

## Hidden Invader or Hidden Errors? A Critical Review of a Case Report

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We read with interest a case report by Bashir et al (2025) titled "A new case of Leprosy with Atypical Morphotype on Slit Skin Smear- Unmasking a Hidden Invader". The title of the case report having new words like "atypical morphotype" and "hidden invader" related to leprosy attracted our attention. However, the contents brought out numerous inconsistencies and theorization in the history, examination, diagnostic approaches and interpretation of results.

1. The case report mentions a young male presenting with a non-healing ulcer on the left foot for several years and several hypopigmented lesions over the back. While the authors are right in suspecting Hansen's disease- the subsequent case description is incomplete. There is no mention of neurological complaints/ deficit in the patient, no neurological examination to elicit hypoesthesia/ anesthesia, nerve thickening, tenderness etc. including the area around the ulcer and also any motor deficit.

2. The authors have mentioned in the history about the treatment of arthritis in the past with no further details. Joint involvement in a young person is a serious disease and can be seen in many diseases and also in the whole spectrum of leprosy, with acute involvement in episodes of reaction. No details about diagnosis or treatment are given.
3. The authors provide extensive details about the slit skin smear-its methodology and staining etc. which are well known and well described in the existing guidelines. But the authors missed on their readings and interpretation. Terms like 'a few AFB seen' is not the accepted protocol to describe it. That is why probably, the actual bacteriological (BI) and morphological index (MI) in this patient has not been given. Scientific terms like 'solid' 'granular' and 'fragmented' bacilli should have been used.
4. The patient has been labelled as a case of 'indeterminate leprosy' primarily on the basis

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of histopathological findings of 'superficial perivascular lymphoid infiltrate' which alone does not indicate any form of leprosy. Presence of multiple hypopigmented lesions on the back, presence of AFB in the skin smear (even though the picture is of a very poor quality) and a trophic ulcer on the left foot have been totally ignored. Presence of AFB in the skin smear is sufficient to classify the disease as multibacillary, according to revised WHO classification. The wrong classification has put the patient in risk of getting no treatment (observation only) or inadequate treatment, which will be a disaster.

5. In the context of a non-endemic region (stressed too often) it would have been valuable to describe whether contact tracing was attempted. Examination of close contacts is essential both for early detection and preventing transmission and development of complications / deformities.
6. The central issue is about the terms used as in the title of the case report- "atypical morphotype" and "hidden invader". The authors have expressed great concern about 'broken AFBs' in the SSS, "it being an uncommon microbiological picture, which should not be overlooked". This observation even made them to state "hence to diagnose a new case of borderline leprosy with a picture of atypical morphotype of *Mycobacterium leprae* (broken AFB) on SSS in this non endemic area is a great challenge"- a totally unacceptable statement.
7. The authors seem to be fascinated / intrigued by the presence of granular, fragmented, broken bacilli and it made them to label these with such new terms as 'atypical morphotypes' and 'silent invaders'. They

further warn of the great repercussions on the patient and society especially because these 'hidden invaders' can remain in the 'sub clinical form for decades. They again sound an alarm to the microbiologists to explore the 'hidden invader' with atypical morphotype.

8. To justify their theorization/ presumption about the presence of these 'broken bacilli' – they cite the role of medication for arthritis which may have included TNF- $\alpha$  inhibitors, the antibiotics which the patient may have been prescribed for his non healing ulcer (no details however are given) to cause immunosuppression and partially affecting the AFBs to cause their disruption i.e. brokenness.
9. The authors probably because of lack of complete technical information have imagined all this without realizing that- 'granular' and 'fragmented' bacilli are present normally in all slit skin smears- irrespective of treatment. Reading about morphological index (MI) would have saved the authors a lot of trouble.

The case report unfortunately creates a lot of confusion about the interpretation of slit skin smears. BI & MI, proper history taking and essential neurological examination for a patient with leprosy, classification of the disease and appropriate therapeutics. The essential component of contact tracing – the most important in leprosy control should have been practiced and emphasized.

#### Reference

1. Bashir G, Aman M, Malik AS et al (2025). A new case of leprosy with atypical morphotype on slit skin smear: Unmasking a hidden invader. *Indian J Lepr.* **97**: 79-82.

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