# Facial Lupus Vulgaris Exhibiting Recurrent Purulent Discharge: An Unusual Presentation

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## ABSTRACT

Cutaneous disorders can run a chronic course and can be quite disfiguring on the exposed body parts, such as the face and hands. Due to the low prevalence of cutaneous tuberculosis, physicians might be unfamiliar with unusual presentations, leading to such infections going undiagnosed for years. This case report highlights how facial lupus vulgaris, a chronic cutaneous Mycobacterium tuberculosis infection, was diagnosed after a lapse of considerable time. Classically, lupus vulgaris is characterised by erythematous to brown-coloured plaques with overlying scaling and areas of scarring. However, in the current case, there was minimal scaling. The significant feature was recurrent pus discharge from the lesions, which is scarcely reported in the medical literature. This atypical presentation led to the progression of lesions on most parts of the face, including the nasal mucosa. It caused significant disfigurement with resultant low self-esteem and social isolation of the patient.

**Key Words:** *Cutaneous tuberculosis, Facial plaques, Lupus vulgaris, Psychosocial impact, Purulent discharge*.

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## INTRODUCTION

Cutaneous tuberculosis (TB), an extra-pulmonary manifestation of Mycobacterium TB, accounts for 1-2% of TB cases. It is more prevalent in low- and middle-income countries, with facial lesions being a rare occurrence.[1] Cutaneous TB is categorised based on factors such as host immunity, bacterial load, and infection route. Classifications include inoculation, secondary, haematogenous, or eruptive types by the route of infection, and by bacillary load into multi-bacillary (e.g., scrofuloderma, tuberculous chancre) or pauci-bacillary forms (e.g., lupus vulgaris, tuberculosis verrucosa cutis), the latter often indicate better immune status.

Due to its rarity and atypical presentations, cutaneous TB can remain undiagnosed for extended periods, leading to complications such as scarring, systemic spread, and quality of life impairment.[2] With global migration, TB continues to pose a public health challenge. We report a case of facial lupus vulgaris (LV) which was diagnosed and treated after a significant delay due to its uncommon presentation.

## CASE REPORT

A 49-year male, residing in a rural area, presented to the dermatology department of a tertiary care hospital with facial swelling and redness for the last two years.

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According to the patient, a raised red lesion appeared on the right cheek and gradually extended over the bridge of the nose to the other side, superiorly extending to the eyelids and forehead, and inferiorly to the upper lips. The lesions further extended inside the nostrils, causing difficulty in breathing and disturbed sleep patterns. For the last six months, he often complained of painful purulent discharge from the lesions, responding temporarily to oral antibiotics prescribed by the general practitioner. But purulent lesions would recur soon afterwards. He began to have frequent panic attacks, with an inability to sleep at night. He felt claustrophobic in rooms and would spend most nights strolling in the open. He was unaware of any preceding trauma or insect bite. There was no history of fever, night sweats, cough, significant weight loss, or urinary or bowel complaints. He was a non-smoker and denied any other addiction. He was not aware of any family history of TB, diabetes mellitus, or hypertension. He did not travel abroad.

On examination, he was a middle-aged man of average build, not in obvious respiratory distress, with stable vital signs. His systemic examination was unremarkable. Dermatological examination revealed an erythematous, mildly tender, edematous plaque with ill-defined margins, covering most of the face, extending from the glabellar region down to the nasal bridge to the upper lip and on the sides of both cheeks (Figure 1). Prominent areas of crusting and yellowish purulent discharge were noticed on multiple sites, especially the upper lip, nostrils, moustache, and surrounding cheek and chin areas. Mucocutaneous leishmaniasis, cutaneous tuberculosis, and subcutaneous fungal infections were considered in the differential diagnosis.

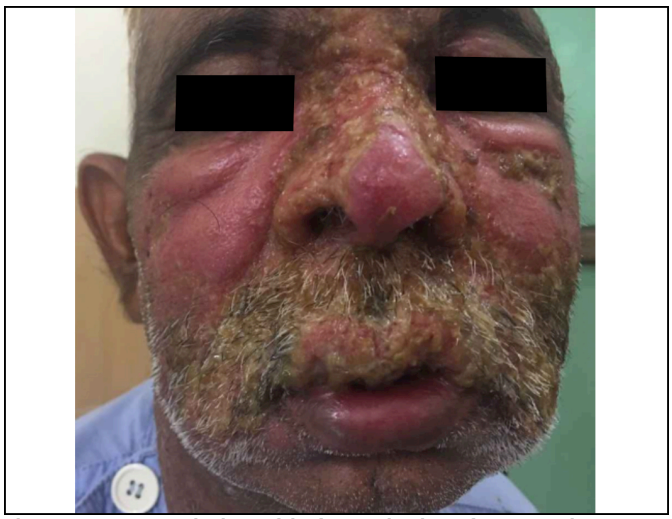

**Figure 1: Cutaneous lesions of the face at the time of presentation.**

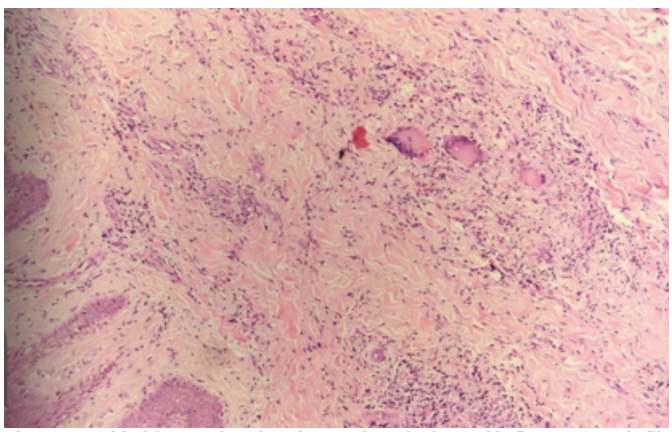

**Figure 2: Skin biopsy showing dense chronic dermal inflammatory infiltrate with many granulomas composed of epithelioid cells and few multinucleated giant cells (Haematoxylin & Eosin staining, ×10).**

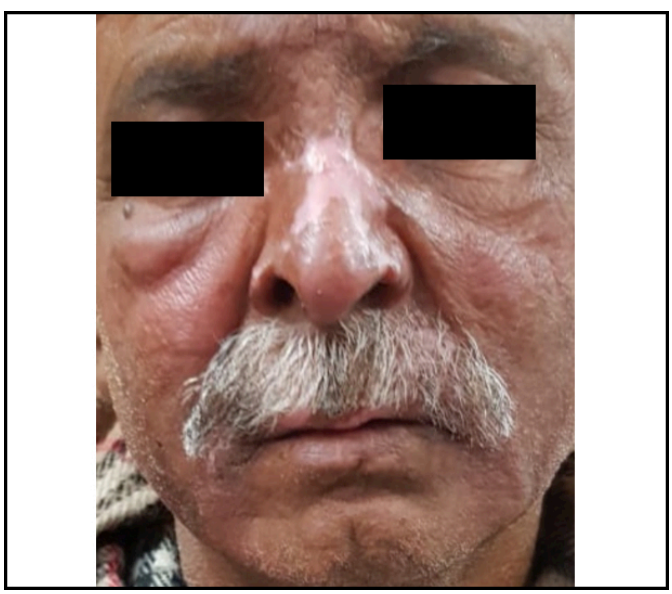

**Figure 3: Resolution of lesions with mild residual scarring and post-inflammatory hypopigmentation at the end of treatment.**

The laboratory investigations revealed a haemoglobin of 13.6 g/dL (Normal: 13-17g/dL) with a total leucocyte count of 9.9 × $10^9$/L (Normal: 4-10 × $10^9$/L) with 72% (Normal: 40-80%) neutrophils and 25% (Normal: 20-40%) lymphocytes. Erythrocyte Sedimentation Rate (ESR) was 20 mm at the end of the first hour (normal up to 10 mm at the end of the first hour) and Mantoux tuberculin skin test reading at 72 hours showed 14 mm induration (≥15 mm induration is considered positive). Serum human immunodeficiency virus (HIV) antibodies were not detected. Chest x-ray and ultrasound of abdomen and pelvis were within normal limits. Other laboratory results were within normal range including fasting glucose level, glycosylated haemoglobin, and liver and renal function tests. A pus swab for culture and sensitivity revealed *Staphylococcus* aureus sensitive to penicillin, and the patient was given parenteral penicillin plus clavulanic acid for a week which significantly reduced the purulent discharge. Pus was also sent for detection of acid-fast bacilli and Mycobacterium culture but the tests came out negative. Skin biopsy was performed once the purulent discharge had ceased. It revealed dense chronic dermal inflammation with many granulomas composed of epithelioid cells and a few multinucleated giant cells (Figure 2). Leishmania donovani (LD) bodies were not detected. Giemsa and Ziehl-Neelsen stains were negative.

Tissue culture was negative for fungal or mycobacterial growth. The QuantiFERON – TB 2 Gold test, an interferon-γ release assay for Mycobacterium TB, was positive, confirming cutaneous TB. Final diagnosis of LV with no systemic involvement was made.

The patient was prescribed anti-TB treatment (combination of isoniazid, rifampicin, pyrazinamide, and ethambutol daily in the morning, half an hour before breakfast), along with vitamin B supplement. He responded satisfactorily to treatment and cutaneous lesions began to heal. After two months of therapy, he continued with two medicines i.e. isoniazid and rifampicin for another four months. At the completion of six months of anti-TB treatment, the erythematous plaques settled down significantly. There was marked improvement in his facial appearance. Some residual post-inflammatory depigmentation and mild scarring at the bridge of the nose persisted (Figure 3).

The patient was happy with the therapeutic response and reported radical changes in his lifestyle. He started going out and his panic attacks settled.

## DISCUSSION

This case is presented to emphasise the dilemma of late diagnosis of cutaneous TB leading to extensive involvement of the face. The patient did not present with typical lesions of LV which are scaly brownish-red plaques with areas of scarring, often present on the buttocks and lower legs in the Asian population.

Cutaneous TB, although rare in the Western world is not an uncommon occurrence, especially in underdeveloped and tropical regions of the world.[2] Among all cases of cutaneous TB,

LV is the most frequent form that occurs in adults who have resilient immunity and is the second most frequent type in children.[3-5]

LV begins as a soft, brownish-red papule or nodule that progressively grows over many months to years into a well-defined skin-coloured to erythematous plaque and on diascopy, the lesion appears as red-brown granules that have been aptly described as "apple jelly" nodules.[2-4] Different clinical appearances of LV have been described; i.e. vegetative, plaque, hypertrophic, papular or nodular, ulcerative, atrophic, and mutilating.[2-5] Among these clinical variants, plaque is the most common type that gradually spreads and forms areas of healing and scarring at one site and activity at another. These lesions usually do not exhibit sero-sanguinous or purulent discharge.

The common site of lesions of LV varies. In Western countries, LV is more common on the face,[2,3] Whereas in South Asia, the lower limbs and buttocks are the favoured sites for the development of LV.[2] This might be due to impaired skin integrity, repeated pyoderma and trauma at these sites, as walking barefoot is quite common among the low socio-economic group.[2] Scaling and scarring are more common in LV but were missing in the present patient. Moreover, recurrent purulent discharge due to superimposed acute bacterial infection, observed in this patient, is an uncommon complication of this condition. This unique presentation led to a delay in diagnosis.

Histopathology is crucial for the definitive diagnosis. It shows characteristic epithelioid granulomas in the upper dermis, and in up to 80% of the cases, lymphocytes and Langhans giant cells are present. The remaining cases exhibit nonspecific alterations.[3] LV exhibits non-necrotizing granulomas, which typically do not have acid-fast bacilli. These findings were observed in this patient's skin biopsy and clinched the diagnosis.

Tissue for mycobacterial culture was negative. Literature review shows that bacteriological cultures on Lowenstein-Jensen medium and acid-fast staining often yield negative results in lupus vulgaris due to low bacillary burden in LV.[2,6] Polymerase chain reaction (PCR) techniques for mycobacterial DNA detection are more sensitive than culture, but they too present challenges in terms of interpretation and may turn out negative.[2]

Unusual variants of LV have been reported in the literature with sporotrichoid lesions,[7] LV with scrofuloderma in the same patient,[8] and as nodules on the arm which ruptured to form scaly, minimally raised plaques with scanty sero-sanguinous discharge off and on.[9] Kinra *et al*.[9] have titled their case report as 'lupus vulgaris with abscess'; however, their patient presented with four nodules on the forearm, which later became scaly plaques up to 2 cm, with scanty sero-sanguinous discharge off and on. The authors made the differential diagnoses of lichen simplex chronicus, LV, and sporotrichosis. Hence, the clinical appearance is quite different from the current case.

An extensive literature search did not reveal such exuberant and recurrent purulent discharge from LV plaques being reported before, making it worthy of reporting to make other physicians aware of this manifestation. We investigated the patient for immune-compromised status but laboratory investigations were within normal limits. We hypothesise that it could be due to his habit of skin picking due to anxiety and self-consciousness, which led to recurrent pyogenic infections. Once his anti-TB treatment was initiated, he did not have such purulent lesions, raising the possibility that the purulent discharge could be a manifestation of the pauci-bacillary mycobacterial infection, with no detection of acid-fast bacilli in the pus.

This case also highlights the psychosocial impact of illness. Once the patient's management plan was made on appropriate lines, he responded well, and this led to the restoration of his self-esteem and liberation from his social isolation. Dermatological disorders can gravely impair patients' quality of life and should not be underestimated.[10] They can potentially affect a person's well-being, social functioning, and workability, especially if the lesions are on the exposed parts of the body, such as hands, face, nails, *etc*.

Clinicians need to be aware of unusual presentations of LV, which is the most common type of cutaneous TB. Recurrent purulent discharge from the facial plaques, with minimal overlying scaling, delayed the diagnosis, with the resultant spread of the lesions nearly all over the face. Such lesions on the exposed body parts e.g. face can be disfiguring and if not diagnosed and managed promptly may have a lasting effect on the patient's psychological well-being.

**PATIENT'S CONSENT:**

Informed consent was obtained from the patient.

**COMPETING INTEREST:**

The authors declared no conflict of interest.

**AUTHORS' CONTRIBUTION:**

AR: Acquisition of data, supervision and revising the manuscript critically for important intellectual content.

MA, LM: Conception, acquisition of data, and initial drafting of the manuscript.

All authors approved the final version of the manuscript to be published.

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