

## RESEARCH LETTER

### Undiagnosed cicatricial alopecia among new patients undergoing platelet-rich plasma



*To the Editor:* Platelet-rich plasma (PRP) is an effective treatment for pattern hair loss (PHL).<sup>1</sup> However, PRP therapy is costly and carries inherent procedural risks. Preliminary reports of PRP therapy for the treatment of cicatricial (scarring) alopecia suggest that it is safe, but its efficacy remains unclear.<sup>2</sup> Prompt initiation of immunomodulatory therapies in patients with cicatricial alopecia is critical for preventing irreversible hair loss.<sup>3</sup> Therefore, comprehensive evaluations should be performed before starting PRP treatment in new patients to rule out cicatricial disease. However, the lax scope of practice regulations opens the possibility of inadequately trained personnel missing a diagnosis of cicatricial alopecia in patients undergoing PRP treatment. We evaluated the incidence of cicatricial alopecia among new PRP patients to characterize this potential risk.

Our study was approved by the Mass General Brigham IRB. A retrospective review of new patients between January 2018 and January 2021 was performed. A total of 173 patients (103 women) with a mean age of 49.7 (range, 18-80) were included (Table I). A total of 121 (69.9%) patients reported current use of at least one treatment for presumed PHL at the time of presentation, including topical minoxidil (42.2%), photobiomodulation (17.3%), and spironolactone (15.6%). Most patients had never received a scalp biopsy (94.8%) or undergone PRP therapy (93.1%).

On clinical examination, including trichoscopic evaluation, 18 (10.4%) patients were noted to have mild to moderate perifollicular scale, erythema, or both. Two patients with perifollicular findings had a history of biopsy-proven cicatricial alopecia. Scalp biopsy was recommended for 16 (9.2%) patients due to signs of inflammation and 2 (1.2%) patients declined biopsy due to personal preferences. Of the 14 (8.1%) that underwent biopsy, 11 (6.4%) were diagnosed with a primary lymphocytic cicatricial alopecia and the remaining 3 were diagnosed with PHL. Men with lichen planopilaris (LPP) accounted for 27.3% of all new cicatricial diagnoses. All (n = 11)

**Table I.** Demographics, clinical presentation, and diagnostic outcomes of new alopecia patients presenting for platelet rich plasma treatment

Category	(N = 173)
Age	
Mean $\pm$ SD	49.7 $\pm$ 16.3
Range	18-80
Race, ethnicity, or origin, n (%)	
Asian or Pacific Islander	12 (6.9%)
Black or African American	4 (2.3%)
Hispanic or Latinx	9 (5.2%)
Middle Eastern or North African	16 (9.2%)
White, Non-Hispanic	130 (75.1%)
Other	2 (1.2%)
Gender identity, n (%)	
Woman	103 (59.5%)
Man	70 (40.5%)
Transgender, genderqueer, or gender non-binary	0 (0.0%)
Alopecia treatment at presentation, n (%)	
Prior PRP treatment	12 (6.9%)
At least one treatment	121 (69.9%)
Topical minoxidil	73 (42.2%)
Photobiomodulation (low-level-laser-light therapy)	30 (17.3%)
Oral 5- $\alpha$ -reductase inhibitor	27 (15.6%)
Oral spironolactone	27 (15.6%)
Ketoconazole shampoo	14 (8.1%)
Trichoscopic exam findings, n (%)	
Perifollicular scale	
Grade 1 (visible with magnification only)	13 (7.5%)
Grade 2 (visible without magnification)	3 (1.7%)
Grade 3 (confluent scale visible without magnification)	0 (0.0%)
Perifollicular erythema	
Grade 1 (visible with magnification only)	9 (5.2%)
Grade 2 (visible without magnification)	6 (3.5%)
Grade 3 (confluent erythema visible without magnification)	0 (0.0%)
Unique patients with at least one sign of scalp inflammation	18 (10.4%)
Scalp biopsy, n (%)	
Recommended scalp biopsy during initial procedure visit	16 (9.2%)
Completed recommended biopsy	14 (8.1%)
Number undergoing scalp biopsy referred by dermatology	3 (1.73%)

Continued

**Table I.** Cont'd

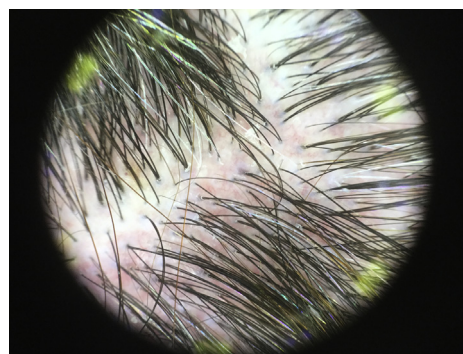
Category	(N = 173)
Biopsy outcome, n (%)	
Primary lymphocytic cicatricial alopecia	11 (6.4%)
LPP/FFA	10 (5.8%)
Women with LPP/FFA	7 (4.0%)
Men with LPP/FFA	3 (1.7%)
CCCA	1 (0.6%)
Women with CCCA	1 (0.6%)
Men with CCCA	0 (0.0%)
Pattern hair loss (androgenetic alopecia, female pattern hair loss)	3 (1.7%)
Women with female pattern hair loss	2 (1.2%)
Men with androgenetic alopecia	1 (0.6%)

CCCA, Central centrifugal cicatricial alopecia; FFA, frontal fibrosing alopecia; LPP, lichen planopilaris; PRP, platelet-rich plasma.

of those who received a new cicatricial diagnosis were started on medical therapy and 8 continued with PRP after starting medical therapy for concomitant PHL. Of those who underwent PRP, 3 demonstrated clinical improvement and 5 demonstrated stable hair density after investigator assessment of scalp photography. All patients (n = 8) reported transient discomfort during the procedure. No other adverse events occurred.

We report that nearly 1 in 15 (6.4%) of new patients presenting to our clinic for PRP had undiagnosed cicatricial alopecia. Cicatricial alopecia can have a similar presentation to PHL. Signs of scalp inflammation, including perifollicular scale and erythema, can be subtle (Fig 1) and may indicate the need for a scalp biopsy. The proportion of men with LPP was greater than expected and may be due to increasing incidence, greater diagnostic sensitivity, or both.<sup>4</sup> Our findings demonstrate that clinical evaluation, including trichoscopy, by a trained dermatologist before PRP treatment can help optimize outcomes through the correct identification and treatment of cicatricial disease if present. While safety and efficacy were not evaluated as study endpoints, we report that PRP did not worsen hair density in those with LPP, which is consistent with previous findings.<sup>2</sup>

Patients with undiagnosed cicatricial alopecia undergoing serial PRP monotherapy from non-trained personnel may assume that they are receiving appropriate care. Consequently, these patients fail to receive the counseling required to make an informed medical decision and risk progressive irreversible hair loss from inadequate treatment. Our study



**Fig 1.** Lichen planopilaris (LPP) on trichoscopic examination. Fine scale and faint erythema can be seen circumferentially at the base of several hair follicles on trichoscopy in a patient presenting for platelet-rich plasma for the treatment of presumed pattern hair loss. These perifollicular findings are subtle and indicate need for scalp biopsy.

highlights the potential risk that non-trained personnel pose to patients receiving PRP treatment. Future directions include reforming the scope of practice regulations to prioritize patient safety.

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#### **Conflicts of interest**

None disclosed.

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