

Coexistence of Cutaneous Tuberculosis (Scrofuloderma) and Hanseniasis-A Rare Presentation

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ABSTRACT

Cutaneous tuberculosis, pulmonary tuberculosis and hanseniasis are all caused by different spp. of *Mycobacterium*, an intracellular pathogen whose development depends on impaired cell mediated immunity. Scrofuloderma is the most common variant of cutaneous tuberculosis, which is characterized by a direct extension of the skin which overlies the infected lymph gland, bone or joint, that breaks down to form an undermined ulcer. We are reporting a rare association of Scrofuloderma (cutaneous tuberculosis) with Hanseniasis (leprosy) in an adult male whose immune status was controversial.

Keywords: Co-infection, *M. tuberculosis*, leprosy

CASE REPORT

A 65-year-old man, a farmer by occupation, got admitted to the surgery OPD of S.C.B. Medical College, Cuttack, India with the complaint of a painless discharging ulcer over right inguinal region. The lesion had started as a pea sized papule [Table/Fig-1], that had progressed to a nodule and a pustule, leading to draining sinus within a span of 6 months. He had a history of treatment with several antibiotics, anti-inflammatory and analgesics, but no response was identified. He was a known case of Hansen's disease and was on multi-drug therapy since 10 months. Subsequently, he had an episode of Erythema nodosum leprosum and was on corticosteroids. There was no history of cough or haemoptysis, but he had irregular low grade fever and history of progressive weight loss. The family history suggested that one of his house members was treated for pulmonary tuberculosis. He had no history of BCG vaccination.

An ulcer of size, 2cm×1cm, with a discharging sinus, was noted on the right inguinal region, which fluctuated, was nontender and without redness or local warmth on the overlying skin. Multiple similar ulcers were noticed over the upper anterior aspect of left thigh. There was right inguinal lymphadenopathy. A hypopigmented patch of size, 4cm×2cm was found over the back, which suggested the previously diagnosed Hansen's patch, as per the patient's treatment history.



[Table/Fig-1]: Shows ulcer over thigh and inguinal region

Pus was drained out and it was sent for gram staining, Ziehl Neelsen staining, routine and mycobacterial cultures. Cutaneous biopsy was sent for histopathological studies and blood was sent for routine tests as well as HIV and VDRL test. Three consecutive sputum Ziehl Neelsen stainings and X-rays of chest were done for excluding pulmonary TB. X-ray of the right thigh was done to detect any bony involvement. A tuberculin test was also administered.

Gram staining of pus revealed only good number of pus cells. Ziehl Neelsen staining of pus and sputum were negative for acid fast bacilli. There was no growth on routine culture. However, growth appeared on LJ slant during 5th week of incubation. The colonies were identified to be those of *Mycobacterium tuberculosis* by Ziehl Neelsen staining, niacin and catalase tests. Haematological tests were within normal limits, except raised ESR-102mm/1st hour, CRP-3.75mg/dl, WBC-4520/mm and Hb-8.28mg/dl. HIV and VDRL tests were negative. Tuberculin test was positive. X-rays of chest and thigh were normal. Histopathology report showed large areas of necrosis, surrounded by epithelioid histiocytes, Langhan's type of multinucleated giant cells and lymphocytes. On the basis of clinical and laboratory findings and positive family history, a diagnosis of extrapulmonary tuberculosis of cutaneous involvement (Scrofuloderma) was made.

Treatment was started with INH, Rifampicin and Ethambutol each 15mg/kg/day and Pyrazinamide 20mg/kg/day. After 2 months, there was improvement in weight by 3kg, with no more discharge and healing, only with some residual scarring. Ethambutol and Pyrazinamide were stopped and the patient was advised to continue taking the rest for 9 months, with intermittent follow-ups.

DISCUSSION

Scrofuloderma, also called tuberculosis colliquative cutis, is a common form of cutaneous tuberculosis which affects children and young adults in Indian scenario [1]. Cutaneous tuberculosis forms a small proportion of extrapulmonary tuberculosis, the incidence of which has fallen from 2% to 0.15% in India, whereas it is rare in developed countries [2]. But nowadays, the incidence has increased due to human immunodeficiency virus epidemic and pharmacologic immunosuppression. Common antitubercular drugs are recommended for treatment, but the underlying cause of immunosuppression, if any, needs to be taken into consideration. The lesion arises due to inoculation of bacteria by exogenous sources and by haematogenous spreads. In the present case, though

the exact mode of infection could not be ascertained, pulmonary tuberculosis was excluded. This condition clinically mimics many other conditions such as (i) atypical Mycobacterial infection, a benign, self-limiting lymphadenopathy without organ involvement, (ii) Actinomycosis (iii) sporotrichosis (iv) chromoblastomycosis etc. where typical microscopic findings and culture isolation confirms the diagnosis [3]. Botryomycosis usually involves extremities, but it is painful and can be confirmed by culturing the samples. In present case, though demonstration of acid fast bacilli was not possible from discharge, culture isolation and histopathology could confirm the diagnosis and so, above conditions were excluded.

In study done by Gopinathan R et al., also, the demonstration of acid fast bacilli was very low, but isolation of Mycobacteria was 56.86%, the major isolate being *Mycobacterium tuberculosis*, along with two *Mycobacterium scrofulaceum* isolates and one isolate was *Mycobacterium avium* complex [2]. Various authors had reported Scrofuloderma to be the commonest form which was seen among all cutaneous tuberculosis cases [4,5]. Kumar B et al., had reported that *Lupus vulgaris* was its commonest clinical form, followed by scrofuloderma, tuberculous cutis verrucosa and tuberculous gumma [6]. Association of scrofuloderma with other organ lesions such as bone or lungs, had also been reported [7]. Sezgin B et al., had reported concomitant cutaneous tuberculosis abscesses and multifocal skeletal tuberculosis in a 5-year-old girl [8]. Kala S et al., had reported tuberculosis verrucosa cutis over a keloid, which is very rare [9].

Our case was again unique, where there was coexistence of Hanseniasis as well as Tuberculosis. Leprosy and Tuberculosis, both are caused by *Mycobacterium spp.*, whose development depends on impaired T cell function. In correlation with the current study, a report of triple association of American cutaneous Leishmaniasis, Lepromatous leprosy and Pulmonary tuberculosis, caused by *Mycobacterium* and *Leishmania* was published, where there was no recognized impaired cell mediated immunity. But his T cells were unresponsive to upregulation of the interleukin-12 (IL-12) receptor

expression after stimulation with *L. guyanensis*, *M. bovis*, Bacilli Calmette Guerin and *M. leprae* antigens, to mount an appropriate T_H cell response [10].

CONCLUSION

Scrofuloderma, a common presentation of cutaneous TB, occurs in populations which have low socio-economic status and is often misdiagnosed with many other conditions. So, a clinicopathological study is essential in a poor state like Orissa, to estimate the burden of the disease. Moreover, its association with hanseniasis is one among the very few reports which have been published. Hence, further studies are needed to emphasize the causation of such association.

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