

Moth-eaten alopecia: A clue to diagnosis of syphilis in a case of macular rash

Sir,

A 24-year-old unmarried yet sexually active male presented with low-grade fever and malaise of 5 days duration and a faint non-itchy rash on trunk and extremities of 2 days duration. The last sexual exposure was 3 months ago with a female acquaintance in form of unprotected peno-vaginal intercourse. The patient also provided a history of an ulcer over the glans penis roughly 2 months ago which healed on taking some oral tablets in the next 4 weeks. The vitals were within normal limits. The general physical examination revealed generalized non-tender lymphadenopathy involving all major groups of peripheral lymph nodes – bilateral cervical, axillary, and inguinal [Figure 1a]. There was a faint erythematous macular rash over the trunk as well as extremities [Figure 1b]. Patchy hair loss was present over bilateral temporal aspect of the scalp suggestive of “moth-eaten alopecia.” With this background, he was suspected to be a case of secondary syphilis and evaluated for it. His venereal disease research laboratory (VDRL) test was strongly positive (1:256); with *Treponema pallidum* hemagglutination (TPHA) of 1:640. Skin biopsy from one of the alopecic patches

revealed perivascular infiltrates [Figure 2a]. On higher magnification, these were identified as lymphoplasmacytic infiltrates with swelling of the endothelial cells [Figure 2b]. Immunohistochemistry (IHC) revealed CD38 positivity confirming the presence of plasma cells consistent with secondary syphilis as the cause for the alopecia [Figure 2c and d]. The patient was treated with single dose of 2.4 million units of intramuscular injection of benzathine penicillin. The rash resolved in a fortnight with fine scaling and lymphadenopathy resolved in 4 weeks. The patient was counseled regarding the cause of alopecia and that hair is certain to regrow and was advised to follow-up every 3 months.

Syphilis is truly a systemic disease mainly affecting the skin, central nervous system (neurosyphilis), heart and major vessels (cardiovascular syphilis), skeletal and subcutaneous tissue (gumma), eyes (ocular syphilis), and



Figure 1: (a) Shows involvement of temporal scalp in form of discrete oval 2–4 mm sized alopecic patches. There is also an enlarged posterior cervical lymph node. (b) Involvement of trunk in form of faint erythematous macular rash

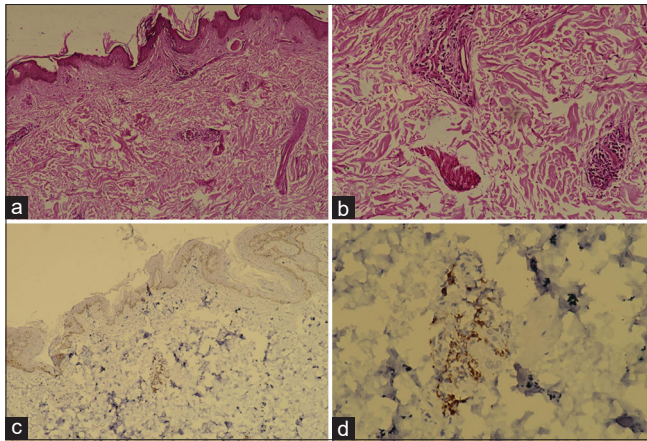


Figure 2: (a) Section of biopsy from alopecic patch shows perivascular infiltrate in the dermis (H and E $\times 10$). (b) On higher magnification, these cells were identified as lymphomononuclear cells as well as plasma cells. Endothelial swelling of the endothelial cells were also noted (H and E $\times 40$). (c and d) IHC revealed CD38 positivity confirming the presence of plasma cells suggesting secondary syphilis as the cause for the alopecia (IHC, CD38 $\times 10$, 40)

ears (otosyphilis).^[1] It is considered a “great mimicker” as it has a wide range of presentation.^[2] The secondary stage is characterized by systemic symptoms of fever, malaise, and bodyache with rash that is usually macular or maculopapular.^[3] However, papular, nodular, necrotic (lues maligna), erythema multiforme-like, lichen planus-like, and pityriasis rosea-like rashes have been reported.^[4] The flexures as well as mucosa may get affected in the form of moist white plaques called as condyloma lata.^[5] Apart from rash, there is generalized nontender lymphadenopathy of all major groups of peripheral lymph nodes. Another group of lymph nodes that must be looked for is the epitrochlear lymph node that although is characteristic but not specific to syphilis.^[6] Infrequently, alopecia may be noticed with rash. It presents as oval to round 2–5 mm sized oval to round alopecic patches and is called as “moth-eaten alopecia” since it looks akin to leaves partly eaten by moths.^[7] The closest differential diagnosis of moth-eaten alopecia is alopecia areata.^[8] Both are patchy asymptomatic non-scarring alopecias; however, positive sexual history recent chancre; rash with systemic symptoms such as fever, malaise, and bodyache; and presence of lymphadenopathy help in differentiating between the two. The histopathology of secondary syphilis shows perivascular and periadnexal lymphoplasmacytic infiltrates with endothelial swelling.^[9] The histopathological as well as IHC findings in our patient were consistent with secondary syphilis. In addition to rash, the presence of lymphadenopathy as well as alopecia of this pattern helped us to narrow our diagnosis to secondary syphilis. It is a useful clinical sign and it must be looked for in cases of secondary syphilis. Since it is a non-scarring alopecia, hair is expected to regrow with a single dose of injection benzathine penicillin. The case is presented for its academic interest and to demonstrate rarely done scalp biopsy showing histopathological and immunohistochemical evidence of secondary syphilis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the parent has given the consent for images and other clinical information to be

reported in the journal. The parent understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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