCIATION OF PULMONARY TUBERCULOSIS WITH TUBERCULOSIS VERRUCOSA CUTIS

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Received: 01-06-2014; Revised: 30-06-2014; Accepted: 10-07-2014

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ABSTRACT

Tuberculosis verrucosa cutis is a paucibacillary disorder caused by exogenous reinfection or endogenous reactivation in previously sensitized individuals. Diagnosis is solely based on clinical appearance and histopathological view. Warty tuberculosis responds well to antituberculous therapy.

Keywords: Tuberculosis verrucosa cutis (TVC), Antituberculous treatment (ATT), Revised national tuberculosis control program (RNTCP).

INTRODUCTION

Cutaneous tuberculosis is one of the less common extrapulmonary tuberculosis, while tuberculosis verrucosa cutis (TBVC) is one of the rare forms of tuberculosis encountered. TBVC occurs in previously sensitized individuals to mycobacterium tuberculosis.

CASE DETAILS

A 25 years old agricultural labor presented with painless warty lesion over the medial aspect of the left foot for the last one year. He had low grade, continuous fever with evening rise of temperature for 2 months and had productive cough from 3 weeks. He gave a history of trauma at that site. He was a regular smoker and occasional alcoholic. No other significant co-morbidities or contact with tuberculosis was present. He denied any previous anti-tubercular therapy.

He was well-built and nourished, without any other abnormal systemic findings. General physical examination was normal except for few auscultatory crackles over right supraclavicular area. A prominent BCG scar mark over left arm seen. Local cutaneous examination revealed a well-defined, irregular, hyperkeratotic, verrucous lesion measuring 6 cm × 10 cm over the dorsum and medial side of the left foot. There was no regional or generalized lymphadenopathy (Figure 1).

Routine investigations showed hemoglobin to be 10 g/dL; Mild leucocytosis, ESR was 45 mm in the first hour. HIV,

VDRL, HbSAg were negative. Chest X-ray showed right upper zone infiltrates (Figure 2).



Figure 1: Hyperkeratotic, verrucous lesion over medial aspect of left foot

Sputum smear for acid fast bacilli was negative. Montoux reaction reading after 48 hr was 20 mm. Cultures from the wound discharge (bacterial, fungal and tubercular) were negative. A skin biopsy from the plantar lesion revealed epithelioid granulomas, Langhan giant cells and lymphocytes in the dermis with marked epidermal hyperkeratosis and

pseudoepitheliomatous hyperplasia (Figure 3). There is no underlying bony involvement.

Based on these findings, a diagnosis of right upper lobe infiltrative pulmonary Koch's disease with tuberculosis verrucosa cutis was made. The patient was started on category

NT (New Treatment) under revised national tuberculosis control program after local wound debridement. At the end of treatment, the foot lesion was completely cured and radiological resolutions of infiltrates were observed.



Figure 2: Chest X-ray showing right upper zone infiltrates

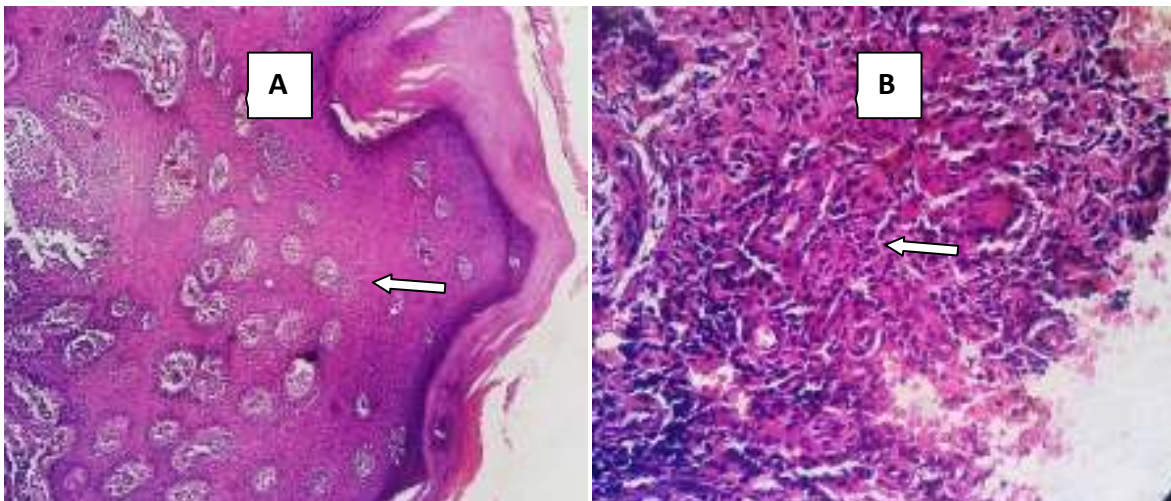


Figure 3A-B: A) Epidermal hyperkeratosis, acanthosis and Pseudoepitheliomatous hyperplasia (H&E, 100x); B) Granuloma with foci of caseous necrosis and Langhans type of giant cell (H&E, 400x).

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DISCUSSION

Tuberculosis verrucosa cutis (TVC) is an indolent, warty plaque-like form of paucibacillary cutaneous tuberculosis, resulting from inoculation of *Mycobacterium tuberculosis* into the skin of a previously infected patient¹. It is also known as lupus verrucosus, verruca necrogenica, warty tuberculosis, prosector's wart and anatomist's wart.

Cutaneous tuberculosis accounts for only 1.5% of all cases of extrapulmonary tuberculosis. The most common variant of cutaneous tuberculosis was lupus vulgaris (55%), followed by scrofuloderma (25%), orificial tuberculosis (5%), and verrucosa cutis (5%)².

Tuberculosis verrucosa cutis can result both from inoculation and from endogenous spread³. Lesions usually occur on areas exposed to trauma. Adult men are reportedly the most commonly affected, probably because they are more often involved in manual work and are liable to trauma. The most frequently reported locations of TVC are hands in Western countries⁴, foot and sole in India⁵.

Warty tuberculosis is usually solitary but multiple lesions may occur. The lesion typically starts with a painless, dusky red, firm, indurated nodule or papule that expands peripherally and is surrounded by inflammation. Spontaneous central resolution

with areas of atrophy surrounded by a verrucous keratotic surface or an annular plaque with a warty advancing border is seen. Occasionally pus and keratinous material may be expressed from fissures in the warty areas. Lymphadenopathy is usually absent and if seen, indicates secondary infection⁶. The histopathological features are characterized by marked pseudoepitheliomatous hyperplasia of the epidermis with hyperkeratosis and dense inflammatory cell infiltrate consisting of neutrophils, lymphocytes and giant cells. The presence of granulomatous infiltrates is a cardinal sign. Typical tuberculous foci with caseating necrosis are uncommon⁷. The laboratory diagnosis of paucibacillary forms of cutaneous tuberculosis, like TBVC, is arduous. Mantoux reaction is markedly positive.

Diagnosis is usually confirmed by typical clinical appearance, histo-pathological pattern, and a positive response to antitubercular treatment. The dramatic response to antitubercular therapy may be useful as a diagnostic criterion⁸. The differential diagnoses include common warts, hyperkeratotic lupus vulgaris, blastomycosis, chromomycosis, fixed sporotrichosis, lesions caused by non-tubercular mycobacteria, and tertiary syphilis. Inflammatory dermatoses including psoriasis, lichen simplex chronicus and hypertrophic lichen planus may mimic this clinical picture⁹.

Kumar *et al.* in their study observed that cutaneous TB was associated with tuberculosis in other organs in 22% of patients³. Organs commonly affected were lungs followed by bone, abdomen and CNS. The association of tuberculosis verrucosa cutis with pulmonary tuberculosis was rare in their study.

Sehgal *et al.* reported a case of disseminated tuberculosis with tuberculosis verrucosa cutis and pulmonary involvement⁶. Padmavathy *et al.* also reported miliary tuberculosis in a patient with tuberculosis verrucosa cutis and explained it as part of the varied immunological response to infection¹⁰. Others reported various atypical presentations of verrucosa cutis^{11,12}.

Cases of warty tuberculosis had been treated in the past with isoniazid alone, but led to the emergence of drug resistance. There are also few reports of verrucosa cutis treated successfully with streptomycin and promizole¹². In the present day scenario they are treated according to the RNTCP guidelines¹³. We started New Treatment category (cat-1) regimen comprising 2 months intensive phase of HRZE (H-isoniazid; R-rifampicin; Z-pyrazinamide; E-ethambutol) and 4 months continuation phase of HR in a weekly thrice regimen. After six months course, the foot lesion was completely cured and chest X-ray was clear.

CONCLUSION

This interesting case scenario revealed here because of its rarity in occurrence and unique association of pulmonary tuberculosis with warty tuberculosis in the same patient which can be explained as a part of varied immunological response to mycobacterial infection.

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Source of support: Nil, Conflict of interest: None Declared