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## Tuberculosis Verrucosa cutis: A case report

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### Abstract

TB verrucosa cutis is an inactive, verruca like plaque. Clinically it has classical description. Initially starts as a tiny symptom free warty papule that eventually headway to become a verrucous plaque with a rambling irregular border. Among the form of cutaneous tuberculosis. We report a case of Tuberculosis Verrucosa Cutis in a 54 year old male with a verrucous plaque with hyperpigmentation over the right great toe confirmed with clinical and histopathological features.

**Keywords:** Tuberculosis verrucosa cutis, warty plaque, cutaneous tuberculosis, anti-tubercular therapy.

### Introduction

Cutaneous tuberculosis forms a trivial part of extra pulmonary TB. Tuberculosis verrucosa Cutis is a form of cutaneous TB which is consequence out of Mycobacterium tuberculosis inoculation into skin that is reinfection (paucibacillary) seen in previously sensitized people with modest to inflated degree of immunity. Commonly affected sites include knees, ankles, Buttocks. The other names include prosector's wart of Laennec, verruca neurogenic, lupus verrucous, anatomic tubercle, butcher's wart <sup>[1]</sup>. Most of the cases are mistaken as warts. The conditions that need to be differentiated include chromoblastomycosis, Lupus Vulgaris, fixed sporotrichosis, hypertrophic lichen planus.

### Case report

A 54-year-old male presented to our dermatology OPD with verrucous mildly pigmented plaque over the upper aspect of right great toe for past 4 months [Fig1]. It began with a blister formation over the right great toe which voluntarily ruptured after few days which eventually developed into raised symptom free ulcerated lesion. K/C/O DM and HTN for the past 7 years. There were no skin lesions elsewhere. He is a construction worker and has a history of prolonged contact with cement and works barefoot. No history of trauma prior to the development of symptoms. No history of fever. No history of loss of appetite and weight loss. No history of exposure to any tuberculosis case. Patient claimed to be non-smoker and non-alcoholic. Previous history of hospitalization for left diabetic foot 6 years back. No significant family history. On examination A swelling of 6x3cm extending from the base of right great toe to tip of the toe involving entire right great toe of lower limb. Healed trophic ulcer present on the plantar aspect of right foot <sup>[2]</sup>. Skin over the swelling appears verrucous. Diffuse edema seen over the right leg associated with dry skin.

Routine blood investigations are within normal limits. chest x ray <sup>[4]</sup>, x ray of right foot <sup>[3]</sup> was taken and noticed great toe injury with comminuted fracture, serology were normal. Advised for USG abdomen which is also normal. A 10% KOH mount was done from the lesion to rule out mycelia and spores, with this fungal infections were ruled out. Sputum smear showed negative for AFB. ELISA for antibodies to HIV and Hepatitis B surface antigen found to be negative. Mantoux reading was taken after 48 hrs. Was positive. To confirm the diagnosis a punch biopsy of 3.5 mm was taken from the medial aspect of the verrucous lesion of great toe. it was sent for histopathological examination.

The Specimen sent for histopathological examination showed hyperkeratosis, acanthosis, papillomatosis, granuloma composed of lymphocytes, neutrophils, giant cells with central caseous necrosis.

After ruling out the possible differentials, a final diagnosis of Tuberculosis Verrucosa Cutis was made on the basis of

typical clinical and histological features and the patient is being treated for the same with regular follow up.



**Fig 1:** Verrucous pigmented plaque with mild scaling present over the right great toe



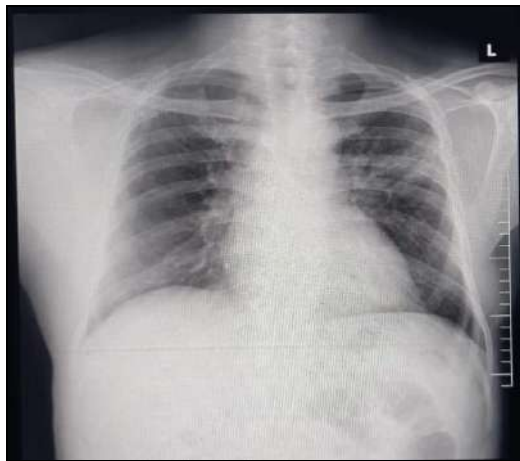
**Fig 2:** Healed trophic ulcer over the plantar aspect



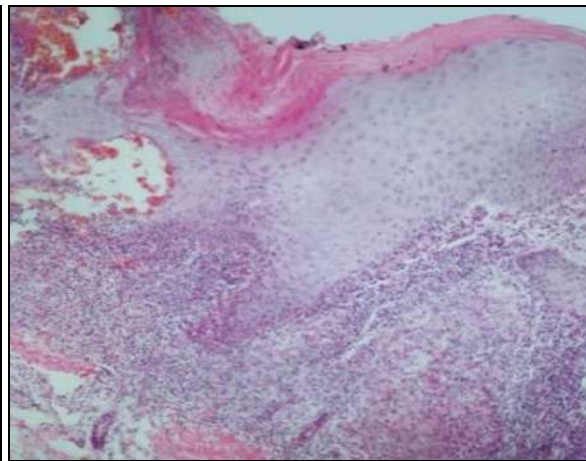
**Fig 3:** X ray of foot AP view showing comminuted fracture



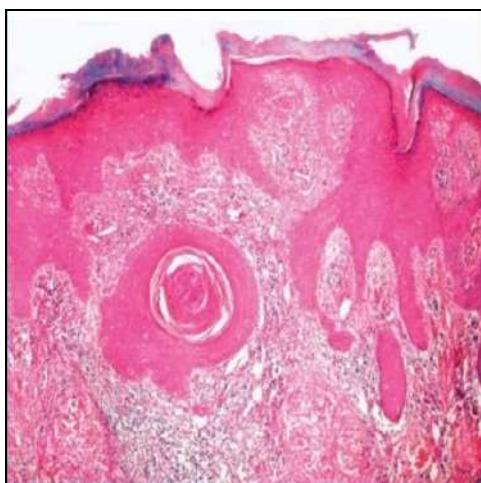
**Fig 4:** X ray of foot Lateral view showing comminuted fracture



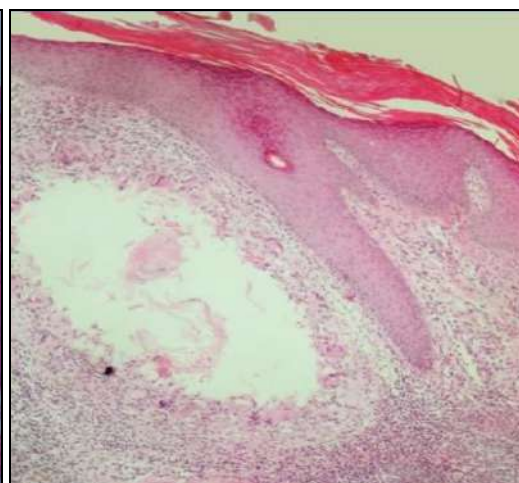
**Fig 5:** Chest X-Ray Showing normal foci



**Fig 6:** Dermal granulomatous inflammation consisting of lymphocytes and epithelioid cells, epidermal hyperplasia, and orthokeratosis



**Fig 7:** Epidermal hyperplasia, orthokeratosis, and granulomatous infiltration mainly of the upper dermis (H&E)



**Fig 8:** Dermal granulomatous inflammation, epidermal hyperplasia and orthokeratosis (H&E)

## Discussion

Tuberculosis verrucosa cutis was first described by Rene Laennec in 1826. The arrival point is the area of trauma or

wound in the skin. The most persistent site for the verrucous lesions are hands but can also be seen anywhere in the skin like the plantar aspects of feet, buttocks, knees, elbows.

People walking barefoot are more at risk for the entry of organism through the injury. There are usually few organisms seen over the lesion. Prosector's wart/Anatomist's warts is the other name for this is because it is noticed in anatomists dissecting cadavers from patients who had died from tuberculosis [2].

Earlier in 1960's this was more commonly seen in Chinese in Hong Kong where children exposed to sputum of the infected persons from sitting on ground with open nappies. The cases later dropped in number due to cultural changes [3].

The spread of the infection may be through an exogenous source like in TB verrucosa cutis or tuberculous chancre, it can be endogenous as in scrofuloderma, tuberculosis orificialis or hematogenous like in case of lupus vulgaris, acute military tuberculous gumma [4].

Single, small, symptom free indurated nodule with a warty/verrucous surface which gradually turns into serpiginous path giving rise to an asymmetrical reddish brown verrucous plaque. Involution of the centre of the lesion takes place due to delayed growth and asymmetrical peripheral extension which leaves an atrophic scar. Mild discharge can be noticed and regional lymphadenopathy is rare. Seen only when this is in association with secondary bacterial infection.

Histopathological examination reveals pseudoepitheliomatous hyperplasia with minimal surface abscess formation. The acute assorted infiltrate may show only scanty tuberculosis foci. Rarely bacilli can be seen.

Recent advances along with routine investigations include the serological testing that is Interferon gamma release assay for mycobacterium tuberculosis derived purified protein derivative implemented for catch hold of patients with active or latent TB. Analysis of mycobacterial DNA by PCR is also done.

To differentiate this with other conditions may be difficult as AFB present in the tissue might be minimal. In case of any doubt a good and immediate response (within 5 weeks) is seen with treating the patient with ATT. The lesions improve by 5-6 months. Recent RNTCP guidelines showed daily fixed dose combination is approved as per weight bands. Surgical excision, electrocautery can be performed to resect hypertrophic and verrucous lesions.

Scrofuloderma is ruled out as the common sites of this include chest, neck and axilla. But scrofuloderma in association with TB verrucosa cutis have been reported. Chromoblastomycosis is ruled out by absence of medlar bodies or sclerotic or muriform bodies in the biopsy. Lupus vulgaris is ruled out by absence of apple jelly nodules at the edge and it is not hyperkeratotic. Hypertrophic lichen planus is ruled out by absence of multiple lesions and complaints of itching. Tertiary syphilis can be a differential diagnosis when central scarring is surrounded by serpiginous border but genital and oral mucosal examination is normal. The coexistence of Tb verrucosa cutis and military tuberculosis has also been reported but which is not so common. Because of unusual morphology of tuberculosis verrucosa cutis it sometimes mistaken as diffuse plantar keratoderma which has also been reported [5, 6].

### In conclusion

Our patient presented with above mentioned case report, nevertheless mycobacterial infection should be in our minds when we notice a chronic, painless, non-healing ulcer.

Diagnosis mainly depends on the degree of clinical speculation. The aim of this report is to focus attention on cutaneous TB which may remain undiagnosed and untreated for longer periods and diagnosed immediately can be helpful for patients and can be given anti tubercular therapy which can bring down the burden of cutaneous tuberculosis.

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