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Dear Doctor,

Greetings from Micro Labs. We are happy to bring you "COSMODERM TIMES" which contains latest and interesting news in the field of Dermatology.

This issue contains:

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Best Regards,

Medical Team, Micro Labs Limited



The Impact of Pediatric Alopecia Areata on Patients' and Their Families' Quality of Life: A Nationwide Multicenter Questionnaire Study

Introduction

Alopecia areata (AA) is an immune-mediated hair loss disorder characterized by non-scarring hair loss. The severity of AA is determined by the extent of scalp hair loss. ^[1] Although not a life-threatening condition, moderate to severe AA reduces health-related quality of life (QoL) and is linked to psychological disorders such as depression and anxiety. ^[2] Pediatric AA is one of the most common types of hair loss in children, but treatment remains difficult. Mild pediatric AA has a good prognosis, but extensive pediatric AA, such as alopecia totalis and alopecia universalis, does not respond well to conventional treatment and has a significant impact on patients' quality of life. ^[3] This is a multicenter, prospective study to determine QoL in pediatric patients with AA and their family members. The study also looked into the efficacy and satisfaction of previous AA treatment, as well as the treatment's economic and time burden on patients and their families. Furthermore, the study assessed the impact of accompanied disease with pediatric AA on QoL.

Methods

This nationwide multicenter questionnaire study included AA patients aged 5 to 18 years. The modified Children's Dermatology Life Quality Index (CDLQI) and the modified Dermatitis Family Impact Scale were completed by enrolled patients and their parents (mDFI). The Severity of Alopecia Tool (SALT) survey scores were used to assess disease severity.

Results

This study included 268 patients with AA from 22 different hospitals. The efficacy and satisfaction with previous AA treatments decreased as the severity of the disease increased, according to this study. The use of home-based therapies and traditional medicines increased with the severity of the disease, but patients reported limited efficacy. Patients with extensive AA had higher CDLQI and mDFI scores than those with mild to moderate AA. As the disease's severity increased, so did the financial and time burden on family members.

Discussion:

Two-thirds of pediatric AA patients in the study had chronic courses with a disease duration of more than a year, and one in every five patients also had atopic dermatitis. Atopic dermatitis is a common comorbidity of AA that directly affects patients' QoL due to chronic itching; patients' QoL was expected to be impaired when atopic dermatitis was accompanied by AA. ^[4]



The CDLQI questionnaire completed by patients was found to be positively correlated with disease severity, similar to atopic dermatitis and psoriasis. [5] According to the study, the number and types of attempted treatments, as well as adverse effects, increased with the severity of AA, but satisfaction levels decreased. Immunotherapy was found to be the most effective and satisfactory treatment for severe pediatric AA. Topical immunotherapy plays a role in AA hair regrowth by modulating T-cell-mediated mechanisms via allergic contact dermatitis.

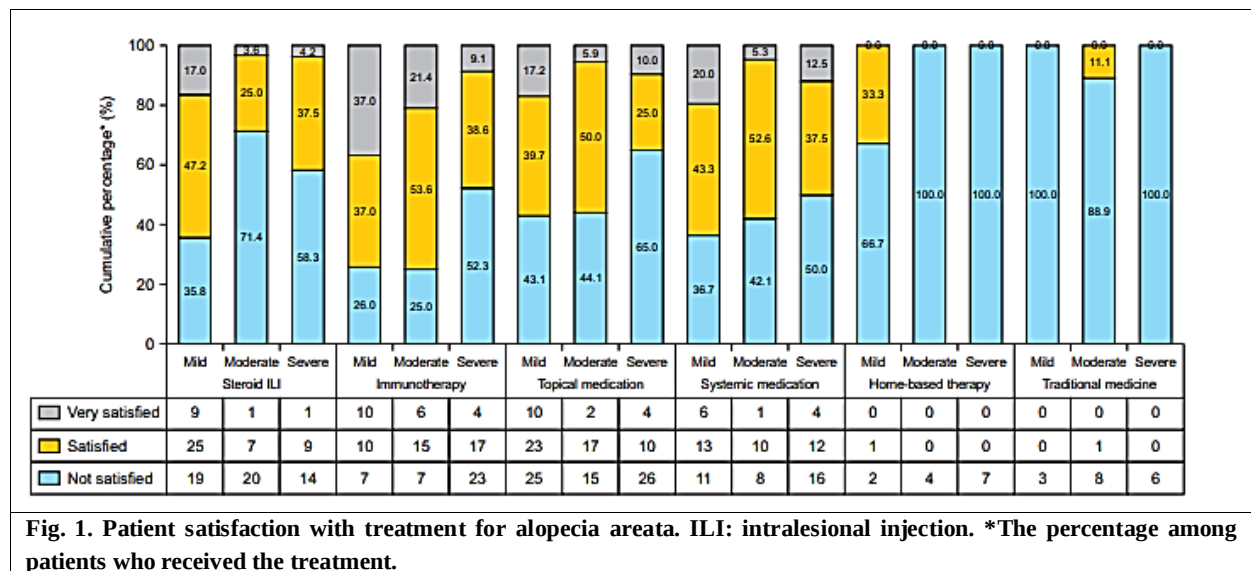


Fig. 1. Patient satisfaction with treatment for alopecia areata. ILI: intralesional injection. *The percentage among patients who received the treatment.

Since childhood and adolescence are critical periods for self-image, patients with AA may suffer more than those with atopic dermatitis and psoriasis because hair loss is visible right away. Furthermore, for adolescents, AA is about more than "just hair," as it affects their identity and societal connections; thus, physicians must pay closer attention. [6]

There are effective treatments for psoriasis, such as biologics, but there are currently no effective treatments for AA. As a result, AA has a lower cost-effectiveness than other skin diseases, which can be one of the major factors affecting family members' QoL. The total time spent on AA treatment and the number of hospital visits increased with the severity of AA. Because immunotherapy typically requires a weekly visit to the hospital, the time burden is higher than for other skin diseases, affecting not only the time of children but also the work hours of family members.

Conclusion:

In conclusion, pediatric AA has a significant impact on the QoL of both patients and family members. The treatment responses, as well as the economic and time burden, are related to the severity of the disease and may be a factor influencing QoL. This result is particularly related to the severity of the disease. As a result, physicians should provide appropriate information to their patients and family members, as well as emotional support. If necessary, physicians should recommend psychological interventions to their patients, with the assistance of psychologists and other trained mental health professionals.



The severity of the AA is directly proportional to the burden and indirectly proportional to the QoL of patients and their family members. Physicians must understand the characteristics of pediatric AA in order to provide appropriate treatment to patients and their families.

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A Prospective Study of the Application of the Microneedle Fractional Radiofrequency System in the Treatment of Infraorbital Dark Circles

Introduction

Infraorbital dark circles (IDC) are bilateral semi-circular hyperpigmentation in the infraorbital region. ^[1,2] According to the primary cause of pathogenesis, IDC is classified as pigmented, vascular, structural, or mixed. The IDC clinical type is commonly used to determine the treatment strategy. For pigmented IDC, for example, therapeutic options include topical depigmenting agents, chemical peels, surgical corrections, and laser therapy aimed at treating hyperpigmentation. However, because the mixed type accounts for the vast majority of IDC, multiple therapeutic modalities are usually required. While such a strategy takes time and money, it also has potential risks.

Monopolar radiofrequency has been shown to improve periorbital skin laxity and wrinkles, which are common contributing factors to structural IDC. An MFR system has been used to treat photoaging, acne vulgaris, and scarring by delivering radiofrequency energy through a fractional microneedle electrode assembly with adjustable length. Recent research has shown that it can be used to treat hyperpigmentation, erythema, vascular malformations, and lipolysis. ^[3,4]

Methods

A prospective, split-face, evaluator-blind clinical trial was conducted in 21 female patients with mixed type IDC to compare the change in overall appearance, colour, and wrinkles before and after MFR treatment.

Results

Therapeutic Outcomes: Global Improvement of IDC After MFR Treatment: Twenty-one patients completed all three treatment sessions as well as the 6-month follow-up; one patient was excluded due to nasal surgery performed during the study. PAIS was self-evaluated, and GAIS was evaluated by two independent physicians using digital photos. These two scales exhibited strong correlations. After MFR treatment, both patients and physicians noticed a significant improvement in IDC on the treated side compared to the control side. Figure 1 depicts the appearance of IDC with a narrowed area and lighter colour.

Melanin Index (MI): Trends of Melanin Density Decreased in the IDC Area: On the control side, the MI of the IDC area remained nearly unchanged. On the treated side, MI remained stable in six patients, increased slightly in two, and decreased in the remaining participants, but there was no statistical difference when compared to the control group (Figure 2).

Periorbital Wrinkles: Significant Improvement: A 3-dimensional analysis of VISIA-CR revealed the apparent disappearance of thick, deep wrinkles after treatment (Figure 3A). The



periorbital wrinkles decreased by $8.55\% \pm 9.03\%$ on the treated side and by $1.07\% \pm 3.73\%$ on the control side when compared to the initial image. There were significant differences between the two sides (Figure 3B).

Side Effects: Tolerable Pain During the Treatment Procedure: The mean VAS score was 4.93 ± 0.91 . There were no reported side effects among the participants.

Discussion

This is the first study to look into the role of MFR in IDC treatment. Overall, the MFR treatment improved clinical outcomes in the mixed type IDC, particularly in terms of wrinkle reduction. Only trends, rather than significant decreases, were found in the evolution of melanin density in the treated IDC area. Periorbital hyperpigmentation is commonly treated with Q-switched or picosecond lasers. For patients with Fitzpatrick I-III skin types, laser therapy that targets melanin or water (ablative fractional carbon dioxide laser or non-ablative fractional Erbium laser) is generally safe and effective. [5]



Figure 1 Typical cases. (A) Case No.1 Female, 26 years old, mixed type IDC (pigmented + vascular + structural). a. Baseline. b. Six months after the last treatment: left side (MFR treated) shows global improvement, disappearance of deep wrinkles, tightening of infraorbital skin, and whitening of IDC; right side (control) is unchanged. (B) Case No.2 Female, 25 years old, mixed-type IDC (pigmented + structural). c. Baseline. d. Six months after the last treatment. Left side (MFR treated): global improvement, of wrinkles, tightening of infraorbital skin. Right side (control): unchanged. (C) Case No.3 Female, 42 years old, mixed-type IDC (pigmented + structural). e. Baseline. f. Six months after the last treatment. Left side (MFR treated): disappearance of wrinkles, tightening of infraorbital skin, whitening of IDC. Right side (control): unchanged

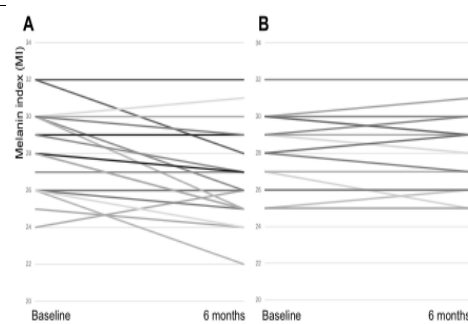


Figure 2 Improvement of Melanin index. (A) Treated side. (B) Control side. No statistical difference was found between the two sides ($p > 0.05$).

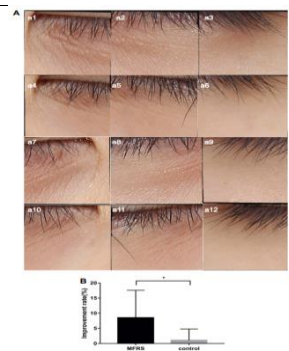


Figure 3 Improvement of periorbital wrinkles. (A) VISIA-CR images showing the improvement of periorbital wrinkles through 3-dimensional visual analysis. a1-a6: MFRtreated side, a7-a12: control side. (1-3, 7-9, baseline; 4-6, 10-12, after treatment). (B) Quantificational comparison based on VISIA results showed significant improvement on the rate of wrinkles of MFR-treated side ($*p < 0.05$).

Several studies have found that radiofrequency treatment improves pigmentation. It could be attributed to epidermal and dermal regeneration, an increase in hyaluronan, and the role of inflammation in the healing process. As a result, if large-scale studies can validate the use of the MFR system, which is not a chromophore-dependent device, it may be a safer and more effective modality for improving hyperpigmentation. Because relapse of IDC is not uncommon in clinical practice, particularly due to skin laxity and dyspigmentation, a relatively long



follow-up should be considered to give the treatment more value. Previous studies conducted follow-ups between 4 and 12 months and found no recurrence. ^[6]

Conclusion:

In conclusion, this is the first study to report the safe and effective use of the MFR system for treating IDC of mixed type in Chinese patients by correcting structural factors.

MFR is a safe and effective modality for correcting structural factors in mixed type IDC.

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Acne Keloidalis Nuchae is Associated with Cutis Verticis Gyrata

Introduction

Cutis verticis gyrata (CVG) is characterized by scalp skin thickening and excessive folds. CVG is considered uncommon and can be of primary or secondary origin. Primary CVG can be essential or non-essential (associated with neuropsychiatric and ophthalmic disorders) (not associated with any other abnormality). ^[1] Secondary CVG can be caused by inflammatory skin conditions such as psoriasis and eczema, as well as systemic diseases such as acromegaly, myxedema, and pachydermoperiostosis. Prolonged hair traction has also been linked to acquired CVG. [2] Acne keloidalis nuchae (AKN) is a type of primary cicatricial alopecia that typically affects men of color and the occipital region. Microtraumas in predisposed individuals that accompany hair regrowth after head shaving, posterior hairline carving, traction injuries from hair weaving, and trauma are the primary precipitating factors. The relationship between AKN and CVG has never been studied before. Only one case report of CVG in a patient with AKN and folliculitis decalvans has been found in the literature. ^[2] Since AKN is frequently first observed in the nuchal area, where scalp folds are common, and the precipitating event may be skin friction within these folds, the researchers decided to look into the potential relationship between CVG (a condition characterized by excessive scalp skin folds) and AKN.

Method

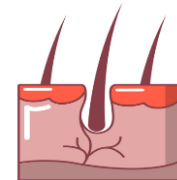
A total of 108 patients with AKN were evaluated retrospectively over an 11-year period. Patients with AKN who also had CVG were chosen for the study. The presence of excessive and atypical scalp furrows was the primary criterion used to initially identify the presence of CVG in these patients from photos and medical records. Patients with CVG and scalp-wide (widespread) AKN lesions were further evaluated using radiographs, urinary levels of prostaglandin E2 (PGE2), insulin growth factor (IGF), and thyroid functions to distinguish pachydermoperiostosis, acromegaly, and myxedema. When the distribution of AKN lesions significantly exceeds the occipital area to involve most sections of the scalp, this is referred to as scalp-wide (widespread) AKN.

Results

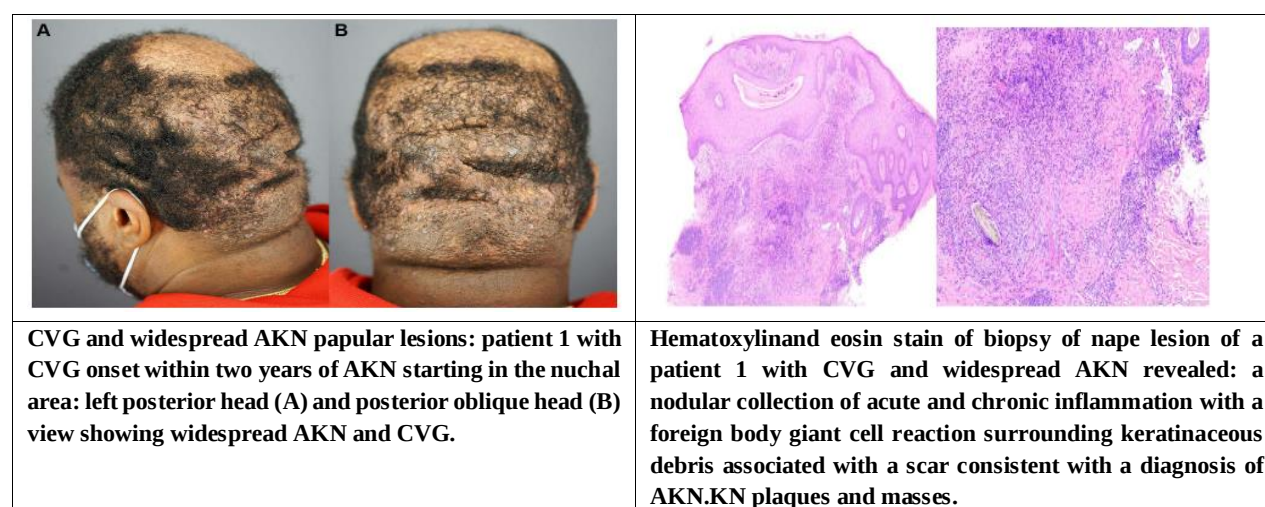
Seven of the 108 AKN patients had scalp-wide (widespread) lesions, four of which had CVG. The AKN was widespread in three of the four patients with concomitant AKN and CVG, and its onset was 1-2 years before the CVG. The AKN lesions in the fourth CVG patient were confined to the nuchal area, and the CVG occurred several years before the AKN. All of the patients were men, with ages ranging from 35.8 to 38.0 years (CVG group).

Discussion:

Widespread AKN refers to AKN lesions that spread beyond the typical confines of the occipital zones, affecting the majority of the scalp. ^[3] The study examined a cohort of 108 patients with



AKN, including three patients with AKN that first appeared in the nape area. These three patients developed CVG within two years of the onset of AKN and had rapid scalp-wide spread of the AKN lesions. CVG appeared before the onset of AKN in one patient in our cohort, who also had localized AKN. Despite the small sample size, the findings in the context of a cohort of 108 patients suggest a strong association between AKN and CVG, with patients with widespread scalp AKN showing a proclivity for CVG. This correlation is most likely due to a common causal denominator. ^[2] Furthermore, while CVG is a hyperandrogenic condition, AKN predominantly affects post-pubertal men and spares older men past their testosterone prime.



When compared to non-affected lesions, AKN is associated with elevated TGF- β activity (similar to hypertrophic and keloidal scarring), which leads to increased fibroblastic activity upregulation by TGF- β .

Although it has been speculated that physical friction within the skin folds may be responsible for AKN,⁵ the sparing of CVG folds in one of the study's patients with widespread AKN suggests that the spread may not be caused by the physical phenomenon of friction between the skin walls forming the CVG folds. Because treating scalp-wide AKN is more difficult, recognizing this association emphasizes the importance of intervening early with more effective treatments when CVG appears within a couple of years of the onset of AKN lesions while still localized to the nape area. ^[4]

The findings of the study may also point to a potential therapeutic target for AKN and CVG that involves antagonists of TGF-associated activities. The main limitation of this study is that it is retrospective. However, its main strength is the large number of patients enrolled (given the low prevalence of AKN and CVG). A larger prospective study will aid in the validation of our findings.

Conclusion:

This study provides the first evidence of a strong link between AKN and CVG. Furthermore, the findings support a syndromic relationship between AKN and CVG, implying a high likelihood of scalp-wide spread of AKN lesions that preceded the onset of CVG within 2 years.



The study revealed a previously unknown link between widespread AKN and CVG, with AKN development preceding CVG formation.

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A Case of Lichen Amyloidosis on the Scalp

Introduction

Primary cutaneous amyloidosis (PCA) is a common skin condition marked by amyloid deposition in the dermis without systemic involvement. ^[1] PCA has several subtypes, including lichen amyloidosis (LA), macular amyloidosis (MA), and, in rare cases, nodular amyloidosis (NA). ^[2] LA is clinically distinguished by the development of multiple pruritic, hyperkeratotic, lichenoid papules, which occur primarily on the pretibial areas and on the arms and thighs on occasion. However, scalp involvement has been reported infrequently. This study presented a case in which LA lesions restricted the skin on the scalp.

Case Presentation:

For one year, a 64-year-old Chinese man had multiple dark-brown papules on his scalp. The lesions were asymptomatic and grew in number gradually over time. He had androgenetic alopecia (AGA) for a decade with no treatment other than topical 5% minoxidil for 1 month 5 years ago. The patient was otherwise in good health, and his family history was clean. Physical examination revealed discrete 1- to 3-mm flat-topped brownish papules over the scalp's crown and vertex (Figure 1A). Dermoscopic examination revealed a whitish scar-like center surrounded by brownish dots or brown fine streaks radiating from the center, in the context of typical AGA hair and scalp alteration (Figure 1B). Histologically, the papillary dermis was found to have pink amorphous material deposition with scattered melanophages in the expanded dermal papillae (Figure 1C). Congo red staining was used to highlight the deposits (Figure 1D). He was eventually diagnosed with LA, and after two months of treatment with clobetasol propionate/all-trans retinoic acid compound ointment, he saw a significant improvement in the appearance of the lesions with no side effects.

Discussion

LA is a chronic pruritic skin disorder caused by amyloid deposition in the papillary dermis. The precise pathogenesis of LA is still unknown. Several medical conditions, such as constant skin friction, genetic predisposition, virus infection, and environmental factors, have been linked to LA. Atopic dermatitis, diabetes mellitus, and renal insufficiency were also reported as comorbid diseases.

LA is most commonly found on the extensor surfaces of the extremities. Because of AGA, the patient in this study denied itching and taking any regular medication or therapy other than topical minoxidil. The study hypothesized that the lesions were caused by long-term sun exposure of the scalp due to severe alopecia. One of the underlying causes of amyloidosis cutis dyschromica, an atypical clinical variant of PCA, has been proposed to be sun exposure. ^[2] Lichen planopilaris, seborrheic dermatitis, verruca plana, and epidermodysplasia verruciformis are among the clinical differential diagnoses in this case.

Dermoscopy may be useful in confirming clinical suspicions of PCA prior to skin biopsy. LA's features are still being researched. Current thinking holds that LA has white central hubs or whitish scar-like centers (corresponding to amyloid deposits or hyperkeratosis with acanthosis



in pathology) surrounded by greybrown pigmentation, primarily in the form of dots, globules, or peppering (corresponding to pigment incontinence and basal hyperpigmentation), which is referred to as a "two-zone pattern." [3]

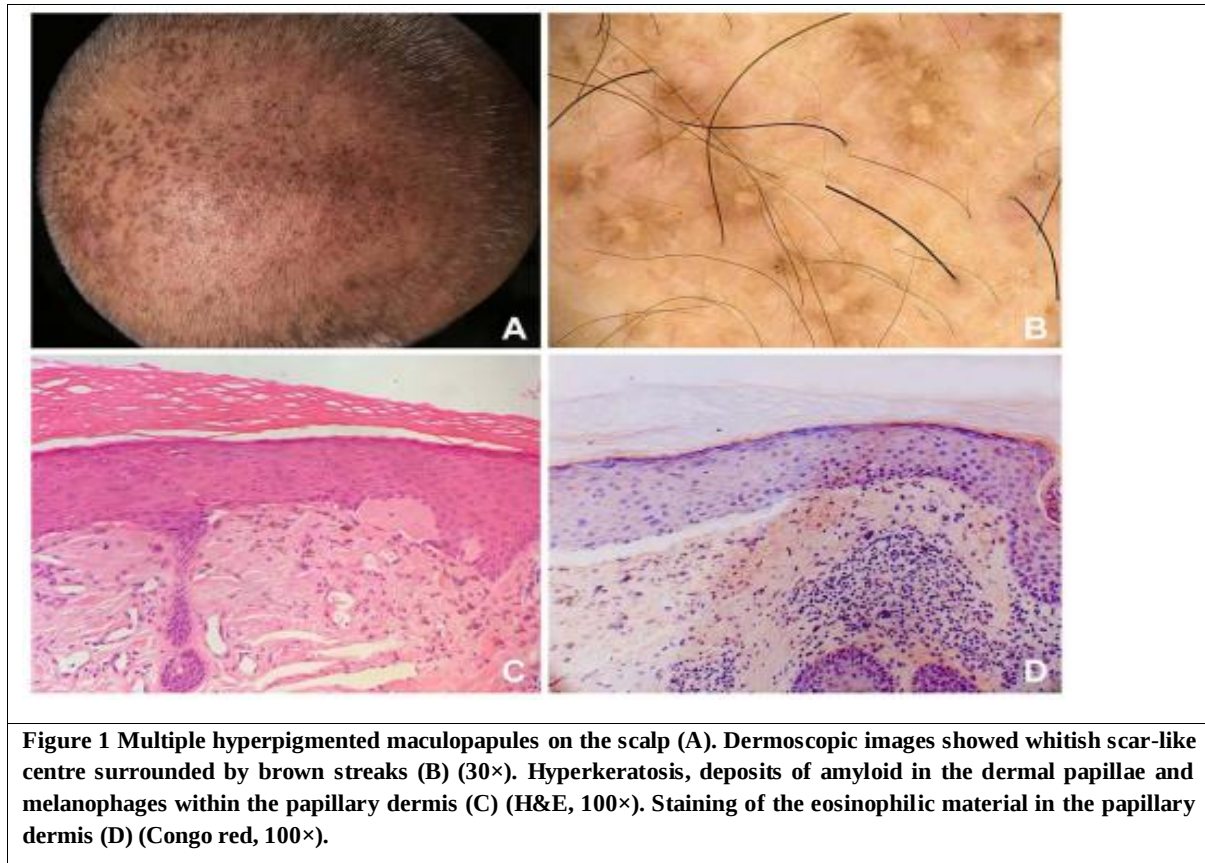


Figure 1 Multiple hyperpigmented maculopapules on the scalp (A). Dermoscopic images showed whitish scar-like centre surrounded by brown streaks (B) (30×). Hyperkeratosis, deposits of amyloid in the dermal papillae and melanophages within the papillary dermis (C) (H&E, 100×). Staining of the eosinophilic material in the papillary dermis (D) (Congo red, 100×).

Patients with PCA have been treated with a variety of modalities, including topical steroids, calcineurin inhibitors, systemic antihistamines, retinoids, and various laser therapies. However, there is no cure as of yet. Emerging biological agents and small molecule agents, such as dupilumab, IL-31, or JAK inhibitors, could be potential PCA therapies, particularly for generalized type. [4]

Conclusion

Primary cutaneous amyloidosis is a relatively common skin disorder characterized by extracellular deposition of amyloid materials caused by protein degradation in the skin. Aside from typical clinical manifestations, some forms of PCA have an unusual distribution, such as lichenoid papules on the scalp in this case. The study emphasized dermatologists' awareness of atypical morphology or location of PCA, and it suggests that dermoscopy could be a useful tool in the disease's diagnosis.

Lichen amyloidosis (LA) is a type of primary cutaneous amyloidosis that manifests as discrete, lichenoid papules with itching on the extensor surfaces of the extremities. The involvement of the scalp is rarely reported in the literature. A case of LA over the crown and vertex areas of the scalp was reported in this study. The lesions improved significantly after 2 months of topical clobetasol propionate/all-trans retinoic acid compound ointment treatment.



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