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Case Report

A case of De-Novo histoid leprosy with keloid-like nodules

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Abstract Histoid leprosy is a kind of lepromatous leprosy known as multibacillary leprosy. De novo histoid leprosy is the formation of histoid lesions without the presence of Hansen's disease. We present the case of a 25-year-old male who had erythematous nodules in the dorsum nasi and frontal regions that resembled keloids for 11 months. The presence of peripheral nerve thickening, mycobacterium leprae on a slit skin smear, and specific histological features aid in the diagnosis of histoid leprosy, and these indicators should be examined to distinguish these two disorders. The patient was treated with *multidrug therapy* and gave good results.

Key words
De-Novo; Histoid leprosy; Keloid.

Introduction

Histoid leprosy is a subtype of multibacillary leprosy, which is a rare kind of lepromatous leprosy. Histoid leprosy can develop as a result of medication resistance to diamino diphenyl sulfone (DDS) or it can develop from scratch in patients who have never had anti-leprosy therapy. Borderline and indeterminate leprosy may occasionally present with histoid lesions. Clinically, the lesions show as hard, erythematous, shiny, smooth, round to oval nodules with normal-looking surrounding skin on the face, back, buttocks, and extremities, as well as bony prominences that might mimic other skin conditions, leading to a misdiagnosis.[1] We present the case of a 25-year-old man with de-novo histoid leprosy with a keloid-like nodule. The diagnosis is made based on anamnesis, clinical examination, and supporting examinations.

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Case report

A 25-year-old male arrived with complaints that a lump appeared on his face 11 months ago, initially, it was just a skin-colored nodule located on the nose, which progressively increased and became pink in color. There were no complaints of pain or itching. The patient complained of hypoesthesia in the lesion. There was no history of the nodule bleeding easily. There was a history of trauma was denied. History of therapy with intralesional injection of triamcinolone acetonide four times a week but it showed no change. History of drug consumption before the lesions appeared was denied. A previous history of leprosy was denied. Allergy history denied. The history of the same complaint in the family was denied. Dermatological status in the dorsum nasi region showed nodule efflorescence with firm boundaries, erythema, shiny, round to oval in group and confluent to form erythema plaques, as well as in the frontal region, the right palpebral region obtained papular efflorescence

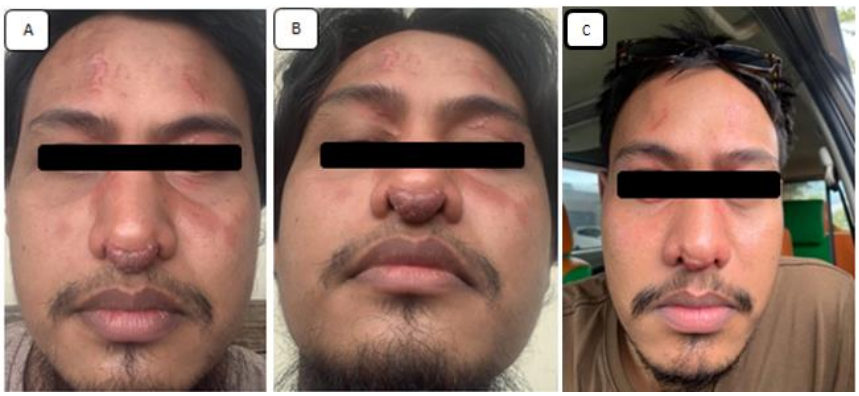

Figure 1 AB: Region dorsum nasi with well-defined nodule efflorescence, hyperpigmentation, frontal region, palpebrae dextra et sinistra efflorescence papules and oval-shaped nodules, multiple erythemas. C: clinical picture after 12 weeks of treatment there is clinical improvement.

and oval-shaped nodules, multiple erythemas **(Figure 1)**.

Examination of sensibility in erythema nodules gave results, namely reduced sensation of fine touch accompanied by a decreased sensation of rough touch, pressure, temperature, and pain in the lesions examined by comparing them with the surrounding healthy skin (with the condition of the patient opening and closing his eyes) whereas other lesions were normal. No deformity was found in the patient. There was palpable thickening of the left auricular Magnus nerve and left supraorbital.

Slit skin smear microscopic examination found AFB with BI: 1.3 + MI: 40.08%. On anatomical or histological pathological examination, an impression of histoid leprosy was obtained with a microscopic appearance of an atrophic epidermis, in the dermis there were spindle-core historic cells that were solidly arranged resembling a neoplastic, granulomas following the adnexa of the skin and nerves. *Faraco fite* staining found many relatively long bacilli **(Figure 2)**.

The patient was diagnosed with histoid leprosy with lesions resembling keloid nodules and was given combination therapy in the form of Rifampicin, Ofloxacin, and Minocycline (ROM) at a dose of 40 times, 3 times per week for 3 months where Rifampicin 600 mg per 24 hours orally, Ofloxacin 400 mg per 24 hours orally, Minocycline 100 mg per 24 hours orally and planned for AFB control after 3 months of treatment.

At the 12th week of control, there were no complaints of swelling on the face, the size of the lesion had decreased, it was no longer painful, and the redness began to decrease (**Figure 3**). In the repeat BTA control, it has shown negative results.

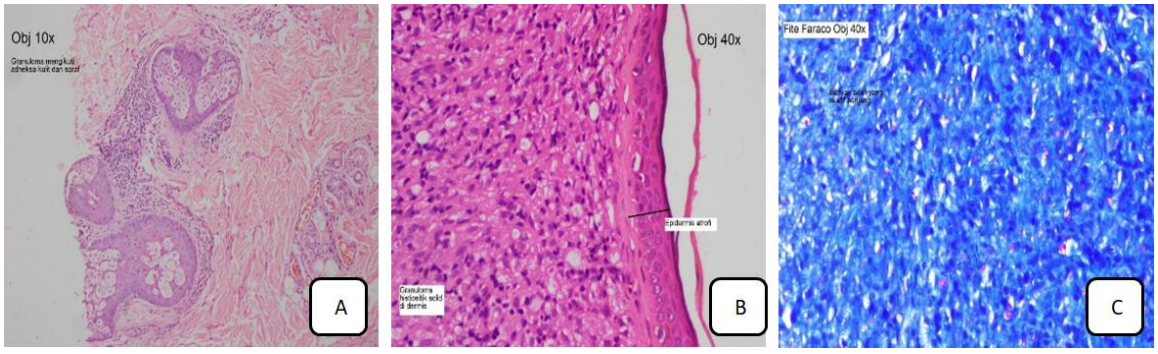

Figure 2 A: Granuloma following the adnexa of the skin and nerves, B: Solid histiocytic granuloma in the dermis, C: Many relatively long bacilli on Faraco fite staining.

Discussion

Histoid leprosy is a form of multibacillary leprosy, which is a subtype of lepromatous leprosy. According to the WHO, multibacillary leprosy is defined as having more than five skin lesions, nerve involvement (pure neuritis or multiple skin lesions and neuritis), or the presence of bacilli on a slit skin smear.[1,12] Histoid leprosy occurs due to the development of drug resistance to diamino diphenyl sulfone (DDS) or dapsone, which usually occurs in patients taking diamino diphenylsulfone (DDS) for a long time, reflects initial improvement but is followed by relapse. However, it is now recognized that the disease can occur de novo in patients who have not been previously exposed to anti-leprosy therapy.[1,5]

The lesions of de novo histoid leprosy are firm, erythematous, shiny, smooth, hemispherical, round to oval nodules with normal-looking surrounding skin on the face, back, buttocks, extremities, and bony prominences. They have a distinct centrofacial distribution when localized to the face. When there are many nodules, they have a symmetric distribution and may be clustered. Lesions may seem secluded or ulcerated on occasion. Nodules in the skin might be superficial, deeper, or subcutaneous. Histoid leprosy is distinguished clinically by the presence of keloid-like, normochromic, or erythematous papules, plaques, or nodules measuring 1.5 to 3 cm in size. Skin plaques are sometimes confused with keloids. Histoid leprosy, on the other hand, is less sensitive, and staining reveals the presence of many acid-fast bacilli.[1,4,7-9,13]

The patient's slit skin smear microscopic analysis revealed AFB with BI: 1.3 + MI: 40.08%. A substantial load of bacilli is detected in the histoid lesions in the slit skin smear (SSS), and the acid-fast bacilli are longer, grouped in parallel clusters or bundles in spindle-shaped histocytes than bacilli in typical leprosy.[5] On histological examination, the histoid impression of leprosy was obtained with a microscopic appearance of an atrophic epidermis, in the dermis there were spindle-core historic cells that were solidly arranged resembling a neoplastic, granulomas following the adnexa of the skin and nerves. *Faraco fite* staining found many relatively long bacilli. Histological features of histoid leprosy are characterized by epidermal atrophy, subepidermal zona Grenz, and dermis showing sheets of cells mostly spindle-shaped with nuclear pyknosis and foamy, vacuolated, cytoplasm arranged in a storiform pattern. Occasionally, large numbers of acid-fast bacilli are seen in active lesions. Lepromas are well-defined regions in the dermis composed of spindle-shaped histiocytes grouped in a braided, circular, or storiform pattern and surrounded by a pseudo capsule. The presence of AFB in a skin biopsy specimen stained with the Fite-Faraco stain aids in the diagnosis.[1,2,8]

Patients were given combination therapy in the form of Rifampicin, Ofloxacin, and Minocycline (ROM) at a dose of 40 times, 3 times per week for 3 months where Rifampicin 600 mg per 24 hours orally, Ofloxacin 400 mg per 24 hours orally, Minocycline 100 mg per 24 hours orally. As more effective treatment techniques for MB leprosy develop, the same protocol can be applied to histoid leprosy; however, some doctors propose ROM therapy to precede MB-MDT in patients with a high initial BI to rapidly lower the bacterial load. Research on the effectiveness of ROM as an anti-leprosy in 8 research studies, showed clinical improvement, although the effectiveness was different in each study. Another study compared the efficacy of ROM to MDT using a retrospective cohort analysis of medical data from MB-type leprosy patients who underwent either ROM or MDT regimens for 12 months (12 doses). The

effectiveness of therapy was discovered in both groups (ROM and MDT) in this study. Both have a drop in morphological index (MI). The ROM regimen, on the other hand, is more important than MDT. Histoid leprosy was initially treated with ROM treatment (Rifampicin 600 mg, Ofloxacin 400 mg, Minocycline 200 mg) once, followed by MB-MDT for two years, according to other studies. Slit Skin Smear should be redone after one year of MDT MB if it displays long, slender, thick bacilli with tapering ends and is not responding clinically. Then, for another year, MB MDT should be administered until the SSS reveals fragmented bacilli and the skin lesions disappeared. Widjaja Y *et al*. reported in their study that the ROM regimen administered three times a week for 12 weeks for MB leprosy patients exhibited considerable clinical improvement.[1,5,10,11,15]

In AFB control patients, after 3 months of treatment, negative results were obtained. The prognosis for histoid leprosy is Dubai ad bonam, some literature says histoid leprosy can be cured if taking medication regularly and completing treatment for two years but can recur again during treatment or after completion of treatment.[1,6]

Conclusion

Histoid leprosy is a multibacillary type that can occur de novo. The manifestations of histoid leprosy can resemble keloids that appear over the surface of normal-looking skin. Management of histoid leprosy with MDT ROM shows a good prognosis.

Declaration of patient consent The authors certify that they have obtained all appropriate patient consent.

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Conflict of interest Authors declared no conflict of interest.

Author's contribution

TUA, KD, SA: Diagnosis and management of the case, manuscript writing, final approval of the version to be published.

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