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Tuberculosis Verrucosa Cutis of the Neck in an Elderly Patient: Complete Resolution With Standard Antitubercular Therapy

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Abstract

Cutaneous tuberculosis (CTB) is a rare form of extrapulmonary tuberculosis, and tuberculosis verrucosa cutis (TBVC) is one of its uncommon variants, caused by exogenous inoculation of *Mycobacterium tuberculosis* into the skin of a sensitized person. We report the case of a 71-year-old man with a one-month history of spreading, hyperpigmented, rough, raised lesions on the right side of the neck. Examination showed coalescing hyperkeratotic papulonodular lesions with a verrucous surface, raised edges, an erythematous base, and scarring. Blood counts, glucose, liver function, and chest radiograph were normal; the Mantoux test was negative, and Ziehl-Neelsen staining of pus and skin scrapings showed no acid-fast bacilli (AFB). Skin biopsy showed granulomatous inflammation consistent with TBVC. He received six months of standard first-line antitubercular therapy (ATT; two-month intensive phase, four-month continuation phase), with complete resolution and no adverse effects. This case shows that TBVC can present with negative screening and bacteriological tests, and that histopathology with a favorable treatment response can establish the diagnosis. Clinicians should consider TBVC in chronic verrucous lesions, even without systemic symptoms.

Categories: Pathology, Infectious Disease, Dermatology
Keywords: antitubercular therapy, cutaneous tuberculosis, granuloma, tuberculosis verrucosa cutis, verrucous lesions

Introduction

Tuberculosis remains a major public health challenge, particularly in developing countries. Cutaneous tuberculosis (CTB) is uncommon and accounts for about 1.5% of extrapulmonary tuberculosis cases [1]. Its incidence varies geographically and appears to be rising, owing to the HIV epidemic, migration from high-prevalence regions, drug-resistant strains, and greater awareness and better diagnostics. Tuberculosis verrucosa cutis (TBVC) arises from exogenous inoculation of the bacillus through skin wounds or abrasions in a previously sensitized person, and only rarely from the patient's own sputum [1].

With the presentation of this case in an elderly person and the neck as an unusual site, diagnosis can be difficult. Acid-fast staining is often negative, particularly in patients with high immunity. Mycobacterial culture is the gold standard but is slow, so polymerase chain reaction (PCR) is frequently used as a faster and more sensitive alternative. The diagnostic role of histopathology comes into play in such conditions, where acid-fast bacilli (AFB) staining, culture, and other investigations are negative for tuberculosis. When clinical suspicion is strong, a therapeutic trial of antitubercular therapy (ATT) is justified, and the diagnosis may be confirmed by the response [2,3]. We describe the case of a 71-year-old man with histopathologically diagnosed TBVC who showed marked improvement after six months of first-line ATT.

Case Presentation

A 71-year-old man presented to the dermatology outpatient clinic with multiple hyperpigmented, rough, raised lesions on the right side of the neck for one month. The lesions began as small soft bumps that gradually enlarged and spread. They were neither painful nor itchy. He denied chronic cough, hemoptysis, night sweats, or weight loss, and had no previous tuberculosis treatment. He had no history of food or drug allergy and no family history of similar lesions. There was no history of trauma, local inoculation, or shaving by a barber. His immunization history was unknown. He was on antihypertensive medications for hypertension and left ventricular hypertrophy.

Dermatological examination showed multiple coalescing hyperkeratotic papulonodular lesions on the right lateral neck, with a verrucous surface, raised borders, an erythematous base, and scarring (Figure *1a*). Complete blood count, blood glucose, and liver function tests were normal. Ziehl-Neelsen staining of pus and skin scrapings showed no AFB. Chest radiograph was normal, and the Mantoux test was negative. HIV status was negative.



FIGURE 1: Image of the lesions before (a) and after (b) treatment.

After written informed consent, a skin biopsy was performed. Histopathology showed a squamous epithelial lining with an intact basement membrane. The dermis was infiltrated by granulomas composed of loose aggregates of epithelioid histiocytes mixed with mature lymphocytes, plasma cells, and multinucleated giant cells, along with mild perivascular and periadnexal inflammation (Figure *2*). These findings supported TBVC.

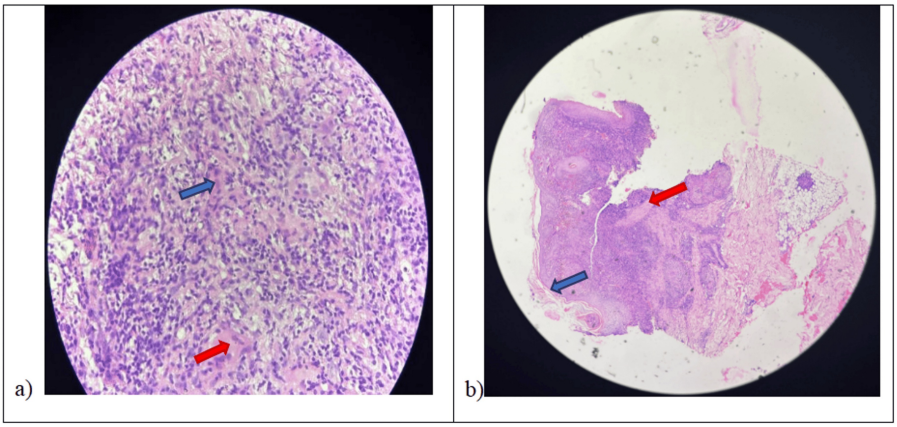


FIGURE 2: Histopathological examination of the sample from the skin lesion.

(a) Low magnification (100×): granulomas comprised of epithelioid histiocytes (blue arrow) with lymphocytes and multinucleated giant cells (red arrow). (b) Scanner view (40x): red arrow shows granulomas; blue arrow shows squamous epithelial lining with intact basement membrane.

Stain used: hematoxylin and eosin

The patient was treated with a standard six-month, first-line ATT regimen: an intensive phase of rifampicin, isoniazid, pyrazinamide, and ethambutol for two months, followed by a continuation phase of rifampicin, isoniazid, and ethambutol for four months. The lesions resolved completely by the end of treatment (Figure *1b*), with no adverse drug reactions. No relapse of the lesion was seen in the next six months of follow-up.

Discussion

TBVC typically follows exogenous inoculation of *Mycobacterium tuberculosis* into the skin. It presents as purplish to brownish-red warty papules or plaques that become hyperkeratotic and are surrounded by an erythematous base. Lesions are usually painless without systemic symptoms and favor the knees, elbows, hands, feet, and buttocks. They are more often seen on the legs in children and on the upper limbs in adults

[4-6]. The course is slow: deep-seated papules or nodules enlarge and become verrucous, then extend peripherally with central clearing and atrophic scarring.

The differential diagnosis includes verrucous squamous cell carcinoma, irritated giant seborrheic keratosis, chromoblastomycosis, and other verrucous conditions such as warts and deep fungal infections. In our patient, the clinical picture and granulomatous histology pointed to TBVC. Because the Mantoux test and chest radiograph were unrevealing and AFB staining was negative, ATT was begun on clinical and histopathological grounds in the absence of PCR-based confirmation, and the complete response supports the diagnosis.

Treatment of CTB is the same as for tuberculosis at other sites. A standard first-line regimen consists of a two-month intensive phase (rifampicin, isoniazid, pyrazinamide, ethambutol) followed by a four-month continuation phase (rifampicin, isoniazid, ethambutol) [7,8]. Second-line agents, including fluoroquinolones (levofloxacin, moxifloxacin), injectable agents (amikacin, kanamycin, capreomycin), cycloserine, and clofazimine, are reserved for drug-resistant or multidrug-resistant disease, including in HIV-infected patients [7,8].

Limitations

Culture, PCR, and tissue AFB staining were not performed, so the diagnosis rests on histology and treatment response.

Conclusions

TBVC should be considered in any chronic, slowly spreading verrucous lesion, even when the patient has no systemic symptoms and the Mantoux test, chest radiograph, and smear are negative. Skin biopsy is key to diagnosis, and a full response to standard six-month ATT supports it. Early recognition avoids diagnostic delay and unnecessary treatments.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Acquisition, analysis, or interpretation of data: Kiran Kumre, Sapna Saha

Disclosures

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