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. Evaluation of Helicobacter pylori seropositivity in vitiligo patients
2. Determination of foot deformities in ingrown nail development with objective radiological parameters
3. Evaluation of melasma's impact on visual attention, perceived attractiveness, and social evaluations considering distinct anatomical areas
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Best Regards,

Medical Team, Micro Labs Limited

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Evaluation of Helicobacter pylori seropositivity in vitiligo patients

Introduction

Vitiligo, a depigmenting skin disorder, is characterized by the selective loss of melanocytes, which results in pigment dilution in the affected skin areas. It was estimated that it affects 0.5-2% of the global population, including adults and children. Non-segmental vitiligo (NSV) and segmental vitiligo (SV) were the two main kinds of vitiligo that were categorized in 2011 by a worldwide consensus.[1] The development of the disease was facilitated by the interaction of genetic and environmental agents. Notably, infectious agents and other possible environmental factors also seemed to be connected to vitiligo. These play a role in the spread of autoimmunity through interactions with the environment and human immune system. The hepatitis C virus (HCV), cytomegalovirus (CMV), and Human immuno virus (HIV) were the most prevalent infectious agents in the pathogenesis of vitiligo. One of the most recent bacteria to be linked to the pathogenicity of vitiligo was Helicobacter pylori (H. pylori).[2] So, this study was carried out to compare H. pylori seropositivity in vitiligo patients and the healthy control group.

Types of vitiligo

Methods

This case-control study used the Enzyme-Linked Immunosorbent Assay (ELISA) test for investigation of the H. pylori infection in vitiligo patients and age- and sex-matched healthy controls. From both patients and controls, a 5 mL peripheral blood sample was collected. The separated sera were kept at -20 °C after all of the samples were centrifuged for five minutes at

5000 rpm. Next, using the H. Pylori IgG and IgM kit and the ELISA method, the serum levels of IgM and IgG to H. pylori were measured. The T-test and ANOVA tests were used to compare the groups after the data was analysed using SPSS software version 20.0. It was considered statistically significant when $P < 0.05$.

Results

The study comprised 210 vitiligo patients (106 females and 104 males). There were 127 healthy controls in the control group 52 men and 75 women. IgG levels in vitiligo patients were greater at 29.68 ± 28.28 RU/mL than in healthy controls (19.08 ± 20.12 RU/mL) ($P < 0.000$) (Table 1). Based on the amount of IgM, there was no significant difference ($P < 0.207$) between the groups. IgG or IgM means in the vitiligo group differed with age ($P < 0.33$)/ ($P < 0.017$) and early symptoms ($P < 0.00$) ($P < 0.02$), respectively. Compared to IgG, there was a significant difference in the mean level of IgM, onset age of vitiligo ($P < 0.022$), and disease duration ($P < 0.05$). Furthermore, compared to the control group, both males and females with vitiligo had increased seropositivity to H. pylori antibodies.

	Patient with vitiligo (n = 210)	Control (n = 127)	*P*-value
Age, years, mean ± SD	(39.72 ± 13.16)	(40.64 ± 15.14)	0.55
Sex			
Women (%)	50.5	59.1	
Men (%)	49.5	40.9	
Disease duration, years, mean ± SD	(12.8 ± 10.7)	----------	
H. Pylori IgG (RU/mL)	(29.68 ± 28.28)	(19.08 ± 20.12)	0.000
H. Pylori IgM (RU/mL)	(0.50 ± 0.27)	(0.68 ± 0.62)	0.207

N, number

Table 1. Baseline demographic and clinical features of vitiligo patients and healthy controls (mean ± SD), as well as serum IgG/IgM values in both groups.

Discussion

The results of this study clearly demonstrated that the sample of vitiligo patients had H. pylori seropositivity. As a result, vitiligo patients had a considerably greater mean level of IgG to H. pylori than controls.[2] Similarly, a statistically significant difference was found in H. pylori stool antigen test positivity between the patient and the control groups. The findings suggest that H. pylori infection was more common in vitiligo patients, and that screening for H. pylori infection may be vital.[3]

Conclusion

Vitiligo was found to be substantially correlated with H. pylori. Thus, it was likely that H. pylori played a significant part in the development or progress of the disease activity in vitiligo.

There is a substantial correlation between H. pylori and vitiligo; Also, H. pylori had a crucial role in the initiation or progression of disease activity in vitiligo.

Reference

1. Bergqvist C, Ezzedine K. Vitiligo: a review. Dermatology. 2020 Mar 10;236(6):571-92.
2. Aghaei M, Aghaei S, Iraji F, Nilforoushzadeh MA, Hosseini MS, Shahmoradi Z, Hejazi SH. Helicobacter pylori seropositivity in Iranian patients with vitiligo: a case-control study. Iranian Journal of Dermatology. 2024 Mar 1;27(1):6-12.
3. Bdaiwi SA, Al-hattab MK, Al-nafakh MS. The frequency of Helicobacter pylori stool antigen in patients with different types of vitiligo in Iraqi Patients. Int J Pharm Res. 2020 Jul 2;12(2):3780-86.

2. Determination of foot deformities in ingrown nail development with objective radiological parameters

Introduction

An ingrown toenail is a painful condition of the lateral nail fold that is characterized by inflammation, infection, and the granuloma formation. This results from the distal portion of the nail penetrating the gutter and being injured by pressure.[1] Ingrown nails are prevalent among teenagers and young adults, but men are more likely to experience them. Uneven nail growth, irregular nail shape, hypertrophy of the lateral nail folds, acquired or congenital nail disorders, nail infections, factors that increase external pressure (such as wearing tight shoes), genetic predisposition, obesity, trauma, subungual tumors, excessive perspiration, and medication are all potential causes of ingrown nails. The two most prevalent abnormalities are pes planus, which was characterized by the collapse of the medial longitudinal arch, and hallux valgus, which was described as the lateral deviation of the big toe. Only a few number of earlier studies, with varying degrees of success, have examined the connections between these

abnormalities and ingrown nails.[2] So, this study was to evaluate whether foot abnormalities played a role in ingrown nail formation using objective radiographic measures.

Methods

This prospective and controlled study involved patients with ingrown nails and controls without any ingrown nail history. The hallux valgus angle (HVA), interphalangeal angle (IPA), and intermetatarsal angle (IMA) associated with hallux valgus, as well as the calcaneal pitch angle (CPA), talohorizontal angle (THA), and talometatarsal angle (TMA) associated with pes planus, were assessed on the bilateral foot radiographs of the patients with ingrown nails in both groups.

Results

Overall, a total of 180 feet were assessed, which included 76 feet from 64 patients with ingrown nails who were symptomatic, and 104 feet from 71 people in the control group who had a foot radiograph. There was no significant difference in radiological measurements of hallux valgus (HVA, IPA, and IMA) or pes planus (CPA and TMA) compared to controls. In the control group, THA was statistically significantly higher (P=0.025). While there were no significant connections between ingrown nail stage and other angles, there was a moderate strength positive association between ingrown nail stage and assessed TMA for pes planus diagnosis (rho=0.326; P=0.04) (Table 1).

	Pes Planus			Hallux Valgus		
	CPA	THA	TMA	HVA	IMA	IPA
Ingrown nail staging	-0.019	0.179	0.326**	-0.089	0.069	-0.086

CPA = Calcaneal pitch angle; HVA. Hallux valgus angle; IMA = Intermetatarsal angle; IPA = Interphalangeal angle; THA = Talohorizontal angle; TMA = Talometatarsal angle.
** P <0.01

Table 1. Spearman correlation analysis (N = 76) comparing the evaluation angles of pes planus and hallux valgus to the stage of ingrown nail

Discussion

The most common location for ingrown nails to occur is the big toe's lateral nail fold. This research showed that 73.7% of individuals experienced lateral stinging.[2] This was due to compression of the lateral nail fold between the two toes leads to inflammation, infection, and

granulation tissue in the ingrown nails.[3] Men and women both saw higher rates of ingrown nails on the lateral margin, with women experiencing statistically significant higher rates of ingrown nails (90.6 versus 61.4%).[2] The incidence and prevalence of ingrown nails were greater in female patients than in male individuals.[3]

Conclusion

This study does not propose correcting foot anatomy to prevent or treat ingrown nails unless there was an underlying foot deformity. However, pes planus, a foot deformity, can occur in patients with severe ingrown nails.

Unless there is a concomitant foot deformity, correcting foot anatomy is not advised for the prevention or treatment of ingrown nails.

Reference

1. Mukhtar M. Surgical pearl: a simple splinting technique for severe (stage III) ingrown nails. Iranian Journal of Dermatology. 2021 Dec 1;24(4):343-5.
2. Sarı N, Kurtipek GS, Ünal M, Öztürk M, Sarı İF. Evaluation of Foot Deformities in Patients With Ingrown Nails. Dermatol Pract Concept. 2024 Jan 1;14(1):e2024049.
3. Cho SY, Kim YC, Choi JW. Epidemiology and bone-related comorbidities of ingrown nail: A nationwide population-based study. J Dermatol. 2018 Dec;45(12):1418-1424.

3. Evaluation of melasma's impact on visual attention, perceived attractiveness, and social evaluations considering distinct anatomical areas

Introduction

Melasma is a prevalent chronic pigmentation condition that affects people with dark skin. Overall prevalence varies from 8.8% to 40%, depending on the region and population's ethnicity. Clinically, it presents as symmetric reticulated hypermelanosis, which primarily affects the mandibular, centrofacial, and malar facial patterns.[1] Melasma patients have a lower quality of life due to its major impact on face appearance and emotional suffering, including feelings of embarrassment, bothersomeness, and unattractiveness. The human face plays a significant role in creating initial impressions, assessing attractiveness, and determining characteristics of a person.[2] This study examined how melasma affects visual attention,

perceived attractiveness, and social evaluations across different anatomical locations. Furthermore, it aimed to compare opinions of conventional face tattoos because of their strategic placement.

Methods

This eye-tracking study involved 49 persons (18 males) aged 18-46 years. An additional 260 participants completed image-based personality questionnaires. Using eye tracking, gaze fixation patterns were investigated, and psychological traits were assessed through the completion of image-based personality questionnaires. Visual stimuli included anatomic melasma variants and tattoo patterns. The Gazepoint GP3-HD eye-tracker was used to record eye movements. The study included a screen-based questionnaire. Respondents were asked to score how much they thought the personality attributes of the people in the pictures represented them in order to compare views toward photographs of clinical forms of melasma and facial tattoos.

Results

There were 121 distinct traditional facial tattoo designs found. The most typical anatomical sites for tattoos on the faces of indigenous women are the chin and glabella, according to iconographic study. Traditional tattoos frequently follow midline patterns, avoiding the upper lip. Tattoos and melasma had a significant impact on visual attention ($p < 0.001$), with melasma on the chin and upper lip drawing more attention. Gaze to the ocular region was reduced by upper lip melasma ($p < 0.002$). While perioral fixations increased ($p < 0.001$) in comparison to faces in good condition. Increased perceived aggressiveness was indicated by upper lip tattoos ($p = 0.004$). There was a tendency that chin tattoos (mean=2.964) were more attractive than glabella and upper lip (mean=2.577; $p=0.189$) tattoos. Centrofacial lesions received considerably lower evaluations for attractiveness compared to malar, chin, and glabellar melasma ($p < 0.001$). However, there was no significant difference between centrofacial and isolated upper lip melasma ($p=0.178$) (Figure 1).

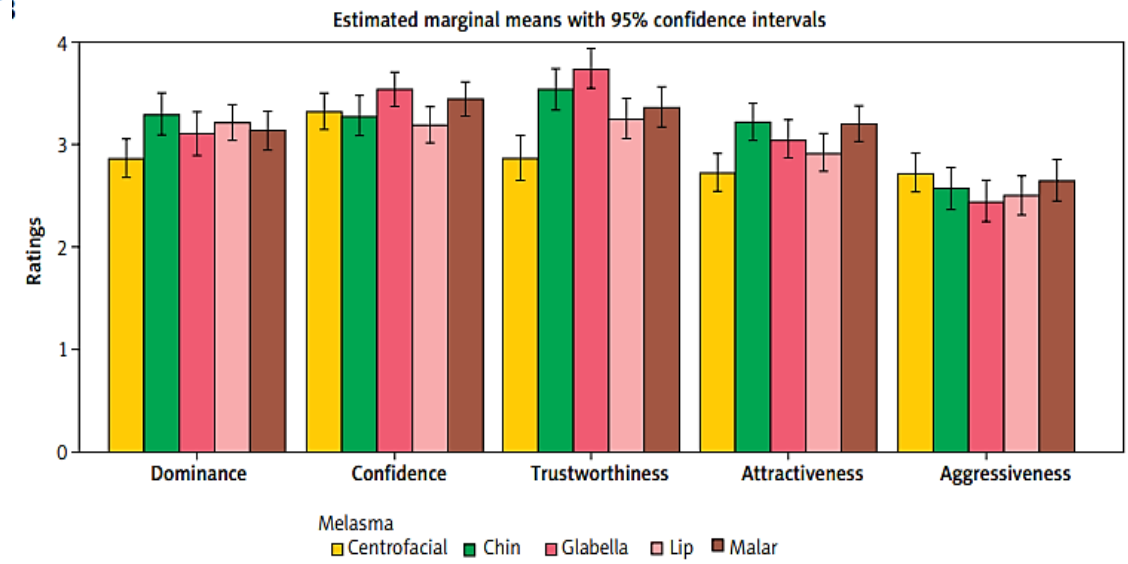

Figure 1: Mean rating scores and 95% confidence intervals for melasma indicating the relationship between personality factors and the anatomical location of pigmentary lesions (AOI)

Discussion

Melasma's facial pigmentary lesions can negatively affect quality of life. Pigmentation of the upper lip shifts gaze pattern to show anger and disdain, making the face appear more aggressive and less attractive.[2] Previous study has shown that facial skin lesions can cause a shift in gaze pattern geometry and interfere with perception of emotions.[3]

Conclusion

Pigmentation on the upper lip focuses attention on areas that convey anger, which increases perceived aggressiveness and decreases attractiveness. Thus, when setting treatment objectives, it is important to consider the significant impact of upper lip melasma in order to improve social perception as opposed to merely reducing the lesion area.

Pigmentation on the upper lip directs gaze towards areas that convey anger, which increases perceived aggressiveness and decreases attractiveness. So, it is important to consider the significant impact of upper lip melasma in order to improve social perception as opposed to merely reducing the lesion area.

Reference

1. Neagu N, Conforti C, Agozzino M, Marangi GF, Morariu SH, Pellacani G, Persichetti P, Piccolo D, Segreto F, Zalaudek I, Dianzani C. Melasma treatment: a systematic review. Journal of Dermatological Treatment. 2022 May 19;33(4):1816-37.
2. Jankowski M, Jasiński K, Płocka M. The aggressive face of melasma: unveiling the influence of upper lip pigmentation on social perception. Advances in Dermatology and Allergology/Postępy Dermatologii i Alergologii. 2024 Apr 2;41(2):173-80.
3. Jankowski M, Goroncy A. Anatomical variants of acne differ in their impact on social perception. J Eur Acad Dermatol Venereol. 2024 Feb 20. Epub ahead of print. PMID: 38379351.

4. Case report on Typical Skin Eruptions and a Unique Histological Pattern paving Vitamin C Deficiency Initial Diagnosis

Introduction

Scurvy is a nutritional condition caused by a vitamin C deficiency. After a severe vitamin C deficiency persists for at least one to three months, scurvy develops. Scurvy begins with symptoms such as lethargy, exhaustion, and musculoskeletal pain. Scurvy that has fully developed is mostly a skin and soft tissue condition. Follicular hyperkeratosis, dryness, leg edema, poor wound healing, abnormalities of the hair shaft, and abnormalities of the gums, such as gingival swelling and bleeding, are the most frequent findings.[1] It can be difficult to make an accurate diagnosis of scurvy early on, particularly in cases that do not yet exhibit the entire range of symptoms, such as bleeding gums, or in situations where there was just a mildly to moderately reduced serum vitamin C level. The skin is a readily accessible organ that provides significant histological, dermatoscopic, and macroscopic indications about scurvy. In addition to measuring vitamin C blood levels, a comprehensive clinical examination, a dermoscopy, and a skin biopsy are easy, low-cost procedures that can be used to rule out other potential causes of hemorrhages, such as vasculitis, and make an early diagnosis of scurvy. Substituting vitamin C is easy, cheap, and causes the symptoms to disappear quickly.[2] This case study describes a male patient, 56 years old, who suffered a trivial impact injury and progressed on to develop hemorrhagic diathesis.

Case Presentation

A 56-year-old man who had suffered a minor impact trauma to his left knee when his leg became slightly stuck in a closing train door appeared to emergency unit with growing swelling and throbbing pain in his left leg for almost 2 months along with significant ecchymoses. The patient reported fatigue, appetite loss, and a weight reduction of roughly 8 kg during the previous 3 weeks, along with gait instability following the trauma. The patient used walking sticks at the time of admission and required a wheelchair for longer distances. The patient's medical history disclosed an imbalanced diet that included no vegetables, meat, or fruit for a number of months. In addition, the patient had a history of complete remission from hepatitis C virus infection and prior intravenous drug addiction.

Figure 1. Multiple livid follicular macules and papules, primarily on the extremities.

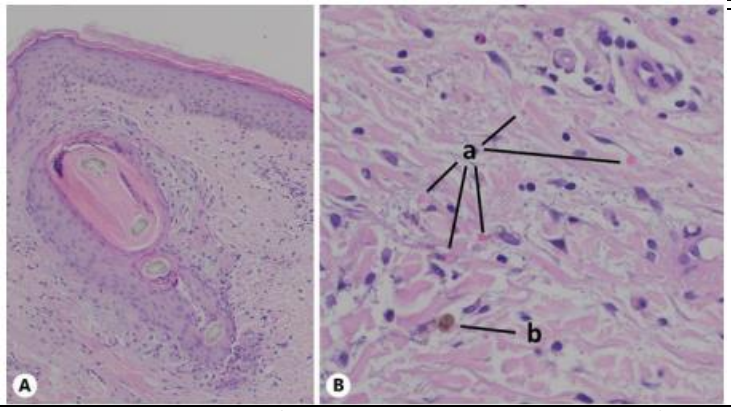

Figure 2. Skin biopsy showed follicular hyperkeratosis with coiled, deformed hair shafts (A) and in the upper dermis (B) perivascular and perifollicular extravasated erythrocytes (a) and siderophages (b). Hematoxylin and eosin (HE)-staining, ×40 (A) and ×100 (B) magnification, respectively.

He drank almost two liters of beer a day and was an active smoker. Upon doing a clinical examination, it was observed that the patient had decreased overall and nutritional status, along with a larger circumference in the left leg and huge confluent reddish-livid ecchymoses. Furthermore, both legs had widely distributed reddish brown follicular papules (Figure 1 and 2). There was a loss in muscle strength, especially in the left leg. Orally, there was no sign of bleeding or gingival hyperplasia. Laboratory results showed worsened pancytopenia with macrocytic hyporegenerative normochromic anemia (hemoglobin level of 61 g/L), mild hyponatremia, and raised D-dimer levels. Folic acid and vitamin B12 levels were decreased. Pulmonary embolism was ruled out by computed tomography. An X-ray did not show any left leg fractures. There was no sign of deep vein thrombosis on the left leg's duplex sonography. The peripheral blood's fluorescence-activated cell sorting analysis was unremarkable. Abdominal neoplasia was ruled out by magnetic resonance cholangiopancreatography and abdominal ultrasonography. It was determined that folic acid and vitamin B12 deficiencies were the cause of the chronic component of anemia, which was subsequently treated. Additionally, zinc was given empirically. A hemorrhagic diathesis of the left leg was the most likely explanation for the acute anemia with symptomatic hemoglobin loss. It was not possible to confirm a cutaneous vasculitis using skin histology or serology. There were no indications of a vasoocclusive condition, such as cryoglobulinemia, in skin histology or serology. When zinc, folic acid, and vitamin B12 were substituted, the hemorrhagic diathesis and weight loss persisted and did not improve. As a result, vitamin C levels in the serum were examined and found to be lower (14 µmol/L, standard value >24 µmol/L). Follicle hyperkeratosis, coiled hair shafts, extravasated erythrocytes surrounding veins in the upper dermis, around hair follicles, and siderophages as an indication of prior bleeding were all observed in skin biopsies from the lower limbs. These morphological alterations are characteristic with scurvy. The patient's symptoms quickly improved when vitamin C substitution was initiated at a daily dosage of 1,000 mg, hence confirming the diagnosis. When the patient was discharged from the hospital, he could walk longer on his own and had no trouble climbing stairs. The patient's general practitioner also told us that the symptoms mentioned above have totally vanished and that the patient's overall health has improved.

Discussion

Vitamin C is an important dietary nutrient. Skin biopsy is essential in the diagnosis of cutaneous bleeding diseases. Histology was able to rule out cutaneous vasculitis and cutaneous

vaso-occlusive disease in relation to the patient's prior hepatitis C infection.[2] In a previous study, skin histology revealed perifollicular hemorrhages, follicular hyperkeratosis, and coiled, twisted hair shafts—all of which are specific indicators of vitamin C deficiency.[3]

Conclusion

In patients with an unexplained hemorrhagic diathesis and a medical history of nutritional abnormalities, vitamin C insufficiency should be taken into consideration. In cases where the complete clinical spectrum of symptoms has not yet shown or if serum vitamin C levels have only slightly dropped, a comprehensive clinical dermatological examination and skin biopsy are crucial for prompt diagnosis and prevention of consequences.

In patients with unexplained hemorrhagic diathesis and a medical history of dietary abnormalities, vitamin C deficiency should be taken into consideration.

Reference

1. Deirawan H, Fakhoury JW, Zarka M, Bluth MH, Moossavi M. Revisiting the pathobiology of scurvy: a review of the literature in the context of a challenging case. International Journal of Dermatology. 2020 Dec;59(12):1450-7.
2. Mirkovic G, Mutke MR, Muehleisen B. Characteristic Skin Eruptions with a Distinct Histological Pattern Allow Early Diagnosis of Vitamin C Deficiency. Case Reports in Dermatology. 2024 Jan 1;16(1):123-7.
3. Tee JL, Strutton G. Keratosis pilaris with adjacent haemosiderin deposition: a clue to scurvy. Pathology. 2021; 53(5):666–8.