

## De-novo Histoid Leprosy: A Case Report and a Review of Literature

MA Siddiqui<sup>1</sup>

Received: 04.10.2023

Revised: 02.01.2024

Accepted: 04.02.2024

Histoid leprosy is a rare type of multibacillary leprosy and an uncommon variant of lepromatous leprosy. It typically manifests as relapse in lepromatous individuals on dapsone monotherapy, but de novo occurrences are rare. Even skilled dermatologists may struggle to make a diagnosis for this uncommon type of disease. Histoid leprosy has distinctive clinical and histopathological characteristics. We describe a case in a young male with small to big papular lesions all over his body appeared as a de novo occurrence. These lesions ranged in size from 0.5 cm to 2 cm and were flesh-colored, shiny, almost symmetrical, and soft to firm in consistency. The scalp, ears, oral cavity, nose, palms, soles, and genitalia were spared. There was no lymph node enlargement or nerve thickening. Pain, touch, or temperature sensations were unaffected. There was no visible deformity. Slit-skin smears from normal skin were negative. This case was confirmed as histoid leprosy based on characteristic histopathological features and positivity for acid fast bacilli (AFB) from the lesions.

**Keywords:** Histoid, Leprosy, Dapsone, De Novo.

### Introduction

Histoid leprosy is a rare form of lepromatous leprosy that is distinguished by the presence of cutaneous and / or subcutaneous nodules and plaques over what seems to be normal skin, along with distinctive clinical, immunologic, and bacteriologic findings. The term 'histoid leprosy' was first used by Wade in 1963 (Wade 1963). It is seen in lepromatous patients after dapsone monotherapy, with existence of dapsone resistance and rarely de novo. In addition to lepromatous leprosy, unstable borderline and indeterminate leprosy groups may also infrequently exhibit it (Sehgal & Srivastava 1985, Dhatarwal et al 2023). Elimination of leprosy has already been achieved in India in 2005 (Sengupta 2018), although states like Bihar and Chattisgarh

are yet to achieve it.

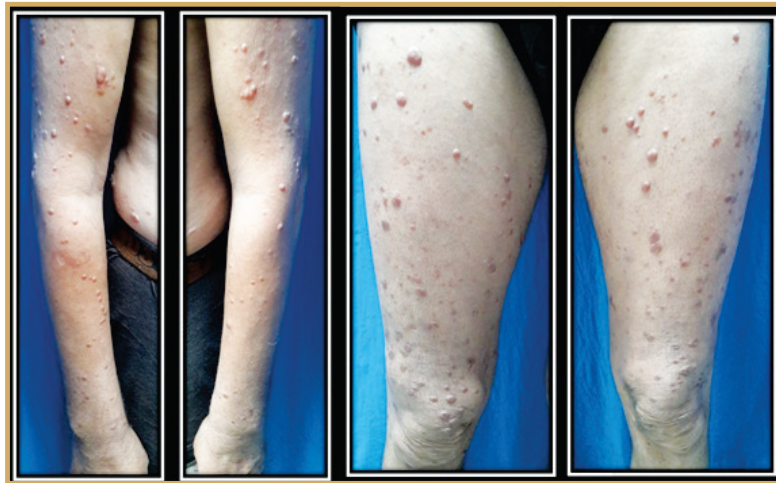
Reporting of unusual forms of leprosy thus continues to be of interest for practicing doctors including dermatologists/ leprologists.

### Case Report

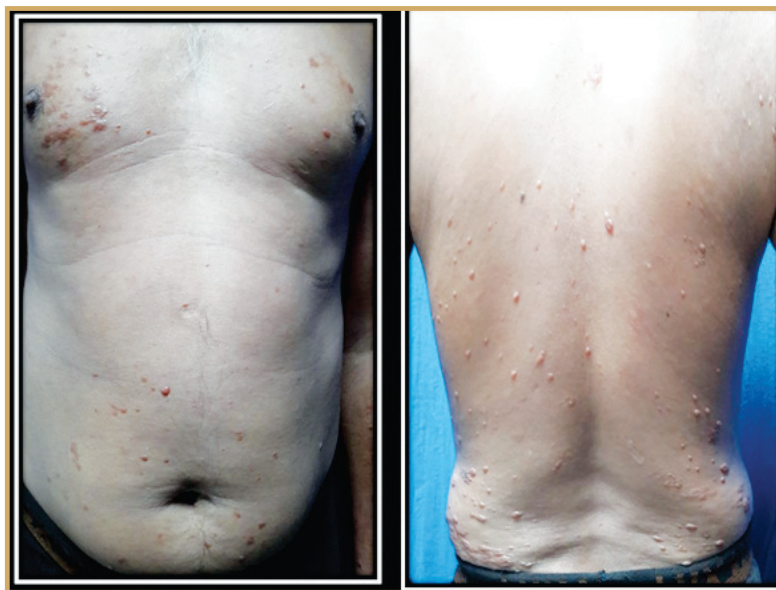
A 40-year-old male farmer presented with shiny, non-itching nodules, papules, and plaques on numerous body areas, with the trunk, lower back, buttocks, arms, and legs being most affected (Figs. 1 & 2).

Eight months ago, lesions first appeared as papules on lower back. The lesions ranged in size from 0.5 cm to 2 cm and were flesh-colored, shiny, almost symmetrical, and soft to firm in consistency. The scalp, ears, oral cavity, nose, palms, soles, and genitalia were spared. There was no lymph node

<sup>1</sup> Dr. Moin Ahmad Siddiqui, Senior Resident, Department of Dermatology  
Integral Institute of Medical Sciences and Research (IIMSR), Dasauli, Lucknow, Pin: 226003 (UP), India  
**Corresponding Author:** Dr Moin Ahmad Siddiqui, E-mail: moinahmad12@gmail.com



**Fig. 1 :** Multiple shiny, nodules and papules over bilateral arms and legs.



**Fig. 2 :** Multiple shiny, nodules, papules, and plaques over trunk and back.

enlargement or nerve thickening. Pain, touch, or temperature sensations were unaffected. There was no visible deformity. There was no history of trauma, epistaxis, long-term drug intake. Family history was non-contributory.

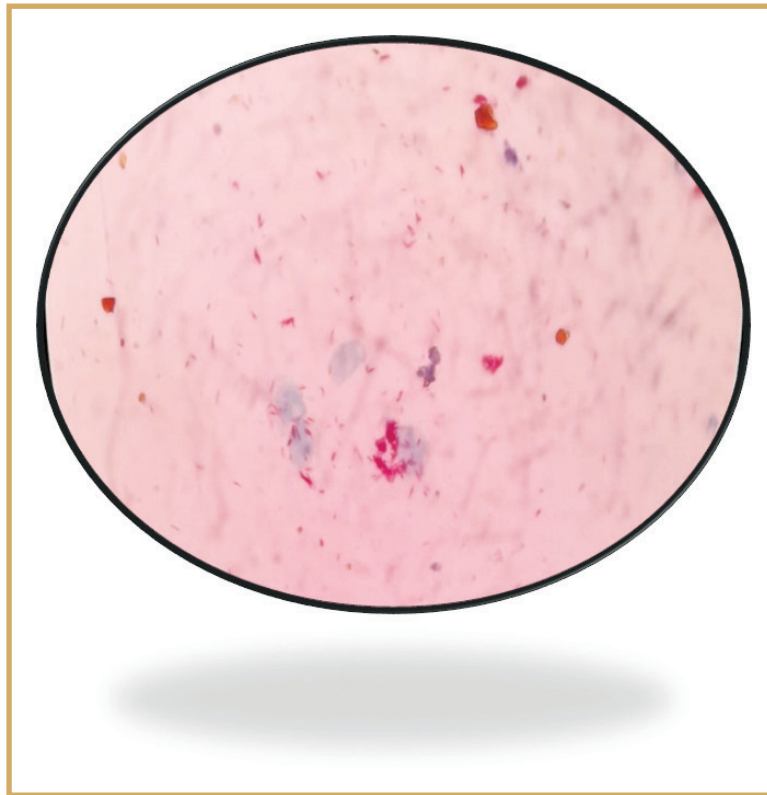
At the time, differential diagnosis included neurofibromatosis, eruptive xanthoma, papular xanthoma, sarcoidosis, generalized eruptive histiocytoma, cutaneous metastases and histoid leprosy.

**Table 1 : Histoid cases reported from India.**

S.No.	Author, Year	Age / Sex	Duration	Clinical presentation	Sites involved	BI	Associated symptoms
1.	Raheja et al 2022	44 years/M	3 months	Plaque	nose	5+	Gradually increasing swelling of nose, wheezing and difficult breathing.
		68 years/F	6 months	Plaques, nodules	Face, dorsum of hands	4+	Nil
		40 years/F	9 months	Plaques, nodules	Upper limbs	5+	Nil
		27 years/M	13 months	Plaques, nodules	Face, lower limbs	6+	- Thickened non-tender bilateral ulnar and common peroneal nerves. - No sensory or motor deficit.
2.	Panda et al 2022	23 years/F	3 months	Papules	Centro facial area	6+	Nil
3.	Murthy et al 2020	45 years/M	1 year	Papules and nodules	Low back, buttocks, arms, and abdomen.	4+	Nil
4.	Pandey et al 2015	50 years/M	3 months	Nodules and papules	Generalized body area and bony prominences of elbow and knee joint.	6+	Itching

5.	Kantaria 2014	50 years/M	1 year	Nodules	Abdomen, back, lower and upper limbs	4+	Epistaxis, Partial claw hand (right hand), Thickened Right ulnar nerve.
6.	Vora et al 2014	29 years/F	2 months	Papulo-nodular lesions Few hypopigmented patches.	Lower part of face and abdomen buttocks	6+	Altered hot and cold sensations below both knees
		28 years/F	3 months	Papulo-nodular lesions Few nodulocrusted lesions	Face, both hands, and legs	6+	Epistaxis and nasal stiffness.
		21 years/M	20 days	Papules and nodules	Forehead, ears, and cheeks	6+	Nasal stuffiness, congestion, and watering from eyes, Thickened nerves (Bilateral ulnar, greater auricular, common peroneal, anterior tibial, posterior tibial), Glove and stocking anesthesia.
7.	Dimri et al 2012	64 years/M	2 months	Nodules, papules, and plaques	Face, chest wall, elbow, knee, trunk, lower back, buttocks, arms, - and legs	4+ to 5+	Nil

8.	Nair et al 2006	39 years/M	1.5 years	Papules, Peduncu- lated, tu- mor-like masses	Back, arms, and knees, thighs	Chronic nonhealing toe ulcer, Distal loss of sensations (temperature, touch, and pain) Thickened nerves (Bilater- al greater auricular, ulnar, radial cutaneous and common peroneal).
----	--------------------	---------------	-----------	--	---	---



**Fig. 3 : Slit skin smear from nodule showing large number of acid-fast bacilli**

Except for mild leukocytosis, routine haematological tests were normal. ELISA for HIV was negative. Fine needle aspiration cytology (FNAC) of the nodule from back revealed round-to-elongated, spindle cells, with cytoplasmic

vacuolation. Numerous Acid-fast bacilli (AFB) were seen using the Ziehl-Nielsen (ZN) stain (Fig. 3). A bacterial index of 5+ with many solid acid-fast bacilli (AFB) was found in slit skin smear from a nodule.

The slit skin smear from the ear lobes was positive and from normal skin was negative. Histopathology was done from a nodule on lower back. It showed atrophic epidermis with a subepidermal grenz zone. Whorled and storiform patterns of histiocytes with round-to-spindle shaped cells could be seen in dermis. Pyknotic nuclei and foamy, vacuolated cytoplasm was seen. With a bacterial index of 5+, the Fite-Faraco stain revealed large number of evenly stained bacilli, some lying singly and some in groups. Finally, a diagnosis of 'de-novo' histoid leprosy (histoid leprosy without LL) was made. The patient was put on multibacillary multidrug therapy (MB-MDT). Follow up was done for 4 months with no apparent response, after which the patient was lost to follow up.

### **Discussion**

In India, Histoid leprosy is not uncommon. Some consider it as a form of lepromatous leprosy while others as a separate clinical entity. Its incidence among leprosy patients in India, is estimated to be 2.79 to 3.60%. Most of such cases are seen in men, and the average age at diagnosis ranges from 21 to 40 years (Annigeri et al 2007). It is characterized clinically by cutaneous or subcutaneous nodules and papules, that are painless, skin-colored to yellowish-brown, shiny and firm, with surrounding skin that is apparently normal. The lesions are typically found over bony prominences, particularly over elbows and knees. The posterior and lateral aspects of the arms, thighs, dorsum of the hands, lower part of the back, and buttocks are also involved. Ears may not be affected. Additionally, histoid lesions have also been shown to develop alongside cutaneous nerves and peripheral nerve trunks (Manoharan et al 2008).

Samiey et al (2021) reported a case of 37 years old male from India who presented with multiple asymptomatic, rubbery, erythematous to skin colored papules and nodules over abdomen, arms, thighs and ears, which were present since 1 year. Associated features were episcleral injection and mild loss of sensation. Based on Fite-faraco staining and histopathological findings, a final diagnosis of denovo histoid leprosy was made (Samiey et al 2021).

Clinically xanthomas, neurofibroma, dermatofibroma, reticulohistiocytosis and cutaneous metastasis, can all resemble histoid leprosy. Based on their distinctive histology, lack of lepra bacilli on slit skin smears and nerve thickening, each of them can be differentiated from histoid leprosy.

Acid-fast bacilli are common in the slit skin smears from histoid lesions and can be found in clusters, singles or closely packed in macrophages. These on comparison to typical lepra bacilli, are longer and have tapering ends. Both the bacillary and morphological indices may be very high, ranging from 5+ to 6+. It has been hypothesized that this high bacillary load is due to focal loss of immunity (Manoharan et al 2008).

Epidermal atrophy caused by the underlying leproma's dermal expansion and a grenz zone that lies directly below the epidermis are the classical histopathological findings. Fusiform histiocytes are arranged in a whorled, criss-cross or storiform pattern. Given that the histiocytes resemble fibroblasts, it has been hypothesized that tissue histiocytes, rather than blood monocytes, may have given birth to macrophages that resemble fibroblasts. An abundance of acid-fast bacilli may be found inside these histiocytes. Since they don't produce any glial material, the AFB are not found seen in globi formation. Compared to ordinary lepra bacilli, these are longer and arranged in

parallel fashion, along the long axis of histiocytes. Wade refers to islands of tuberculoid granulomas as 'contaminating tuberculoid bacilli', present in histiocytoid granulomas. The Fernandez- Mitsuda reaction is negative (Canuto et al 2018).

Rifampicin 600 mg, Ofloxacin 400 mg, and Minocycline 200 mg, first administered once, followed by WHO MB-MDT therapy has been used earlier (Annigeri et al 2007).

Denovo histoid leprosy has been reported previously. The details of the previously reported cases are summarized in Table 1. Slit-skin smear from normal skin was negative in our case, similar findings have been reported by others (Raheja et al 2022, Samiey et al 2021, Murthy et al 2020, Pandey et al 2015, Kantaria 2014, Vora et al 2014, Dimri et al 2012, Nair et al 2006). Further, we did not find any nerve thickening in our case, similar findings have been reported by Dimri et al (2012).

### Conclusion and way forward

We present here this case of a 40-year-old male with asymptomatic skin lesions only and no other associated features. A high index of suspicion, AFB staining and histopathological examination helped in making a diagnosis. Hence histopathological examination should be done in suspected individuals, whenever possible, as it is an important tool for early diagnosis.

These patients can serve as a possible reservoir for infection due to the high bacillary load they have. To continue the monitoring for new and relapse cases, throughout this stage of National Leprosy Eradication Program, rather than waiting for voluntary reporting, a high index of suspicion is required. To successfully eradicate leprosy, early diagnosis and complete treatment are crucial.

### References

1. Annigeri SR, Metgud SC, Patel JR (2007). Lepromatous leprosy of histoid type: A case report. *Indian J Med Microbiol.* **25**: 70–71.
2. Canuto M, Yacoub C, Trindade M et al (2018). Histoid leprosy: clinical and histopathological analysis of patients in follow-up in University Clinical Hospital of endemic country. *Int J Dermatol.* **57**: 707–712.
3. Dhatarwal N, Sharma R, Divyashree R (2023). Histoid leprosy presenting with borderline tuberculoid leprosy in type 1 reaction: An uncommon shift of spectrum. *Indian J Lepr.* **95**: 65-71.
4. Dimri D, Sethi B, Kumar Y (2012). De novo histoid leprosy in an elderly: A case report and review of the literature. *Case Rep Pathol.* **2012**: 219421.
5. Kantaria SM (2014). De novo histoid leprosy. *Indian Dermatol Online J.* **5**: 556-558.
6. Manoharan R, Madhu R, Srinivasan MS (2008). Histoid Hansen - A case report. *J Indian Soc Tele Dermatol.* **2**: 12–16.
7. Murthy SV, Rao SM, Thejaswini et al (2011). De-novo histoid leprosy. *J Lab Physicians.* **3**: 110-112.
8. Nair SP, Moorthy KP, Suprakashan S et al (2006). Histoid leprosy – unusual presentation. *Int J Dermatol.* **45**: 433-434.
9. Panda AK, Chinmoy R, Debata I et al (2022). De-novo histoid leprosy masquerading as lupus miliaris disseminatus faciei: A unique presentation. *Indian Dermatol Online J.* **13**: 414-416.
10. Pandey P, Suresh MS, Dey VK (2015). De novo histoid leprosy. *Indian J Dermatol.* **60**: 525.
11. Raheja A, Kapoor A, Deora MS et al (2022). De-novo histoid leprosy: A series of four cases. *Indian J Lepr.* **94**: 257-262.
12. Samiey F, Aljalalma J, Al Awadhi A (2021). De novo histoid leprosy with unusual histological features. *Cureus.* **13**: e19230.

13. Sehgal VN, Srivastava G (1985). Histoid leprosy. *Int J Dermatol.* **24**: 286-292.
14. Sengupta U (2018). Elimination of leprosy in India: An analysis. *Indian J Dermatol Venereol Leprol.* **84**: 131-136.
15. Vora RV, Pilani AP, Mehta MJ et al (2014). De-novo histoid hansen cases. *J Glob Infect Dis.* **6**: 19-22.
16. Wade HW (1963). The histoid variety of lepromatous leprosy. *Int J Lepr.* **31**: 129-142.

**How to cite this article :** Siddiqui MA (2024). De-novo Histoid Leprosy: A Case Report and a Review of Literature. *Indian J Lepr.* **96**: 163-170.