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A Study of Dermatoscopic Findings in Primary Cicatricial Alopecia in a Tertiary Healthcare Centre in Western Uttar Pradesh

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Abstract: ***Introduction: Cicatricial alopecia is a rare group of hair loss diseases which is characterized by the destruction of hair follicles and healed with scar tissue. This condition leads to permanent hair loss in the affected areas, as the damaged follicles are unable to regenerate. Objectives: The aim of study aims to assess the clinical and dermatoscopic characteristics observed in patients with cicatricial alopecia and highlight key features that facilitate accurate diagnosis to know the potential benefit of handheld dermatoscope. Methods: This is a cross-sectional observational study done in sixty five patients and diagnosis were established clinically and dermatoscopically. Trichoscopic examination was done by using a polarized-light dermatoscope with 10X magnification. Results: Sixty-five patients of primary alopecia were diagnosed on the basis of detailed history, clinical examination and dermatoscopic findings. The common findings are perifollicular scaling, white to yellow fibrotic areas and dots, arborising vessels, brown pigmentation and epidermal hyperplasia. Conclusion: Dermatoscopy can be a valuable tool in early diagnosis and treatment. Among the various trichoscopics findings, those of diagnostic value were identified.***

Keywords: Alopecia, Dermatoscopy, Primary cicatricial alopecia, Trichoscopy, Handheld dermatoscope, Secondary alopecia

1. Introduction

Cicatricial alopecia, is a group of rare hair loss diseases which characterized by the destruction of hair follicles and healed with scar tissue. This also known as scarring alopecia. This condition leads to permanent hair loss in the affected areas, as the damaged follicles are unable to regenerate. Cicatricial alopecia may result from various underlying causes, including inflammatory diseases, infections, and autoimmune disorders. It typically presents with scalp redness, itching, and the formation of scaling or pustules, although symptoms may vary depending on the type.It can be either due to Primary cause affecting the follicles or by an external process (Secondary Alopecia). The most common of primary cicatricial alopecia includes Lichen planopilaris, Chronic cutaneous lupus erythematosus, Pseudopelade of Brocq in the descending order of frequency. Other rare causes include Central centrifugal cicatricial alopecia, Alopecia mucinosa, Keratosis pilaris, spinulosa decalvans, Folliculitis decalvans, Dissecting cellulitis, Acne keloidalis, Erosive pustular dermatosis, Frontal fibrosing alopecia and non- specific end stage cicatricial alopecia. Secondary causes of cicatricial alopecia may be following trauma, secondary to sclerosing disorders, granulomatous condition, neoplasm, developmental defects, hereditary disorders and infections like Cutaneous Tuberculosis etc.

2. Methods

This cross-sectional observational study conducted over two years at the Dermatology Department of SIMS, Hapur. Sixty five patients with primary scarring alopecia. In all, sixty five patients diagnosis were established clinically and dermatoscopically. Trichoscopic examination was done by using a polarized-light dermatoscope with 10X magnification. The photos were taken using the Dermalite5 dematoscope and various features—including perifollicular erythema, scaling, white patches, arborizing vessels, and pigment alterations—were analyzed.

Inclusion Criteria:

- Age -18 to 50 years
- Patients ready to undergo study and given informed written consent

Exclusion Criteria:

- Patient with cicatricial alopecia who have been treated with Topical & Systemic drugs within 6weeks duration
- Patient with cicatricial alopecia who have been undergone Hair Transplant
- Patient with non-cicatricial alopecia
- Patient presenting with combination of cicatricial and non-cicatricial alopecia
- Patient presenting with infective pathology of scalp

3. Results

The findings were significantly common and noted, in specific types of primary cicatricial alopecias: Violaceous patches of scarring alopecia with perifollicular scaling, white area with perifollicular cast in lichen planopilaris (n = 22); short vellus hairs,crust, tufted hairs, tubular scaling, follicular pustule, red dots in folliculitis decalvans (n = 7); the large keratotic yellow dots is in discoid lupus erythematosus (n = 12); yellow dots, black dots in dissecting cellulitis of the scalp (n = 2), Systemic lupus erythematous (n=2) , Acne keloidalis nuchae (n= 5), Frontal fibrosing alopecia (n= 5), Pseudopalade of Brocq (n=2) and Non specific alopecia

(n=2). There were no vellus hairs observed in the patients with classic lichen planopilaris, pseudopalade of brocq, frontal fibrosing alopecia, folliculitis decalvans and chronic discoid lupus erythematosus.

4. Conclusion

Primary cicatricial alopecia (PCA) is a group of disorders leading to permanent hair loss due to inflammation of hair follicles, which are replaced by fibrosis. This condition accounts for about 7.3% of all hair loss cases. In the current study, 65 patients were analyzed, with 92% having Primary PCA and 8% Secondary PCA, showing a 4:1 ratio of Primary to Secondary cases, consistent with earlier studies.

The age of patients in this study ranged from 18 TO 50 years, with the majority (30%) falling between 31-40 years. Disease onset was gradual in 96% of patients, and the average duration of the disease was 3.96 years. The most common etiology in this study was Lichen Planopilaris (LPP), followed by Discoid Lupus Erythematosus (DLE).

The study highlights the importance of dermatoscopy as a non-invasive diagnostic tool, with characteristic features such as decreased hair density and loss of follicular openings being observed in PCA cases. LPP showed peri-pilar casts and blue-grey
discoloration, while DLE showed arborizing and linear blood vessels. These findings were statistically significant, aligning with previous studies.

Histopathological examination revealed that 98% of PCA cases in this study were lymphocytic-mediated, with only 2% being neutrophilic or mixed. This differs from previous studies where a larger proportion was neutrophilic-mediated, possibly due to the study's limited duration and ethnic variations.

Secondary cicatricial alopecia, though less common, was linked to causes like trauma, radiation, scalp tumors, and lipoid proteinosis. Dermatoscopy in secondary cases also showed features like absent follicular openings and epidermal atrophy, although the number of secondary PCA cases was too small for definitive conclusions.

In conclusion, dermatoscopy proves to be a helpful screening tool for PCA.The study highlights the importance of early diagnosis to halt disease progression, as cicatricial alopecia can be indolent and progressive

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