DERMA TODAY

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Dear Doctor,

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

This issue contains:

1. A Retrospective Study of the Relationship Between the Number of Follicular Stelae and the Severity and Treatment Response of Alopecia Areata Cases.
2. A Descriptive Study of Neutrophil-to-Lymphocyte Ratio, Platelet-to-Lymphocyte Ratio, and Mean Platelet Volume in Children with Psoriasis
3. A retrospective examination of the relationship between keloids and underlying health problems
4. Anaplastic Large Cell Lymphoma Misdiagnosed as Keloid.

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Best Regards,

Medical Team, Micro Labs Limited

A Retrospective Study of the Relationship Between the Number of Follicular Stelae and the Severity and Treatment Response of Alopecia Areata Cases.

Introduction

Alopecia is one of the most prevalent problems observed in dermatological practise, with severe psychosocial effects on affected individuals' quality of life [1]. Alopecia areata (AA) is an autoimmune, nonscarring hair loss illness that affects children more than adults. Relapsing and remitting patches of hair loss characterise AA, which can proceed to severe variants such as alopecia totalis (AT), alopecia universalis (AU), or alopecia ophiasis (AO) [2]. AA affects roughly 0.1%-0.2% of the overall population. Follicular stelae are follicular remains seen in the bulbar area of the hair follicle. They have two distinct functions. The first was to promote the production of new follicles through telogen germinal epithelium development. The second was to guide a tract within the reticular dermis for the developing anagen follicle. Follicular stelae are also increased in people with AA and androgenetic alopecia [3]. Study goal was to count the frequency of follicular stelae in AA patients and compare them to clinical type, severity, and therapy response.

Causes of Alopecia Areata

Methods

Patients diagnosed with AA or alopecia totalis (AT)/universalis based on histopathology and clinical examination were included in the research. All included cases' clinicopathological and demographic data were collected, including age, gender, total duration of the disease, disease severity, and response to any therapy. Total follicular units, the existence of anagen follicles, the presence of catagen/telogen follicles, and follicular stelae (streamers) were all noted for each patient.

Results

There was a statistically significant connection (P = 0.001) between patient age and the frequency of follicular stelae. There was a statistically significant connection (P = 0.005) between disease severity and the number of follicular stelae. The number of follicular stelae in

AA subtypes (0%-25% scalp hair loss) was substantially lower than in 75%-100% scalp hair loss and alopecia universalis (7.92 ± 4.21 vs. 13.23 ± 7.28). The amount of follicular stelae had no statistically significant association with treatment response (P = 0.75). Clinical and histological pictures of two individuals with 0%-25% and 100% hair loss on the scalp are shown in FIG 1 and 2.

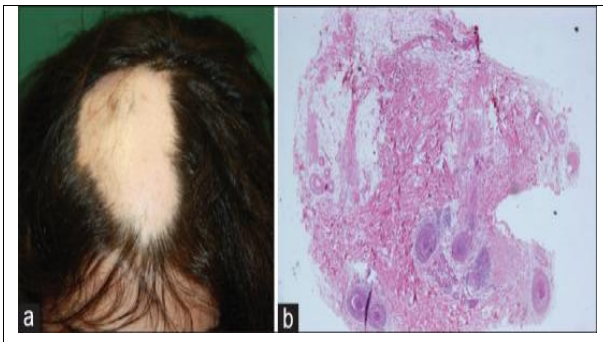

Figure 1: Patchy alopecia areata in the vertex (a), a few follicular stelae in skin biopsy H and E, ×40 (b)

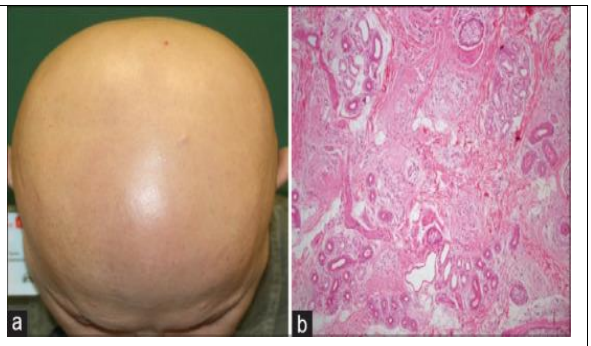

Figure 2: Alopecia totalis with a 100% loss of scalp hair (a), many follicular stelae in skin biopsy H and E, ×100 (b)

Discussion:

It was critical to distinguish between cicatricial and noncicatricial alopecias by identifying follicular stelae on scalp biopsy sections. In less than ideal specimens, follicular stelae might be mistaken with follicular scars. Tan T et al reported that The application of elastic tissue stains can assist distinguish between scarring and nonscarring alopecia [3,4].

The diagnostic hint for AA is peribulbar inflammation, which is not always present depending on the stage of the disease. In these circumstances, the presence of eosinophils inside the peribulbar infiltrate and follicular stelae is a valuable diagnostic characteristic. Yoon TY et al. had previously demonstrated that the eosinophilic infiltration is a nonspecific characteristic with low diagnostic utility. More relevant findings for diagnosing AA include follicular miniaturisation, pigment deposition, and catagen/telogen follicles [5].

Conclusion:

Current study was the first to look at the relationship between the number of follicular stelae and the severity and treatment response of AA. There were no significant relationships

discovered between the frequency of follicular stelae and treatment response in the current investigation.

Alopecia areata (AA) is an autoimmune, nonscarring hair loss disease that primarily affects children. AA is characterised by relapsing and remitting regions of hair loss.

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A Descriptive Study of Neutrophil-to-Lymphocyte Ratio, Platelet-to-Lymphocyte Ratio, and Mean Platelet Volume in Children with Psoriasis

Introduction

Psoriasis is a chronic inflammatory disease of the skin, nails, and joints that affects 1-2% of the population. In around one-third of individuals, clinical symptoms begin in childhood. Although chronic plaque psoriasis is the most frequent kind of psoriasis in children, the distribution, morphology, clinical symptoms, and results may differ from those seen in adults. As in adults, paediatric psoriasis can be accompanied by comorbidities such as obesity, hypertension, hyperlipidemia, and diabetes mellitus [(1)]. IgA Vasculitis (IgAV), formerly known as Henoch-Schonlein Purpura (HSP), is a systemic vasculitis characterised by polymorphonuclear leukocyte infiltration of small blood vessels and IgA1-predominant immunological deposits [(2)]. The neutrophil to lymphocyte (NLR) and platelet to lymphocyte (PLR) ratios are inexpensive and commonly accessible laboratory measures that are associated to clinical outcome in a variety of inflammatory diseases. Changes in the percentage formula of white blood cells (neutrophilia and lymphopenia) are the immune system's physiological reaction to an ongoing inflammatory process, injury, or stress [(3)]. The purpose of this study is to look into the presence of low-cost, simply applicable laboratory markers that may be used to assess disease activity and severity in children with psoriasis.

Methods

This is a retrospective study included 45 young, healthy controls under the age of 18 were compared to 72 psoriatic patients who had been hospitalised to the dermatology outpatient clinic of a tertiary university hospital within a year. From files, demographic and medical information was recorded. White blood cells (WBC), lymphocytes, neutrophils, and platelets were counted, along with the erythrocyte sedimentation rate (ESR), C-reactive protein, neutrophil/lymphocyte ratio (NLR), and platelet/lymphocyte ratio.

Results

A total of 117 children were involved in the study: 72 patients (45 girls, 27 boys), and 45 controls (23 females, 22 males). In the patient group, there were 42 (58.3%) children with plaque type and 30 (41.7%) children with guttate type psoriasis. The laboratory parameters of the plaque and guttate type psoriatic patients were compared with the control group. WBC, neutrophil count, MPV (Mean platelet volume) and ESR (Erythrocyte sedimentation rate)

values were similar in guttate and plaque type and were significantly higher compared to control group. NLR (Neutrophil-lymphocyte ratio) was significantly higher in plaque type psoriatic patients compared to the control group (p=0.009) (table 1). In comparison to the control group, plaque type psoriatic patients' NLR was shown to be greater (p=0.005).

TABLE 1: Comparison of the laboratory parameters of patients with disease subtypes and control group.

	Patient group (n=72)			
Parameters	Guttate type (n=30)	Plaque type (n=42)	Control group (n=45)	p-value
WBC (10^3 /mL)	7.95±2.32 (a)	8.09±1.89 (a)	6.73±1.4 (b)	0.001
Neutrophil (10^3 /µL)	4.51±1.85 (a)	4.55±1.66 (a)	3.31±0.97 (b)	<0.001
Lymphocyte (10^3 /µL)	2.68±0.63	2.58±0.76	2.62±0.79	0.869
Platelet (10^3 /µL)	321.36±79.58	301.62±90.69	302.16±62.15	0.500
MPV (fL)	8.73±1.35 (a)	9.27±1.46 (a)	7.03±1.11 (b)	<0.001
NLR	1.5 [0.85-8.1] (ab)	1.59 [0.6-5.9] (a)	1.3 [0.4-2.9] (b)	0.009*
PLR	124.28±37.05	122.78±38.03	124.44±44.15	0.979
ESR (mm/h)	11.5 [1-34] (a)	9 [1-60] (a)	5 [3-12] (b)	<0.001*
CRP (mg/L)	3 [0.1-12]	2.35 [0.1-40]	3 [0.1-3.4]	0.821*

*Kruskal Wallis test was used. One-way ANOVA was used to compare the other parameters; (abc): The same letter in lines refers to statistical insignificance; WBC: White blood cell; MPV: Mean platelet volume; NLR: Neutrophil-lymphocyte ratio; PLR: Platelet-lymphocyte ratio; ESR: Erythrocyte sedimentation rate; CRP: C-reactive protein.

Discussion

The results of the current study showed that plaque type psoriatic patients' NLR values were considerably greater than those of the control group, and that the WBC, neutrophil count, MPV, NLR, and ESR values in paediatric psoriasis patients were significantly higher than those in the controls [(1)].

In the current study, there was no significant association or relationship between PASI (Psoriasis Area Severity Index) score and laboratory data in children with plaque-type psoriasis. However, research by Sen BB et al. found that NLR, PLR, and MPV were connected to or associated with the severity or activity of the disease in adult psoriasis [(4)].

A considerable decline in NLR and PLR levels following treatment with biological agents was noted in the research by Asahina et al. Another research by Erek Toprak et al. did not find a significant reduction in NLR levels following the application of narrow band ultraviolet B therapy to psoriatic patients [5,6].

Conclusion:

Alternative indicators for measuring the severity of the illness in children with psoriasis include WBC, neutrophil count, MPV, NLR, and ESR values. Along with PASI, which is a clinical sign of skin involvement, it may be helpful to track inflammatory measures that might reveal subclinical inflammation and potential comorbidity concerns in paediatric psoriatic patients.

WBC, neutrophil count, MPV, NLR, and ESR values are alternative indications for determining the severity of the illness in children with psoriasis.

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A retrospective examination of the relationship between keloids and underlying health problems

Introduction

Keloids are fibroproliferative skin diseases that resemble tumours and can cause disfigurement and impairment. The pathogenic processes behind this disorder are unknown, specifically the development from normal healthy skin to inflammatory skin tissue, followed by keloid formation [(1)]. They are most usually found on the chest, upper back, shoulders, and ears, and they are more common in people of colour, especially those of African, Asian, and Latinx origin. Although keloids are not dangerous, they can have a significant influence on quality of life since they can be disfiguring, uncomfortable, and/or itchy; in some cases, they can even inhibit joint movement. The link between keloids and various underlying health issues has been proposed but not fully demonstrated. The goal of this study was to see if there was any link between keloids and underlying health issues in African-American women [(2)].

Method

This retrospective study included women with keloids who had undergone caesarean sections were compared to a control group of women who had undergone caesarean sections but had no history of keloids. A total of 49 comorbidities were chosen and examined using their ICD-10 diagnosis codes. Leiomyoma, dyslipidemia, anxiety, depression, atopic dermatitis, kidney disease, pre-eclampsia, hypertension, type 2 diabetes mellitus, liver disease, peritoneal adhesions, anaemia, inflammatory disorders of the uterus, postpartum haemorrhage, respiratory diseases, and gastroesophageal reflux disease were among the underlying health conditions. To account for multiple comparisons, an α value of 0.05 was divided by the number of studies (n = 50), yielding a.001 Bonferroni corrected/adjusted p value. SPSS statistical analysis software was used to do statistical computations.

Results

The diagnostic codes that revealed significant differences between the experimental and control groups before applying the Bonferroni adjustment was listed in table 1. Peritoneal adhesions, other specified noninflammatory disorders of the uterus, abnormality in foetal heart rate and rhythm complicated by labour and delivery, diseases of the skin subcutaneously complicating childbirth, and other diseases and conditions complicating pregnancy/childbirth were the ones

with Bonferroni corrected significant differences between the keloid group and the normal group. Full-term premature rupture of membranes with onset of labour within 24 hours of rupture, unspecified uterine leiomyoma, digestive disorders complicating childbirth, gestational diabetes mellitus in childbirth, major depressive disorder, generalised anxiety disorder, atopic dermatitis, and pre-existing hypertension are a few notable diagnoses that were not significantly different.

Table 1:The various diagnostic codes tested between women with keloids and control women who had undergone cesarean section (C-section) are listed in the first column, with their descriptions in the second column (ICD-10, International Classification of Diseases, Tenth Revision).

ICD-10 diagnostic code	**ICD-10 diagnostic code description**	**Proportion of AA keloid C-section patients with diagnosis**	**Proportion of AA normal C-section patients with diagnosis**	**Significant difference with *p* value of .05**	**Significant difference with Bonferroni correction (*p* value of .001)**
D252	Subserosal leiomyoma of uterus	3.32%	1.42%	Yes, .0056	No, .0056
D259	Leiomyoma of uterus, unspecified	6.98%	4.21%	Yes, .018	No, .018
K660	Peritoneal adhesions (postprocedural) (postinfection)	5.32%	1.67%	Yes, <.0001	Yes, <.0001
N736	Female pelvic peritoneal adhesions (postinfective)	9.63%	3.38%	Yes, <.0001	Yes, <.0001
N858	Other specified noninflammatory disorders of uterus	14.62%	7.06%	Yes, <.0001	Yes, <.0001
O34211	Maternal care for low transverse scar from previous cesarean delivery	78.07%	42.41%	Yes, <.0001	Yes, <.0001
O76	Abnormality in fetal heart rate and rhythm complicating labor and delivery	11.30%	30.30%	Yes, <.0001	Yes, <.0001
O9962	Diseases of the digestive system complicating childbirth	8.97%	5.25%	Yes, .0040	No, .0040
O9972	Diseases of the skin and subcutaneous tissue complicating childbirth	63.12%	0.64%	Yes, <.0001	Yes, <.0001

Discussion:

In the current investigation, keloid formation was compared to a number of underlying medical problems in women who had C-section deliveries. The tendency to generate keloids has been

linked to a number of diseases. The development of peritoneal adhesions may be more common in females who develop keloids; this link is yet to be addressed in the literature. This shows that keloids and peritoneal adhesions may share underlying processes that cause aberrant cutaneous and internal scarring, respectively [2].

The lack of a higher prevalence of prenatal hypertension, gestational diabetes, or pre-existing type 2 diabetic mellitus shows that keloid aetiology is different from the other mechanisms outlined. Our lack of relevance with hypertension is contrast to the other published research by Rutherford A, et al [3].

Keloids and peritoneal adhesions are both benign fibrotic structures. It's likely that keloids are causing by the same inflammatory mechanism that leads to the formation of peritoneal adhesions. The fibrosis that develops in peritoneal adhesions has been linked to transforming growth factor-beta 1 and 3 (TGF-β1 and TGF-β3). Similar to this, Lei R et al discovered that the TGF-β pathway is crucial for the development of keloids [4].

Conclusion:

Compared to non-keloid patients, keloid patients have a higher relationship with peritoneal adhesions and other uterine non-inflammation disorders. The results presented above imply that keloids and peritoneal adhesions can share an inflammatory aetiology.

Keloid patients have a stronger association with peritoneal adhesions and other uterine non-inflammation problems than non-keloid people.

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Anaplastic Large Cell Lymphoma Misdiagnosed as Keloid

Introduction

Anaplastic large cell lymphoma (ALCL) is a subtype of peripheral T-cell lymphoma that was initially described by Stein et al in 1985. It is most common in children and young adults, accounting for 10-15% of paediatric non-Hodgkin's lymphoma (NHL) and just 2% of adult NHL [(1)]. Anaplastic Large Cell Lymphomas (ALCL) are clinically and pathologically different lymphoid neoplasms derived from mature post-thymic T-cells. The World Health Organisation (WHO) Classification of Hematologic Malignancies now recognises two different subtypes of systemic ALCL: ALK-negative and ALK-positive (anaplastic lymphoma kinase). Breast Implant Associated ALCL (BIALCL) is a distinct subtype of ALCL that develops following extended exposure to breast implants [(2)]. Keloids are fibroproliferative skin diseases that resemble tumours and can cause deformity and impairment. The pathogenic processes behind this disorder are unknown, notably the transition from normal healthy skin to inflammatory skin tissue, followed by keloid [(3)]. This is a case of a patient who was first diagnosed with a keloid but was later identified as primary cutaneous ALK-negative anaplastic large cell lymphoma by skin histology and immunohistochemistry.

Case Presentation:

A 58-year-old male came with a red papule on the lateral side of his left knee 6 months ago with no clear explanation, after which the papule gradually grew to 2*3 cm (Figure 1) and he was diagnosed with "keloid." "Compound Betamethasone injection 1mL topical injection" 4 times per month Following that, the lesion grew to a 7*8 cm irregular plaque with ulceration and crusting on the surface and many tiny papules in the perimeter (Figure 2). The lesions' histopathology revealed diffuse infiltration of tumour cells in the dermis and subcutaneous tissue, partly interspersed among collagen fibres, and focal infiltration of surrounding lymphocytes and large-sized tumour cells rich in cytoplasm, with round or irregular nuclei, obvious nucleoli, obvious heterotypes, and obvious interstitial phenomenon. The immunohistochemistry results were as follows: CD30 (+++), CD3 (+), CD4 (+), CD8 (+), CD56 (-), ALK (-), CD20 (-), and Ki-67 90% or higher. PET-CT imaging revealed minimal skin thickening and soft tissue mass development on the outside region of the left knee, consistent with lymphoma, as well as enhanced metabolism in the bilateral inguinal lymph

nodes. Six rounds of CHOP (cyclophosphamide, adriamycin, vincristine, prednisone) chemotherapy were provided, and the lesions gradually disappeared (Figure 3).

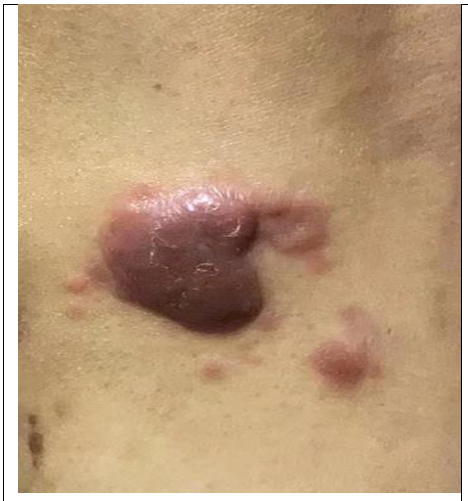	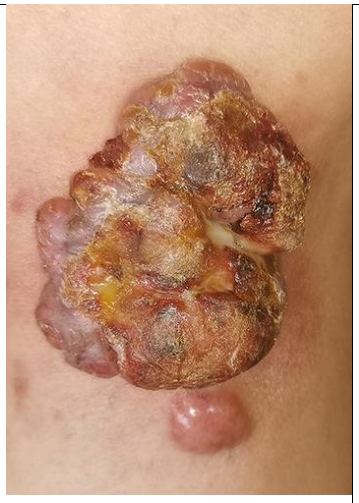	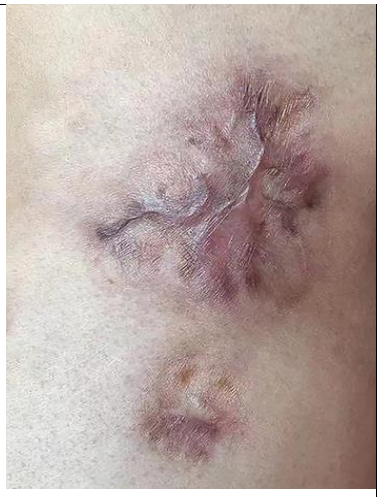
Figure 1 Clinical photograph of the patient: Initial photograph of the patient.	Figure 2 Clinical photograph of the patient: after topical injections of compound betamethasone injections 1 mL x 4 times.	Figure 3 Clinical photograph of the patient: After 6 rounds of chemotherapy with the CHOP regimen.

Discussion

Anaplastic large cell lymphoma (ALCL) is a rare and aggressive form of non-Hodgkin's lymphoma (NHL) that accounts for approximately 2% of all lymphoma tumors. It typically manifests as limited purple papules, nodules, and plaques, with shallow ulcers that can be solitary or multiple. These lesions are characterised as systemic ALCL, primary cutaneous ALCL (pC-ALCL), or breast implant associated ALCL (BIA-ALCL) depending on the place of origin [(1)].

In the investigation by Zhang Y et al discovered that the pathology is distinguished by big tumour cells with abundant cytoplasm, round or irregular nuclei, prominent nucleoli, and pleomorphic cells. pCALCL has a fair prognosis when it does not express mesenchymal lymphoma kinase (ALK), but a few individuals have a bad prognosis, which may be connected to ALK rearrangement, ALK-1 protein expression, ageing, and immunological degeneration [(4)]. In the study by Abe H et al concluded that chemotherapy with the CHOP regimen is the first-line treatment for ALCL, with an overall survival rate of 70%-90%[(5)]. Donato EM et al and Koh Y et al conclude autologous stem cell transplantation (ASCT) and the brentuximab vedotin (BV) regimen are available for patients with systemic ALCL [(6,7)].

Conclusion

In clinical practise, keloid scars are more prevalent, and radiation with X-ray or glucocorticoid intradermal injections are favoured with exceptional success. However, in a small percentage of patients, these treatments might lead to misdiagnosis and omission. Since dispersed erythema and papules around keloids are less frequent, when erythema and papules are found around keloids, it is important to take other illnesses into consideration. This also serves as a reminder of the need of prompt dermatopathological tissue sample and immunohistochemistry testing. Dermatology is a wide and systematic secondary clinical field, and even when there are typical skin lesions, it is sometimes difficult to precisely detect various extradermal disorders, and a full examination can assist to find out objective evidence.

Keloid scars are more common in clinical practise, and radiation with X-ray or glucocorticoid intradermal injections is preferred with excellent results.

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