



# Hansen's Comedonicus: Borderline Tuberculoid Hansen's Disease with Comedones a Rare Phenomena

**Amar Singh <sup>a++\*</sup> and Pravesh Valecha <sup>b++</sup>**

<sup>a</sup> Department of Dermatology, Venereology and Leprosy, SRMSIMS, Bhojipura, Bareilly, UP, 243202, India.

<sup>b</sup> Department of Dermatology, Venereology and Leprosy, American International institute of Medical Sciences, Udaipur, Rajasthan, India.

## **Authors' contributions**

*This work was carried out in collaboration Between both authors. Both authors read and approved the final manuscript.*

## **Article Information**

### **Open Peer Review History:**

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/126195>

## **Case Report**

**Received: 02/09/2024**

**Accepted: 07/11/2024**

**Published: 19/11/2024**

## **ABSTRACT**

Regarding childhood leprosy, lack of well-defined clinical signs in children make this section of population highly vulnerable for late diagnosis and leading to disabilities and complications. Prevalence of Hansen's disease has increased since the last decade with many atypical presentations, which make it difficult to diagnose. We are presenting a case of 13-year-old male with Hansen's disease where anaesthetic plaques were associated with multiple comedones over them resulting into an unusual presentation.

**Keywords:** Comedones; borderline tuberculoid; follicular plugging; isotopic response.

<sup>++</sup> Assistant Professor;

\*Corresponding author: E-mail: [dr.amar13hims@gmail.com](mailto:dr.amar13hims@gmail.com)

## 1. INTRODUCTION

Hansen's disease has many atypical forms which make it difficult to diagnose and manage. In an infected patient *Mycobacterium leprae* harbour in sweat glands, sebaceous glands, hair follicles and arrector pili muscle. In lepromatous pole adnexal structure get atrophied due to granuloma pressure where as in tuberculoid pole inflammatory cell infiltrate destroy them [1-3]. Nerve conduction impairment causes the dysfunctions of skin appendages including hair growth, sebaceous gland secretion, sweating, and skin pigmentation which lead to different clinical pictures. *M. leprae* are discharged and disseminated through secretions and therefore infection through skin-to-skin contact can be one of the common modes of transmission of the disease [4].

## 2. CASE STUDY

### 2.1 Patient's Information

A 13-Year-old male presented to dermatology OPD with hypopigmented white color lesions over right shoulder and right thigh with a specific complain that acne appearing over these lesion for 1 years. Duration and progression of skin lesion and acne like lesion was similar. He did not give any history of anti-leprosy treatment or any other oral or topical treatment for the illness. No other positive or negative relevant history was elicited.

### 2.2 Clinical Findings

On examination two well defined hypopigmented plaques with mild erythema over right shoulder with multiple open comedones all over lesion with black keratotic plugging with around size of 2x2 centimeters and 4x3 centimeters, and on posterior aspect of right thigh with size of 10x6 centimeters. Comedones can be extracted by comedone extractor (Fig. 1 & Fig. 2).

### 2.3 Diagnostic Assessment

On dermatoscopy of left thigh lesion yellowish-brownish structureless area with decreased number of hair follicles, patchy loss of pigment network with white streaks and shiny scaling and accentuation of skin markings. Few areas with follicular keratin plugging with perifollicular and periappendageal

pigmentation over erythematous to brownish background (Fig. 3).

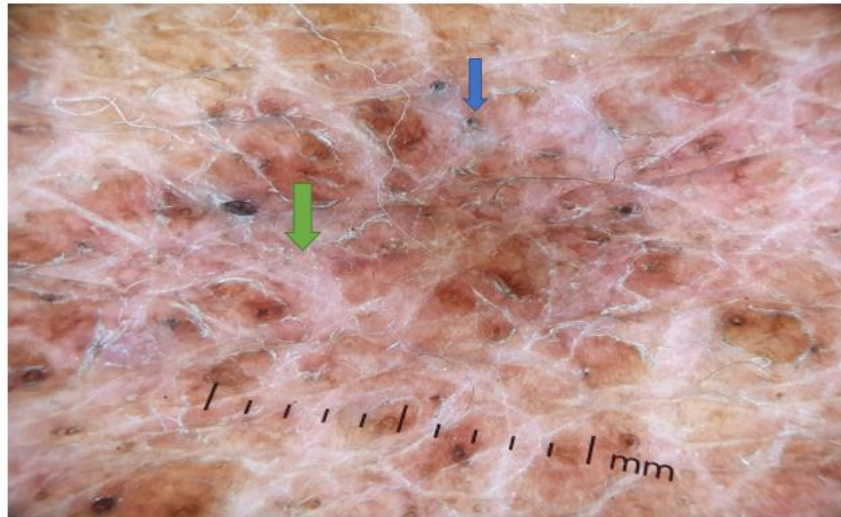


**Fig. 1. Hypopigmented plaque with multiple comedones over it on left thigh**

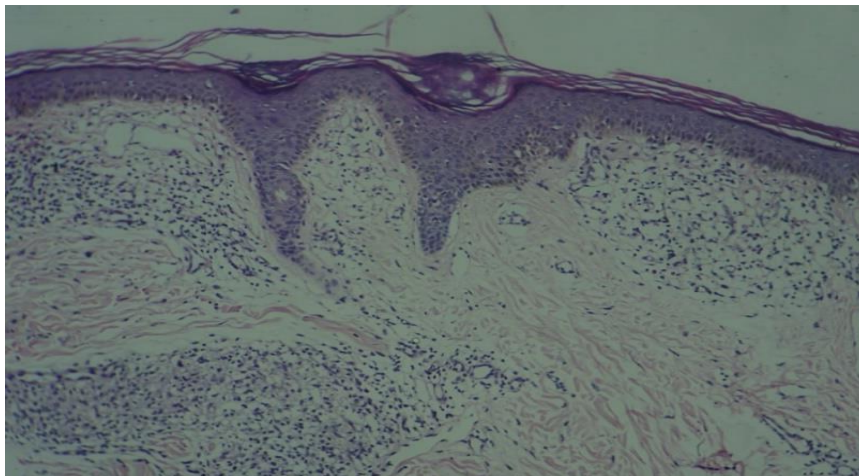


**Fig. 2. Two hypopigmented plaque on right shoulder with multiple comedones over them**

On further examination there was frank sensory loss to touch and temperature over lesions. Slit skin smear was negative from all sites. Histopathological sections from skin biopsy from plaque of right shoulder reveal small to ill formed granulomas with peripheral lymphocytes along neurovascular bundles and also infiltrating erector pili muscle. Occasional small Langhan's giant cells are noted. Epidermis showed hyperkeratosis and follicular plugging. All these findings are suggestive of borderline tuberculoid leprosy. Z N-stained section was negative (Fig. 4).



**Fig. 3. Dermatoscopic examination: Blue arrow showing follicular keratin plugging and green arrow denotes patchy loss of pigment network**



**Fig. 4. Epidermis showed hyperkeratosis and follicular plugging. Ill formed granulomas with peripheral lymphocytes along neurovascular bundles and also infiltrating erector pili muscle**

#### **2.4 Therapeutic Intervention, Follow-up and Outcome**

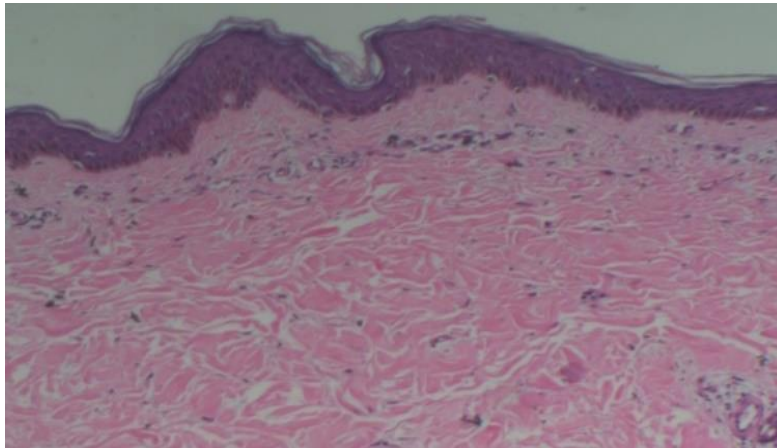
Patient was started on MDT MB child blister pack and was on monthly follow-up for 12 months with no progression in disease and satisfactory symptomatic improvement. It was interesting to see skin lesions were showing changes of resolution of leprosy but comedones were still present in significant number (Fig. 6 & Fig. 7). During whole treatment period patient applied nothing over lesions.

Repeat biopsy was performed before release from treatment from same site which shows sparse superficial and mid perivascular and peri

appendageal lymphocytic infiltrate with partial effacement of rete ridges. The dermoepidermal junction is focally infiltrated by lymphocytes. There is no granuloma. In view of clinical features these findings are consistent with healed borderline tuberculoid Hansen's disease (Fig. 5). Patient was counselled for follow-up and explained about post treatment course and prognosis.

#### **3. DISCUSSION**

Shrinivas et al presented a case of treated case of borderline tuberculoid Hansen's disease with single lesion with comedones over it but in that case, there was prolong history of coconut oil application [5].



**Fig. 5 Repeat biopsy shows sparse superficial and mid perivascular and peri appendageal lymphocytic infiltrate with partial effacement of rete ridges**



**Fig. 6. Plaque of left thigh showing resolution of lesion with comedones**



**Fig. 7. Shoulder plaques showing resolving phase with persistent comedones**

Lahiri et al presented a case of borderline tuberculoid Hansen's disease with acneiform eruption due to topical corticosteroid but in this case, lesions of leprosy were spared [6].

Borderline tuberculoid Hansen's lesions are dry, scaly and indurated with decreased perspiration, sebum production and diminished hairs, so appearance of comedones is usually not seen

[7]. Sometime Acneiform eruption are seen in patients of reactions which are steroid induced.

It may be isotopic response in which occurrence of a new skin disorder at the site of another, unrelated, and already healed skin disease. It May be Locus minoris resistentiae which is defined as "a site of lessened resistance; an area, structure, organ offering little resistance to invasion by microorganisms and/or their toxins [8].

The potential of oral dapsone to treat acne vulgaris is well established, but the risks of serious side effects have made it an undesirable drug for use in the relatively healthy acne population. Topical formulation of dapsone has been approved by the FDA for the treatment of acne vulgaris. This might be the reason behind that the leprosy patients usually do not develop acne lesions even during puberty [9].

#### 4. CONCLUSION

We are reporting this case due to unique and rare presentation of a Hansen' disease. In spite of searching on internet we could not find such de novo presentation of BTHD plaque with well-developed typical comedones over it.

#### DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

#### CONSENT

The patient provided written informed consent to publication of this case report and accompanying images.

#### ETHICAL APPROVAL

It is not applicable.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the publisher and/or the editor(s). This publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

© Copyright (2024): Author(s). The licensee is the journal publisher. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

#### REFERENCES

1. Pensler MS, Hristov AC, Aravind MS. Chronic annular plaques with new peripheral follicular plugging. JAAD Case Reports. 2024;49:25-7.
2. Lal NR. Papules: Localized. In Atlas of Clinical Dermatology in Coloured Skin. CRC Press. 2023;76-99.
3. Sinha A, Natarajan S. Linear morhpea, nevus comedonicus, and lichen striatus in a 5-year-old girl. Pediatric Dermatology. 2011;28(1).
4. Kotteeswaran G, Chacko CJ, Job CK. Skin adnexa in leprosy and their role in the dissemination of M. leprae. Leprosy in India. 1980;52(4):475-481.
5. Srinivas CR, Padhee A, Balanchandran C, Shenoy SD, Acharya S, Ramnarayan K. Comedones induced by coconut oil in a borderline tuberculoid lesion. International journal of leprosy and other mycobacterial diseases: Official organ of the International Leprosy Association. 1988;56(3):471-472.
6. Lahiri K, Malakar S. Steroid acne sparing Hansen's patches. Indian J Dermatol. 2006;51:118-9.
7. Ridley DS, Jopling WH. Classification of leprosy according to immunity. A five-group system. International Journal of Leprosy and other Mycobacterial Diseases: Official organ of the International Leprosy Association. 1966;34(3):255-273.
8. Wolf R, Wolf D, Ruocco E, Brunetti G, Ruocco V. Wolf's isotopic response. Clinics in Dermatology. 2011; 29(2):237-240.
9. Searle T, Al-Niaimi F, Ali FR. Dapsone for acne: Still in use after half a century! Journal of Cosmetic Dermatology. 2021; 20(7):2036-2039.

Peer-review history:

The peer review history for this paper can be accessed here:  
<https://www.sdiarticle5.com/review-history/126195>