



## A RARE CASE OF CONCOMITANT MULTIPLE TUBERCULOUS GUMMA AND SCROFULODERMA WITH POTT'S SPINE IN A YOUNG FEMALE

### Dermatology

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### ABSTRACT

Mycobacterium tuberculosis (MTB) is commonly found in the pulmonary system (51.6%) due to inhalational transmission, but other organ systems including gastrointestinal (4.9%), spinal (4.2%), meningeal (2.1%) and genitourinary (1.6%) systems are also involved albeit less frequently<sup>1</sup>. Tuberculosis (TB) affects 1/3rd of world's population. Incidence of cutaneous T.B is approximately 1.5% of extra pulmonary TB<sup>2</sup>. Scrofuloderma (SFD) is a form of cutaneous T.B resulting from direct invasion of bacilli into skin from lymph node, bone or joint. Metastatic tuberculous abscesses (also known as tuberculous gumma) are a rare and unusual form of cutaneous TB that is commonly located on the extremities and commonly found in the immunocompromised. Skeletal tuberculosis accounts for only 1-5% of all tuberculosis infections and approximately 50% of these affect the spine<sup>3</sup>. We present a case of 15yr old girl with 2 rare presentations of the disease i.e., a metastatic skin abscess and SFD with underlying pott's spine.

### KEYWORDS

Cutaneous TB, Scrofuloderma, Tuberculous Gumma, Pott's Spine.

### CASE REPORT

A 15 year old female presented with a chief complaint of painless ulcer over the mid back of 7 months duration and three painless swellings over right ankle, right wrist and right cheek of 1 month duration. Later she developed a small painless swelling over back which gradually progressed to the size of a lemon over a span of 10 days which thereafter ruptured spontaneously within 20 days leaving behind a large ulcer discharging purulent material. There was no history of evening rise of temperature / easy fatigability / cough or breathlessness / neck swellings / abdominal cramps, recurrent diarrhea. No history of TB in family members. There is a history of a known case of TB in an elderly person in the neighborhood. She reported progressive unexplained weight loss for the past 7 months.

On examination, she was ill built and malnourished with a BMI as low as 13.9 (underweight). All her vitals were stable and systemic examination was unremarkable. Cutaneous examination on the back revealed a solitary irregular shaped ulcer measuring 5x4 cm<sup>2</sup> with violaceous margin and base covered with granulation tissue and central slough over the midline encroaching onto the right para-spinal area with scarring at one end and undermined edge on the other side (Figure 1). Three non-tender fluctuant swellings measuring 2.5x2 cm, 3x2 cm and 2x1 cm were noted over noted over cheek, lateral side of right ankle and dorsal aspect of the right wrist respectively (Figure 2). Provisional diagnoses of SFD with metastatic abscess & Systemic mycosis was made and investigated further.

All her routine lab investigations were normal except, her hemoglobin was 9.8 gm%, ESR was 60mm/1st hour and her C Reactive Protein was positive Mantoux test was strongly positive and MRI dorso-lumbar spine revealed spondylitis with pre and paravertebral abscesses suggestive of Koch's etiology in in D12 and L1 vertebral bodies (Figure 3). Biopsy for histopathology, discharge for Microscopy and Culture were inconclusive. Her HIV status was non-reactive. Chest x-ray and Ultrasound Abdomen were normal

Though the results of all lab investigations carried out were reported negative for tuberculous etiology, considering the examination, radiological findings (MRI) & Mantoux report a final diagnosis of Concomitant Cutaneous Metastatic Tuberculous Abscesses and SFD with Pott's spine was made and was started on Anti-tubercular therapy. She was categorized into ATT cat - 1 and the Directly Observed Treatment Short Course DOTS regimen (paediatric dose) as per the

recommended pediatric dosage guidelines was started. She was given Rifampicin 300mg, Isoniazid 300mg, Ethambutol 800mg, Pyrazinamide 1gm daily. She was also given hematinic and analgesics as adjuvant therapy. She was advised to take high protein diet and proper wound care. Significant symptomatic & clinical improvement was noted within 2 weeks of initiation of therapy (Figure 4).

### DISCUSSION:

Cutaneous TB is a rare cause of extra-pulmonary MTB, only occurring in 1% of those infected<sup>4</sup>. Cutaneous TB is caused by M.tuberculosis, M.bovis, and, rarely BCG. It often coexists with the other forms of tuberculosis i.e, pulmonary TB and lymph node TB<sup>5</sup>. Based on host immune status and route of infection, cutaneous TB can be classified as Multibacillary (Table 1) & Paucibacillary (Table 2) types<sup>3</sup>.

In India, SFD is the most common type of cutaneous tuberculosis in children and adolescents second most common in adults next to lupus vulgaris. It is a form of cutaneous TB resulting from direct invasion of bacilli into skin from underlying lymph node, bone or joint. Lymph nodes are the most common foci, of which cervical node infection with SFD of the neck region is the most common site of involvement. Primary infection of the bone, including spinal TB, is another source of SFD in childhood<sup>6</sup>. Skeletal tuberculosis accounts for only 1-5% of all tuberculosis infections and approximately 50% of these affect the spine<sup>7</sup>. Clinically SFD is characterized by the development of painless subcutaneous swellings that evolve into cold abscesses, multiple ulcers and draining sinus tracts.

Metastatic tuberculous abscess also called as tuberculous gumma is a rare form of cutaneous TB resulting from hematogenous spread of bacilli from a primary focus during a period of impaired immunity<sup>3</sup>. Clinically, it is difficult to differentiate this form from other pyogenic infections such as syphilis, pyoderma gangrenosum, atypical mycobacterial lesions and some fungal infections<sup>8</sup>. Diagnosis of tuberculous gumma can be done on the histological pattern of widespread caseation necrosis. The patient usually presents with a single or multiple, firm, subcutaneous nodule or fluctuant non tender abscess. The nodules eventually penetrate the skin to form undermined ulcers with sinuses or fistulous tracts. Lesions may occur at any site but more commonly, seen on extremities. Biopsy from the periphery of the lesion may show granulomas suggestive of tubercular etiology. But, the histopathology is nonspecific in most of the cases. In such cases, AFB staining and culture, skin biopsy and other investigations like,

Mantoux test, radiological tests (X-ray chest, MRI), FNAC of lymph nodes can help as diagnostic aids.

Many prospective studies in India, Pakistan and Ethiopia, they have studied the clinical presentation and epidemiology of cutaneous TB with <10% presenting as tuberculous gumma. The present HIV epidemic has strong associations with increasing susceptibility to TB, reactivation of TB and spread<sup>9</sup>.

For the management of all the types of tuberculosis, WHO has implemented Directly Observed Treatment Short Course (DOTS) 10 (Table 3) for the management of all types of tuberculosis in the year 1997. Duration of treatment of scrofuloderma depends on the underlying structure involved. For TB Spine Total treatment duration is 12 months (extendable to 18 months on a case-by case basis) & Ocular TB, it is 6 to 9 months.

**Conclusion:**

Coming across multiple forms of TB in a single patient is not uncommon. Any chronic painless ulcer which is progressive in nature & overlying a lymph node, bone or joint, possibility of scrofuloderma should be strongly considered in Indian scenario. More so, when it is associated with loss of appetite, unexplained loss of weight with or without a history of exposure to a known TB case. Clinical diagnosis is most of the times sufficient to go ahead with treatment if few corroboratory evidences are present and can save time avoiding long waiting periods of the culture reports.

In any atypical cases with features like ours, a strong index of suspicion of the TB is necessary, especially in this era of HIV and Resistance of organisms.

**Figures:**

**Figure: 1**

Ulcer over the mid back with scarring edge on one side and undermined edge on the other side



**Figure: 2**

Three non-tender fluctuant swellings measuring 2.5x2 cms, 3x2 cms and 2x1 cms over right cheek, lateral side of right ankle and dorsal aspect of the right wrist respectively.



**Figure: 3**

MRI dorso-lumbar spine showing spondylitis with pre and paravertebral abscesses suggestive of Koch's etiology in D12 and L1 vertebral bodies



**Figure: 4**

Comparative clinical photographs of ulcer on the spine area before and after 2 weeks of initiation of ATT (DOTS), showing the remarkable improvement.



**Tables:**

**Table: 1**

Multibacillary forms of cutaneous TB

Multibacillary forms:		
Host Immunity	Method of inoculation	Disease
Naive host	Direct inoculation	Tuberculous chancre (primary inoculation)
Low	Contiguous Spread	Scrofuloderma
Low	Autoinoculation	Orificial Tuberculosis
V Low	Haematogenous Spread	Acute Miliary Cutaneous TB
V Low	Haematogenous Spread	Tuberculous Gumma (Abscess)

**Table: 2**

Paucibacillary forms of cutaneous TB

Paucibacillary forms:		
Host Immunity	Method of inoculation	Disease
High	Direct inoculation	Warty TB (TBVC)
High	Direct inoculation	Lupus Vulgaris (some)
High	Haematogenous Spread	Lupus Vulgaris
High	? Haematogenous Spread	Tuberculids -Lichen scrofulosorum -Papulonecrotic tuberculid -Erythema induratum (Bazin's)

**Table: 3**

Directly Observed Treatment Short Course (DOTS)

Directly Observed Treatment Short Course (DOTS)		
Drugs	Intensive phase (2 months)	Continuation phase (4 months)
Isoniazid (H)	5 mg/kg daily	5 mg/kg daily
Rifampicin (R)	10 mg/kg daily	10 mg/kg daily
Pyrazinamide (Z)	30 mg/kg daily	
Ethambutol (E)	15 mg/kg daily	

All the drugs have to be taken on an empty stomach. Intermittent regimen (thrice weekly) can also be followed.

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