

COSMODERM TIMES

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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:

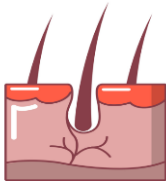
1. CUTANEOUS METASTASES AND THEIR DERMOSCOPIC FINDINGS
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Best Regards,

Medical Team, Micro Labs Limited



Cutaneous Metastases and Their Dermoscopic Findings

Introduction

Cutaneous metastases are malignant cells that form in the dermis and hypodermis from any type of cancer. Although skin involvement in the metastatic process is uncommon and has a poor prognosis, it is critical in the patient's management, treatment, and self-esteem. ^[1] As cutaneous metastases affect about 1-10% of all cancer patients with metastatic illness, they are uncommon in routine practise but crucial. ^[2]

Methods:

The goal of this study is to compile studies on the clinical indicators of cutaneous metastases and the use of dermoscopy in their diagnosis. The literature search yielded a total of 580 citations, with 22 (n=22) of them meeting the inclusion criteria. Only studies that included dermoscopic images were selected for the examination of dermoscopic patterns in cutaneous metastases. The available data on dermoscopic features in cutaneous metastases was summarised using ten (n=10) of the analysed studies.

Results:

Cutaneous metastases have a variety of clinical and dermoscopic manifestations, the most common of which are non-painful skin-coloured nodules with a variety of vascular structures visible on dermoscopy (Fig.1). Painless, hard nodules in the dermis, anatomically near the initial tumour site, metastatic lymph node, or surgical scar are the most typical clinical manifestation of cutaneous metastases. The freshly created lesion might be flesh-coloured, pink, crimson, purple, or even black in hue. Specific kinds of breast cancer include induration (peau d'orange), erysipelas like formations, and erythematous papules that resemble vascular growth. Papular and nodular pink-to-brown lesions have been characterised as a kind of cutaneous metastases in individuals with leukaemia and lymphoma.

The diagnosis of skin metastases does not need any particular steps. The appearance and anatomical location of the newly created lesion, as well as the patient's medical history, can all help with the diagnosis. Although lesion biopsy is regarded the most successful diagnostic procedure, dermoscopy is another non-invasive diagnostic option. Dermoscopy (also known as epiluminescence microscopy or ELM) is a common clinical procedure for examining benign and malignant nevomelanocytic lesions. According to a 2017 research by Christoph Sinz et al. ^[3], dermoscopy can help with the diagnosis and management of nonpigmented skin malignancies and should be used as a supplement to the basic



Fig 1. Patient with multiple cutaneous metastases from breast cancer on her chest and neck Patient with cutaneous metastases from laryngeal cancer



inspection of suspicious lesions.



Fig 2. Dermoscopic image of melanoma cutaneous metastasis.

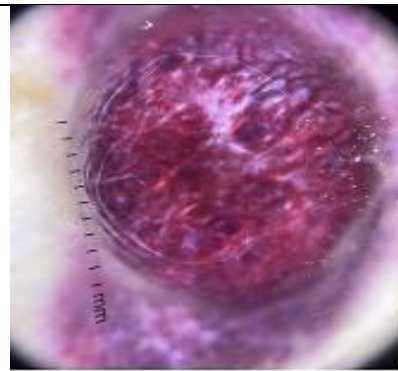


Fig 3. Dermoscopic image of laryngeal cancer cutaneous metastasis.

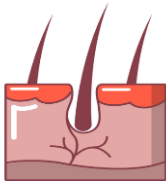
Since vascular structures are more common in melanoma metastases than in initial lesions, they may be a useful diagnostic tool for identifying primary melanoma from metastases. Nonpigmented melanoma metastases have also been found to have vascular patterns (serpentine, hairpin, and other forms of vessels). Peripheral grey spots/globules, pigmentary halo, and perilesional erythema are examples of other dermoscopic patterns. Various presentations of vasculature (ex., linear, dotted, arborizing), structureless regions and yellow patches, as well as scaling, are the most common dermoscopic observations in cutaneous lymphomas (Fig 2 and Fig 3).

Despite the fact that skin metastases are uncommon and frequently indicate a bad prognosis, they are nonetheless important clinically. Dermoscopy is becoming more widely used each year, although case reports and research on the particular dermoscopic characteristics of cutaneous metastases are rare. This might be related to the rarity of secondary cutaneous malignancies in general, or to a lack of dermoscopy skills and use in other specialties other than dermatology. Melanoma and cutaneous lymphomas have the most organised information in the literature on dermoscopic findings in particular tumour metastases. This might be because these patients are often monitored by dermatologists, who are more likely than other experts to employ dermoscopy as a diagnostic technique.

[4]

Discussion:

Despite the fact that skin metastases are uncommon and frequently indicate a bad prognosis, they are nonetheless important clinically. Dermoscopy is becoming more widely used each year, although case reports and research on the particular dermoscopic characteristics of cutaneous metastases are rare. This might be related to the rarity of secondary cutaneous malignancies in general, or to a lack of dermoscopy skills and use in other specialties other than dermatology. Melanoma and cutaneous lymphomas have the most organised information in the literature on dermoscopic findings in particular tumour



metastases. This might be because these patients are often monitored by dermatologists, who are more likely than other experts to employ dermoscopy as a diagnostic technique.

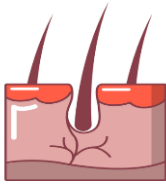
Conclusion:

Cutaneous metastases are uncommon in normal practise, but they must be identified. Pink to erythematous nodules with vascular patterns on dermoscopy are the most common clinical features, while various variations with different kinds of initial lesions and colour patterns have been documented. Because the use of dermoscopy is increasing year after year, a better knowledge of the dermoscopic characteristics in cutaneous metastases should be collected and reported by conducting bigger studies with uniform description criteria.

Cutaneous metastases are an uncommon occurrence, but they have significant clinical implications. With the increasing use of dermoscopy, a better knowledge of the dermoscopic characteristics in cutaneous metastases should be collected and documented.

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Intense Pulsed Light Protocol: Effectiveness in Moderate to Severe Acne Vulgaris of the Chest and Back

Introduction

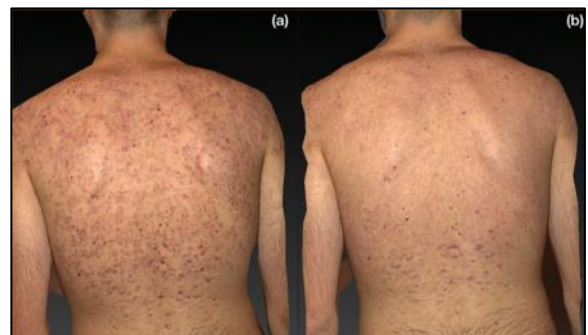
Acne is a chronic inflammatory condition of the pilosebaceous units that primarily affects young people's faces, but can also affect the chest and back. Oral antibiotics, topical retinoids, azelaic acid, benzoyl peroxide, and isotretinoin are the most popular treatments for acne, although various side effects and a lack of long-term remission have been recorded, along with poor patient adherence. ^[1] Intense pulsed light (IPL) has been found to be a successful and safe treatment for acne, with high effectiveness rates, little pain, quick recovery times, and outstanding aesthetic and therapeutic benefits. ^[1]

Methods

The effectiveness, safety, and repeatability of a new IPL procedure as a monotherapy in the treatment of acne of the chest and back were evaluated in this prospective trial. Patients aged 14 to 30 with moderate papulopustular acne on the chest and back (Cook's Acne Grading Scale method 4–6, Pillsbury Scale III–IV) were included in the study (N=50). Each patient had four IPL treatments at two-week intervals during the research.

Results

Excellent Outcome (G-I) was attained in 13/50 patients (26%) after the first session, while G-II was achieved in 25/50 patients (50%) after the second session. An Excellent Outcome was reached by 50% of the patients (25/50) by the fifth session, while a Marked Improvement was attained by 35% of the patients (18/50). There was no significant difference in patient age or gender. Four patients (8%) had a partial response, meaning the inflammatory component was reduced but the papulopustular lesions did not improve. Two patients (4%) did not respond because their clinical condition remained relatively steady. Surprisingly, one patient (2%) reported with a deterioration of her clinical symptoms at the final follow-up appointment.



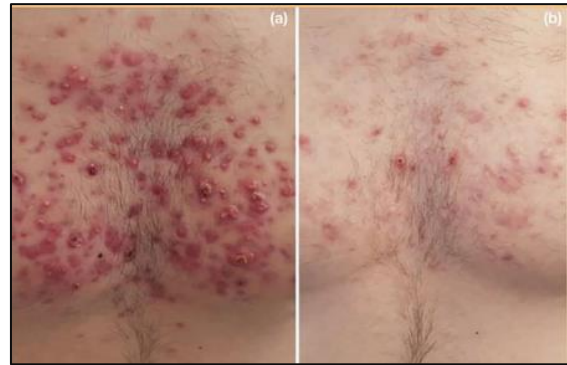
A) Before; and B) after four cycles of 400-nm intense-pulsed light sessions

At the end of the treatment, 96% (48/50) of the patients had improved without any negative effects at the end of the fourth session. When compared to traditional systemic and antibiotic treatment alone, IPL appears to be speedier in reaching outcomes. The most often cited adverse effects. There was erythema and burning, which went away after 96 hours. Pain, on the other hand, was described as minor in the majority of instances or mild within three minutes after the session's finish. Patients' satisfaction levels improved from 0 at the start to 3.5 after two sessions and 7.3 after one month of treatment.



Discussion

Acne vulgaris is a common inflammatory disorder of the pilosebaceous glands that affects mostly teenagers and young adults. The tendency of the pathology to relapse, cause hyperpigmentation, or scarring can cause significant psychological stress; as a result, many treatments have been studied in recent years, in addition to topical or systemic therapies, especially to deal with cases that do not respond to common therapies. According to the literature, there



A) Before and B) after treatment with intense pulsed light for severe chest acne

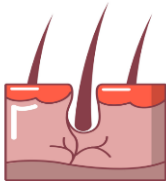
has been a lot of interest in researching lasers as novel therapeutic techniques for acne therapy. From 1,064 Nd:YAG lasers to blue or blue-red light devices, from infrared (IR) lasers to PDT and IPL, physicians from across the world evaluated various comparative studies in order to find the best effective, safe, and economically viable therapy for such a difficult dermatological problem. While blue light has been found to have a significant anti-inflammatory impact on keratinocytes, infrared (IR) lasers (1320, 1450, 1540 nm) and photodynamic treatment (PDT) can produce direct phototoxic damage to sebaceous glands, resulting in decreased gland density and sebum production.

IPL may cause damage to the blood arteries that supply sebaceous glands, resulting in a reduction in sebaceous gland size and/or function. Reduction in oiliness in patients' skin, as well as an improvement in skin tone and texture, in our research. IPL also helps to correct vascular dilation, which reduces erythema in inflammatory acne. After two sessions of therapy, our patients showed a considerable reduction in erythema in this research. In-vitro studies have shown revealed that IPL stimulates collagen and elastic fibre production in the dermis. This action decreases the creation of scars, as evidenced by the fact that the acne lesions in our study healed without scarring.

Conclusion:

IPL provides an excellent tool in the treatment of acne because of its versatility in terms of wavelength, pulse duration, delay, and fluency. Its flexibility might yield significant improvements in the setting of acne's diverse inflammatory and non-inflammatory clinical presentation. IPL's antibacterial and anti-inflammatory properties result in a decrease in the number of lesions and the prevention of new lesions. This study confirmed previous findings that IPL is a safe and effective treatment for severe cases of acne on the chest and back, with excellent aesthetic and therapeutic results in 85 percent of treated patients, while only 10% of patients saw no improvement and the remaining 5% saw a slight worsening.

This study confirmed prior findings that IPL is a safe and effective treatment for severe instances of acne on the chest and back, with great cosmetic and therapeutic benefits in 85 percent of patients.



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Role of interleukin-17 in alopecia areata and non-segmental vitiligo

Introduction

Alopecia areata (AA) and vitiligo are both autoimmune skin disorders. AA is defined by patchy hair loss that begins on the scalp but can spread to other locations, whereas vitiligo is caused by the death of melanocytes and manifests as white patches on any part of the body. Many findings suggest that these illnesses have a similar pathophysiology. Both dermatoses are linked to the presence of other autoimmune disorders and have hereditary risk factors in common. Recent evidence backs up the idea that IL-17 has a role in the aetiology of both AA and vitiligo. ^[1]

Method

The study's goal was to compare and assess interleukin (IL)-17 levels in individuals with AA and non-segmental vitiligo (NSV). To see if the pattern of serum cytokine concentrations may be linked to clinical information and disease activity. 33 patients with AA, 30 patients with NSV, and 30 healthy controls were studied in a cross-sectional research. The ELISA technique was used to determine the quantitative amounts of IL-17 in the blood.

Results

When compared to healthy controls, IL-17 blood levels were considerably higher in AA and NSV patients, but not statistically different in AA and NSV patients (Fig. 1). The mean IL-17 concentration in AA patients was 117.59 23.83 pg/ml, while it was 124.82 27.47 pg/ml in NSV patients. Female and male patients with AA and NSV did not have significantly different cytokine levels. Serum cytokine levels and extent (SALT/VASI), activity or disease duration, personal history of atopy or autoimmune diseases, and family history of AA/vitiligo were all shown to have no significant relationship.

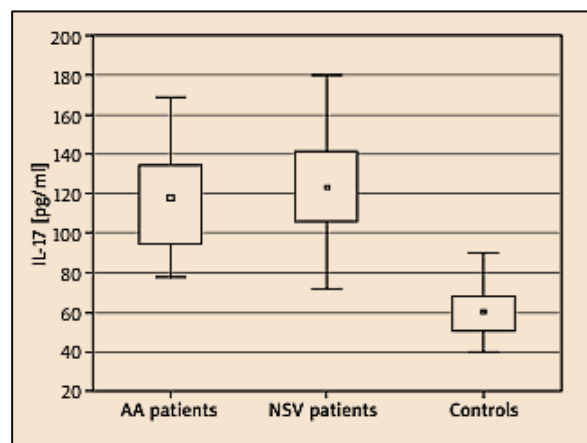
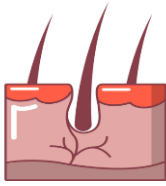


Fig 1. Median serum levels of interleukin (IL)-17 [pg/ml] among patients with alopecia areata (AA), patients with non-segmental vitiligo (NSV) and healthy controls. The Mann-Whitney test revealed a statistically significant difference in serum IL-17 concentrations between AA patients and NSV patients compared to healthy controls

Discussion:

Neutrophil recruitment, Th2 activation to give an effective response to external pathogens, macrophage production of IL-1 and TNF-, and inflammatory mediator matrix metalloproteinases (MMPs) induction are all physiological roles of IL-17. Despite its



critical function in regulating the adaptive and innate immune systems, IL-17 overproduction may have a role in a variety of illnesses. ^[2]

In AA patients, tissue and serum levels of IL-17, IL-22, and B cell-activating factor (BAFF) were considerably greater, according to a research. ^[3] In AA patients, lesional IL-17 and IL-22 levels were significantly higher, according to Loh et al. Furthermore, lesional IL-17, IL-22, and disease severity were found to have favourable correlations. ^[4]

Recent research has focused on the inflammatory mechanisms involved with vitiligo, demonstrating that immunological dysregulation plays a key role in the disease's aetiology. Acharya and Mathur have published a comprehensive review and meta-analysis of the level of IL-17 in vitiligo patients. There were 11 case-control studies in all, involving 626 vitiligo patients and 475 healthy controls. The findings showed that vitiligo patients have considerably higher levels of IL-17. ^[5]

There was also a single-arm pilot research employing secukinumab in active non-segmental vitiligo. The outcomes were unsatisfactory. During the follow-up period, 7/8 patients exhibited evidence of additional depigmentation, despite the fact that 2 patients showed minor repigmentation. Additional investigations were carried out to validate the clinical trial's immunophenotyping results, which indicated that Th17 cells play a distinct function than Th17.1 lymphocytes. In non-segmental vitiligo, these trials hint to a sensitive Th1/Th17.1/Th17 equilibrium. While IL-17 suppression did not show promising outcomes in active vitiligo, focused modulation that interacts with Th17 differentiation into Th17/1 and Th1 might be a novel and promising technique. ^[6]

Conclusion:

There is no study that compares the levels of IL-17 in the sera of AA and NSV patients. The findings supported the concept that AA and vitiligo have common etiopathogenetic pathways and that Th17 and IL-17 play a functional role in the development of both disorders. T cell subpopulation imbalances and complicated systemic cytokine profiles might play a role in the aetiology of AA and vitiligo. The potential therapeutic significance of targeting Th17 for the treatment of AA and vitiligo was emphasised by these findings. However, further research is required before a definitive conclusion can be reached.

Since AA and vitiligo may have overlapping etiopathogenetic pathways, targeted treatments for both AA and vitiligo therapy may be developed. T cell subpopulation imbalances and complicated systemic cytokine profiles may play a role in the development of AA and vitiligo.

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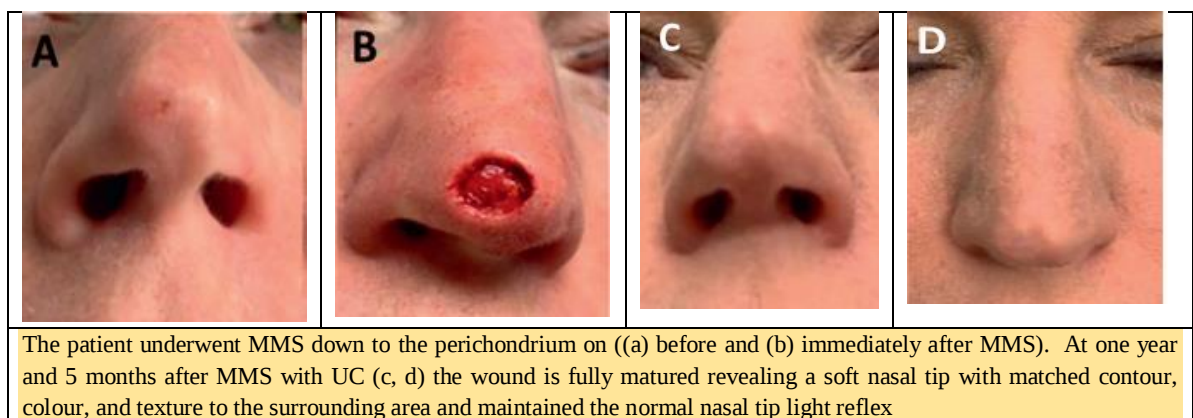
Human Umbilical Cord Cryopreserved for Nose Wound Healing After Mohs Micrographic Surgery

Introduction

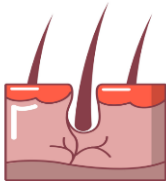
Basal cell carcinoma (BCC) is the most prevalent kind of skin cancer, with a rising global prevalence. The sickness mostly affects elderly Caucasian people and shows up on their faces. Topical medications (fluorouracil and imiquimod), photodynamic therapy, laser treatment, radiation, and surgery are all alternatives for treatment. In areas with a high risk of recurrence, Mohs micrographic surgery (MMS) delivers excellent cure rates while preserving as much normal tissue as possible. If the incision is minor, it can be treated with primary closure; however, if the wound is larger, reconstructive surgery using flaps (local or distant) or skin transplants may be required (split or full thickness).^[1] The umbilical cord (UC) has the same histological features as the amniotic membrane, with the exception that the avascular stroma contains more hyaluronic acid. It was chosen as an adjunctive therapy for this patient because it has been shown to have anti-inflammatory, anti-scarring, and regenerative healing properties in various types of wounds.^[2]

Case Presentation:

A 53-year-old Caucasian woman appeared with a non-healing lesion on her nose that had been persistent for several months. BCC was discovered during a shave biopsy, and the spot healed in one month. Since the patient was on blood thinners for pulmonary emboli at the time, substantial surgical intervention was not recommended; thus, the patient was started on a complete course of topical imiquimod. The patient had been doing well for the previous three years until a recent slowly expanding papule emerged at the same location. The lesion was diagnosed as a recurrent BCC of the nodular infiltrative type after a shave biopsy. MMS was recommended for the patient.



She met with a different plastic surgeon prior to surgery to discuss her surgical options, and his surgical plan was to reconstruct her nose tip with either a skin graft or a flap, depending on the margins. Rather, the patient was educated and consented to a strategy



that included MMS followed by the supplementary use of UC, based on the claimed anti-inflammatory, anti-scarring, and regenerative healing capabilities of UC. On the day of the Mohs surgery, two phases were necessary to achieve tumor-free margins, resulting in an incision measuring 1.0 x1.1 cm in diameter that crossed the midline of the nasal tip, exposing the perichondrium of the nasal alar cartilage.

A UC allograft was cut to wound size and placed to the wound with a nonadherent wet dressing, cotton bolster, and adhesive tape immediately following MMS. The patient was told to keep the bandage on until the next appointment to the doctor. The site had abundant high-quality granulation tissue with low inflammatory response and no signs of infection one week after MMS. At two weeks, rapid re-epithelialization was seen, with full closure at four weeks and a good cosmetic outcome at six weeks. Others have left the UC allograft in situ for up to 3 weeks, according to the literature. During the 4 weeks of wound healing, the graft was reapplied with a fresh UC allograft during weekly dressing changes. There was an outstanding cosmetic outcome one year and five months following MMS, as measured by surrounding skin colour, shape, and texture, with a minimum residual scar.

Discussion

Following a large excision down to the perichondrium for a recurring BCC of the nasal tip, this case report illustrates a satisfactory cosmetic outcome utilising cryopreserved UC to expedite post-MMS wound healing. Without any extra surgical intervention, the incision was completely healed 4 weeks following MMS. In comparison, depending on the wound depth, size, and metabolic health of the patient, normal healing durations for secondary intention of identical wounds might take 2 to 3 times as long.

The UC utilised in this study is a cryopreserved product that maintains HA-rich extracellular matrix and growth factors/cytokines but devitalizes all live cells. It's kept at 40°C to 80°C and may be used right away without rehydrating. Because it is ten times thicker and contains larger amounts of biological components than pure amniotic tissue, this UC allograft was chosen above any other form of natal membrane. Furthermore, complicated diabetic foot ulcers with exposed bone, tendon, muscle, and/or joint capsule, orthopaedic joint issues, spina bifida, radiation-induced wounds, and ischemic wounds have all been effectively treated with UC tissue. ^[3]

The biological effects of UC have been attributed to a unique extracellular matrix component known as the Heavy Chain Hyaluronic Acid/Pentraxin-3 complex (HC-HA/PTX3), which modulates the local inflammatory environment by inducing apoptosis of activated inflammatory cells and promotes an antiscarring effect by downregulating transforming growth factor (TGF), which prevents myofibroblast formation. The features of other accessible xenografts, such as acellular dermis, which is largely employed as a mechanical framework that offers a structure for host cell migration and proliferation, contrast with these restorative biological processes. This was proved in a head-to-head research, in which UC was shown to minimise inflammation, cell death, and promote superior cellular structure when compared to acellular dermal matrix. ^[4]



Conclusion

In this case, UC was chosen to decrease the recognised hazards of standard therapy, such as contracture, changed pigmentation, and contour mismatch. Overall, these qualities may explain why supplemental use of cryopreserved human UC speeds up post-MMS wound healing in the nose tip, especially in patients with major comorbidities or who refuse to undergo a formal surgical reconstruction.

UC was chosen to reduce the known risks of standard treatment, including as contracture, pigmentation changes, and contour mismatch.

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