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Early-Onset Lichen Plano Pilaris: A Case of Cicatricial Alopecia in an Adolescent Female

1MADDU GIRIJA BHAVANI, 2KANUMURI.MAHITHA, 3ALLA.ESWAR SATYA SAI, 4RAMAVATH SAI KUMAR NAIK, 5MATTA PURNA RAJEENA

1PHARM.D , 2PHARM.D , 3PHARM.D , 4PHARM.D , 5PHARM.D

1ADITYA COLLEGE OF PHARMACY,

2ADITYA COLLEGE OF PHARMACY,

3ADITYA COLLEGE OF PHARMACY,

4ADITYA COLLEGE OF PHARMACY,

5ADITYA COLLEGE OF PHARMACY

Abstract:

Lichen plano pilaris (LPP) is a rare inflammatory disorder characterized by lymphocytic destruction of hair follicles leading to cicatricial alopecia and permanent hair loss. We report a case of a 14-year-old female who presented with progressive hair loss, pruritus, and hyperpigmented lesions over the scalp and multiple body sites. Clinical examination revealed patchy alopecia with perifollicular erythema and scaling, and dermoscopic findings suggested scarring alopecia. The diagnosis was confirmed by histopathological examination of a scalp biopsy. The patient was managed with a combination of systemic hydroxychloroquine, oral corticosteroids, and immunosuppressants, along with topical therapies and adjunct platelet-rich plasma (PRP). Follow-up showed symptomatic improvement with reduction in itching and stabilization of disease progression; however, residual scarring alopecia persisted. This case highlights the importance of early diagnosis and prompt management to prevent irreversible hair loss and improve patient outcomes in LPP.

KEY WORDS:

Lichen Plano Pilaris, Cicatricial Alopecia, Adolescent, Hair Loss, Biopsy, Hydroxychloroquine.

INTRODUCTION:

Lichen planopilaris (LPP) is a chronic inflammatory disorder of the scalp and a follicular variant of lichen planus, characterized by lymphocytic destruction of hair follicles resulting in cicatricial (scarring) alopecia and permanent hair loss.(1,2) It is classified under primary lymphocytic cicatricial alopecias and predominantly affects middle-aged women, with relatively rare occurrence in the pediatric and adolescent population.(1,3)The exact etiology remains unclear; however, an autoimmune mechanism directed against follicular keratinocytes is strongly implicated in its pathogenesis.(2,4)

Clinically, LPP presents with patchy hair loss accompanied by perifollicular erythema, scaling, and symptoms such as pruritus, burning, or pain.(2,5) Dermoscopic features commonly include perifollicular scaling, absence of follicular openings, and whitish areas indicating fibrosis. (4)Histopathological examination remains the gold standard for diagnosis, demonstrating perifollicular lymphocytic infiltrate, interface dermatitis, and progressive follicular destruction.(3)

Management of LPP is often challenging and primarily aims at halting disease progression and controlling symptoms, as hair regrowth in scarred areas is usually not achievable.(1,5) Therapeutic options include topical and systemic corticosteroids, antimalarials such as hydroxychloroquine, and immunosuppressive agents like azathioprine.(2,5) Early diagnosis and prompt initiation of therapy are essential to prevent irreversible alopecia and improve patient outcomes.(1)

Case Presentation

A 14-year-old female presented to the dermatology outpatient department with complaints of progressive hair loss over the scalp accompanied by persistent pruritus for a duration of several months. The condition was insidious in onset and showed gradual progression over time. The patient also reported the development of hyperpigmented lesions over the groin and thigh regions, which were associated with mild itching but no pain or discharge. There was no history of fever, weight loss, or other systemic complaints. The patient had no prior history of dermatological disorders, autoimmune diseases, or significant medical or surgical illness, and she was not on any long-term medications. There was no family history of similar complaints. The cosmetic disfigurement due to hair loss had a notable psychological impact on the patient, affecting her self-esteem and daily social interactions.

On general physical examination, the patient was conscious, cooperative, and well-oriented, with stable vital parameters. Dermatological examination of the scalp revealed multiple irregular, patchy areas of alopecia predominantly involving the vertex region. The affected areas showed perifollicular erythema, scaling, and absence of visible follicular openings, which are characteristic features of cicatricial alopecia. A hair pull test was suggestive of active disease at the margins. Cutaneous examination revealed well-demarcated hyperpigmented plaques over the groin and medial aspects of the thighs. Dermoscopic evaluation of the scalp demonstrated perifollicular scaling, perifollicular hyperkeratosis, absence of follicular ostia, and whitish areas indicative of fibrosis. Routine hematological and biochemical investigations were within normal limits, excluding systemic involvement. A scalp biopsy was performed, and histopathological examination revealed perifollicular lymphocytic infiltrate, basal cell layer degeneration (interface dermatitis), and progressive destruction of hair follicles, thereby confirming the diagnosis of Lichen Plano Pilaris.

The patient was initiated on a comprehensive, multimodal treatment regimen aimed at suppressing inflammation, relieving symptoms, and preventing further follicular damage. Systemic therapy included hydroxychloroquine at a dose of 200 mg once daily, oral corticosteroids (methylprednisolone) administered in tapering doses based on clinical response, and immunosuppressive therapy with azathioprine at a dose of 50 mg once daily. Topical therapy consisted of tacrolimus ointment applied to affected areas and minoxidil solution for scalp application to promote hair growth in viable follicles. Adjunctive measures included antifungal agents, medicated shampoos to maintain scalp hygiene, and platelet-rich plasma (PRP) therapy administered in multiple sessions at regular intervals to enhance follicular stimulation. The patient was closely monitored with regular follow-up visits to assess therapeutic response and detect any adverse drug reactions. Over the course of treatment, there was a significant reduction in pruritus and stabilization of hair loss, with no new lesions observed. However, previously affected areas showed persistent scarring alopecia, indicating irreversible follicular damage. The patient was counseled regarding the chronic and relapsing nature of the disease, the importance of adherence to therapy, and realistic expectations concerning hair regrowth.

Discussion:

Lichen planopilaris (LPP) is a chronic lymphocytic cicatricial alopecia predominantly affecting middle-aged women, and its occurrence in adolescents, as seen in the present case, is relatively uncommon and rarely reported.(1,2) Similar to previously published studies, our patient presented with classical clinical features such as patchy alopecia, perifollicular erythema, scaling, and pruritus, which have been consistently described by Kang et al. and Weston et al.(2,3)Dermoscopic findings observed in this case, including loss of follicular openings and perifollicular scaling, are in agreement with earlier reports that identify these features as markers of active inflammation and fibrosis.(3) Histopathological findings in our patient, including perifollicular lymphocytic infiltrate and follicular destruction, also correlate with findings described by Mirmirani et al., confirming biopsy as the diagnostic gold standard.(4)

In terms of management, our case demonstrated clinical improvement with hydroxychloroquine, corticosteroids, and azathioprine, which aligns with previous studies suggesting hydroxychloroquine as a first-line systemic agent due to its immunomodulatory effects.(2)Chiang et al. reported that approximately 60–70% of patients showed disease stabilization with hydroxychloroquine-based therapy, which is comparable to the response observed in our patient.(5)However, literature also indicates variability in treatment response, with some studies reporting higher efficacy with methotrexate or cyclosporine in refractory cases.Despite these therapeutic options, consistent with earlier reports, our patient showed stabilization of disease activity rather than complete hair regrowth, as scarring leads to irreversible follicular damage.(1)

Overall, the clinical presentation, diagnostic findings, and therapeutic response in this case are comparable with previously reported studies, while the early age of onset makes it a relatively rare presentation. This case further reinforces the importance of early diagnosis and prompt initiation of therapy to prevent permanent alopecia, as emphasized across multiple studies.(1,5)

Conclusion

Lichen planopilaris is a chronic and progressive cicatricial alopecia that can lead to irreversible hair loss if not diagnosed and treated early. This case highlights a rare presentation in an adolescent female, emphasizing the need for increased clinical awareness. Early diagnosis through clinical, dermoscopic, and histopathological evaluation, along with prompt initiation of appropriate therapy, plays a crucial role in halting disease progression. Although complete hair regrowth remains limited due to scarring, a multimodal treatment approach can effectively control symptoms and stabilize the condition. Long-term follow-up and patient counseling are essential for optimal management and improved quality of life.

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