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A rare pediatric case of lichen planus pigmentosus with scalp involvement

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Dear Editor,

Lichen planus pigmentosus (LPP) is a chronic inflammatory dermatosis mainly reported in adults from the Indian subcontinent and the Middle East.¹ Pediatric cases are exceedingly rare, and LPP involving the scalp has not been previously described. Given the paucity of literature on childhood LPP, we present a case that broadens the spectrum of clinical presentations of this disease.

A 6-year-old girl presented with a one-year history of asymptomatic, hyperpigmented macules primarily localized to intertriginous areas and the retroauricular region (Figure 1 A-C). Additionally, she had erythematous, scaly plaques with alopecic areas on the scalp (Figure 1D).

Her medical history was unremarkable except for neonatal bronchiolitis and paternal alopecia. Prior to our evaluation, microscopic and cultural examinations for fungi were performed elsewhere and yielded negative results. Despite this, she was treated with oral griseofulvin without clinical improvement.

Upon presentation, her physical examination revealed no systemic abnormalities. Blood tests showed eosinophilia, mildly elevated cholinesterase levels, and vitamin D deficiency (<10 ng/mL). Viral serology, celiac screening, autoimmune markers, and thyroid function were all normal. However, a throat swab was positive for *Streptococcus pyogenes*, with anti-streptolysin O titers twice the upper limit of normal.

A skin biopsy from both lesional skin and the scalp showed epidermal hyperkeratosis with focal parakeratosis and a dense band-like lymphohistiocytic infiltrate with scattered eosinophils in the dermis, periadnexally, and along the basement membrane. These findings were consistent with lichen planus.² LPP is a rare variant of LP characterized by dark brown or grayish macules, often affecting sun-exposed areas.¹ It has been reported predominantly in individuals with darker skin phototypes, particularly in the Indian and Middle Eastern populations.³ Uncommon variants include LPP inversus, affecting flexural folds, and LPP along Blaschko's lines.²

Although pediatric LP is not uncommon, pediatric LPP is exceedingly rare, with only a few cases reported in the literature.³ The pathogenesis remains unclear, but possible triggers include viral infections, environmental factors, and even mercury-containing dental amalgams.⁴ In our case, the presence of eosinophilia, elevated anti-streptolysin O titers, and positive throat culture for *S. pyogenes* suggests a possible post-infectious immune response as a contributing factor. However, whether streptococcal infection directly triggered the disease remains speculative. Scalp involvement in LPP is an exceptionally rare feature, with no previously documented pediatric cases. The presence of alopecic plaques raised a differential diagnosis including tinea capitis, lichen planopilaris, and post-inflammatory

hyperpigmentation. The absence of fungal elements and histopathological findings confirmed the diagnosis of LPP.

The treatment approach remains empirical, with corticosteroids and calcineurin inhibitors being the mainstay of therapy. Given the potential chronicity of the disease, long-term follow-up is essential.

This case expands the clinical spectrum of LPP by describing an uncommon pediatric presentation with scalp involvement. The association with *S. pyogenes* infection and eosinophilia raises interesting questions regarding potential immune-mediated mechanisms. Further studies are needed to understand the pathogenesis and optimal treatment strategies for this rare disorder.

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Figure 1. Clinical presentation at the first evaluation: **A-C)** asymptomatic, hyperpigmented macules localized to intertriginous areas and the retroauricular region; **D)** erythematous, scaly plaques with alopecic areas on the scalp.

