Non-healing cutaneous ulcers: A manifestation of miliary tuberculosis.

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Key clinical message:

Tuberculosis is one of the major causes of morbidity and mortality in developing countries and is one of the major health burdens in Nepal. It usually affects the lungs, although other systems can be infected. Cutaneous tuberculosis represents a small subset of extra-pulmonary tuberculosis and present in non-specific and varied ways.

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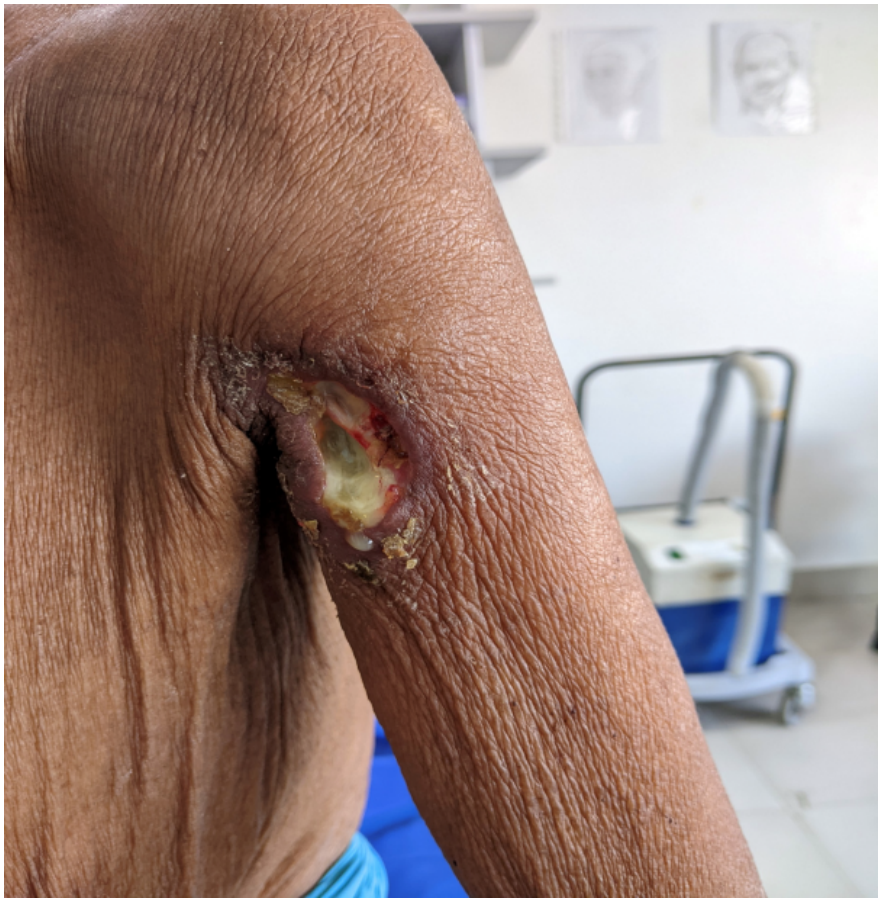
CASE REPORT

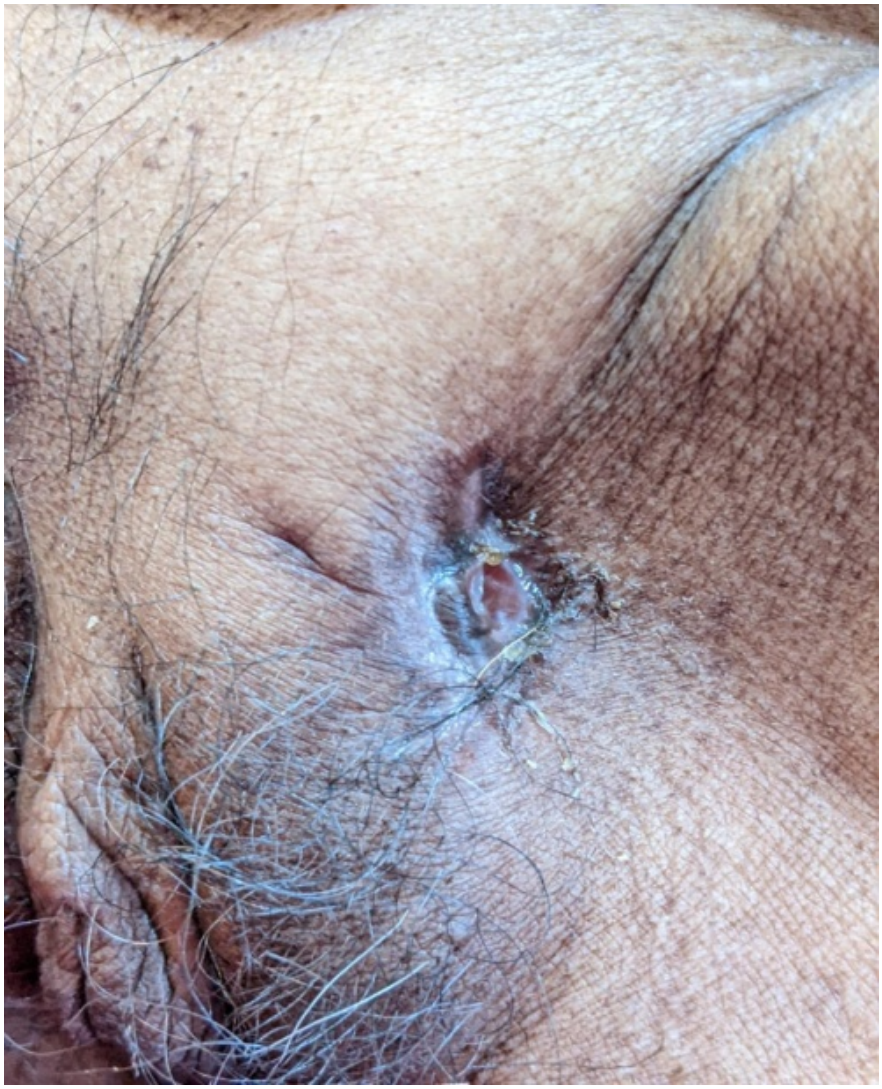
BACKGROUND

With the rise in the prevalence of immunocompromised patients, tuberculosis with unusual manifestations is more observable[1]. Cutaneous miliary tuberculosis is a less common manifestation of extrapulmonary tuberculosis resulting from a hematogenous spread[1]. Due to the non specific clinical features and high transmissibility, it is important to recognize the disease early on its course[2]. Here, we present a case of a 67 years female with non healing cutaneous ulcers secondary to miliary tuberculosis with Potts spine and improvement of clinical features following a month of anti-tubercular drugs.

OBSERVATION

We present a case of a 67 year old female who presented to our dermatology OPD with the chief complaints of multiple painful non healing ulcers with yellowish discharge over mons pubis and perivulvar area for 6 months with single ulcer over left upper arm from 5 months (fig 1, 2, 3). The lesions started as firm tender swellings which ruptured spontaneously to form ulcers. She was admitted in a different department and was treated with multiple courses of IV antibiotics without any improvement. On physical examination, she was thinly built weighing around only 38kg. Ulcers were well defined, painful, with a firm edge and yellowish discharge. These were 4-5 in number over perivulvar area measuring around 1x2 cm, and a single ulcer over left upper arm measuring around 4x5 cm. A punch biopsy specimen of the edge of the ulcer showed poorly formed granulomas consisting of epitheloid cells (fig 4, 5). Mantoux test was negative. However, acid fast bacilli were seen in tissue gene xpert, sample taken from ulcer over left upper arm. There were no lymphadenopathies. Her chest x-ray showed numerous nodules scattered throughout the both lung fields. For further investigation, we added a CT scan of the chest which was suggestive of miliary tuberculosis. She was also complaining of low back pain, so we performed x-ray of dorso-lumbar spine with MRI which showed features of Pott's spine. After one month of treatment with multi drug therapy including Isoniazid, Rifampicin, Ethambutol and Pyrazinamide, her symptoms were gradually improving with marked reduction in size of ulcers.





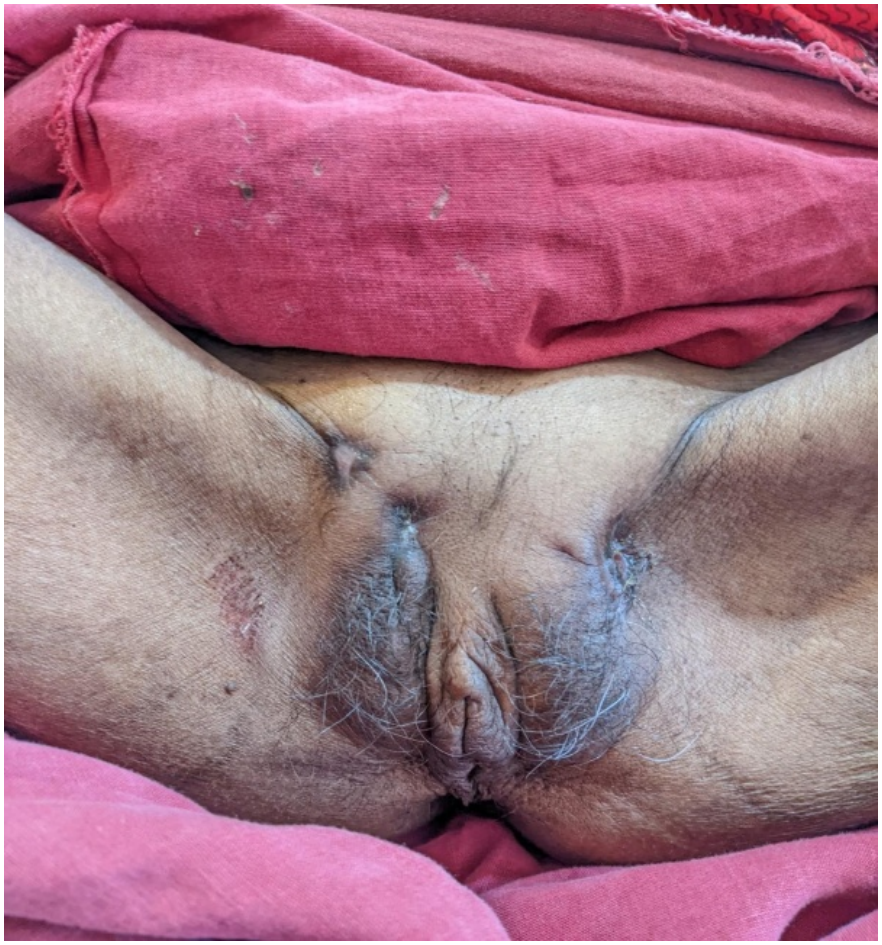
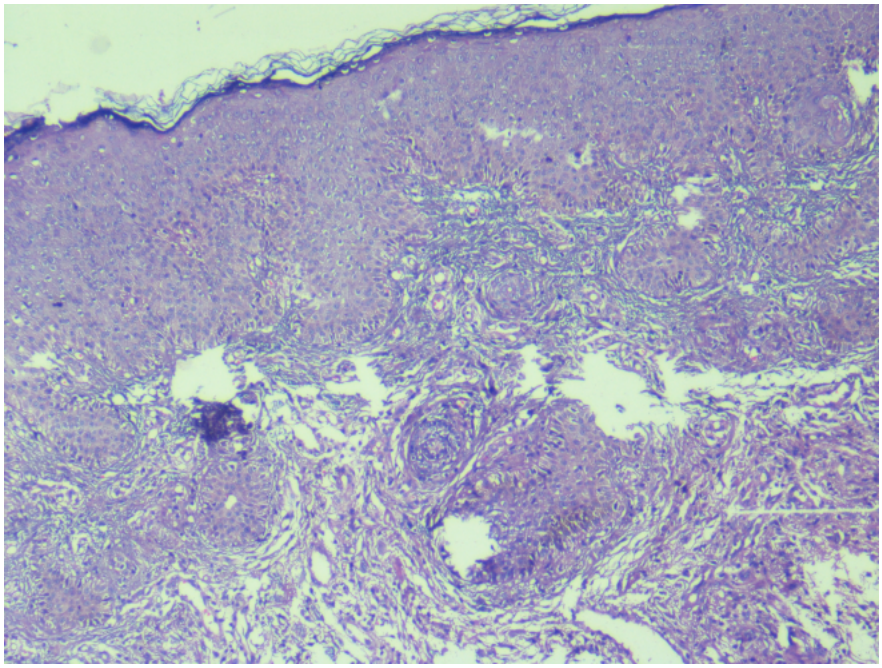


Figure 1: Non healing cutaneous ulcer with yellowish slough on left upper arm

Figure 2 and 3: Non healing cutaneous ulcers over mons pubis and labia majora



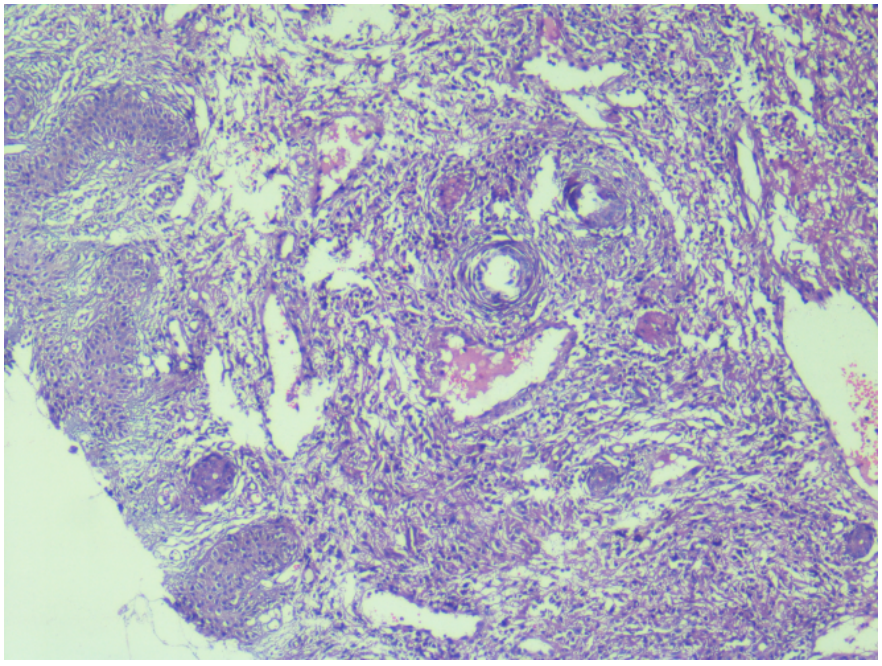


Figure 4 and 5: Histopathological pictures showing poorly formed granulomas consisting of epitheloid cells

DISCUSSION

Cutaneous Tuberculosis (TB) is a relatively uncommon manifestation of extrapulmonary TB (EPTB) accounting for 1-1.5 % of total cases of EPTB.[3]Cutaneous Tuberculosis is caused by Mycobacterium tuberculosis(MTB) and less commonly by mycobacterium Bovis or Bacillus Calmette-Guerin vaccine.[1]

Three modes of dissemination of cutaneous TB have been described to date which include primary inoculation, hematogenous spread and contiguous spread.[4]Modes of primary inoculation include acupuncture, needle stick injury, and insulin injection.[1,5]

Hematogenous spread of Cutaneous TB is also known in cases of AIDS and chronic kidney diseases.[6]

Depending on the bacterial load cutaneous TB has been classified as either paucibacillary or multibacillary. Multibacillary forms of cutaneous TB are tuberculous chancre, scrofuloderma, orificial tuberculosis, acute miliary tuberculosis, and metastatic abscess often called tuberculous gumma.[1]Paucibacillary forms of TB are tuberculosis verrucosa cutis, lupus vulgaris, and tuberculids.[1]

Tuberculids usually develop as a host hypersensitivity reaction against MTB infection in a visceral organ or distant skin lesion.[1,3]Tuberculids include papulonecrotic tuberculid, lichen scrofulosorum, erythema induratum of Bazin and nodular tuberculid.[1,3]

The manifestation of cutaneous miliary TB is not specific.[1, 2] Cutaneous manifestation of miliary TB includes erythema, erythematous whitish papules later developing into small vesicles which soon break down to form umbilication and crust formation, and symptoms such as fever, weight loss, and malaise can also be associated .[1]

Evaluation of Cutaneous TB needs proper history and examination along with relevant laboratory investigations. The investigation includes tuberculin skin test Serum QuantiFERON-TB Gold (QFT-G) levels, PCR, and skin biopsy.[7, 8]

Other tests include sputum culture and chest x-ray for identification of pulmonary TB and miliary pattern of the disease.[7]

Our case was diagnosed as cutaneous TB from a skin biopsy with Gene Xpert test.

Since cutaneous tuberculosis almost invariably has a systemic infestation, it is treated in the same manner as a systemic TB.[9]Multidrug therapy with isoniazid, rifampicin, pyrazinamide, and ethambutol are commonly used drugs.[7, 9] The treatment consists of 2 phases, initially intensive phase treatment for 2 months targets at suppressing the bacterial load and a prolonged continuation phase for 4 months emphasizes on the complete elimination of the causative organism.[7, 9]

Cutaneous TB can be prevented by the BCG vaccine and especially BCG-vaccinated ones have less chance of dissemination forms of TB[10]

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3) The paper reflects the authors' own research and analysis in a truthful and complete manner.

4) The paper properly credits the meaningful contributions of co-authors and co-researchers.

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Data availability statement

The data that support the findings of this study are openly available in Clinical Case Reports

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Detailed author's contribution :

ES contributed to the collection of data and the management of the patient. SS, BY and NP wrote the initial draft of the manuscript. ES, AM and DK revised and prepared the final version of the manuscript. All authors have read and approved the final manuscript and agree to take full responsibility for the integrity and accuracy of the work.

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