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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:

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Looking forward to your valuable feedback.

Best Regards,

Medical Team, Micro Labs Limited.

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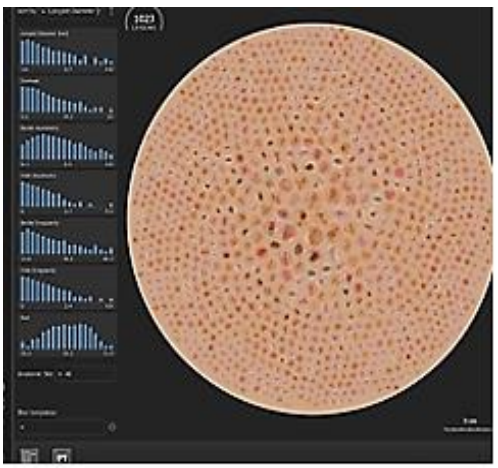
1) Using 3D total body photography to describe the skin surface ecosystem

The way skin cancers are identified is changing due to advanced imaging technologies, which can be aided by automated analysis. The use of digital 3D complete body photography enables the construction of a 3D body map and a digital avatar depiction of the patient, with 360-degree rotation to see practically the full skin surface. [1] Digital 3D total body photography improves skin monitoring efficiency by allowing for the rapid and thorough capture of high-resolution macroscopic pictures, which are then combined with dermoscopic images of specific lesions. It creates a precise baseline record of the skin's surface to accurately identify all skin lesions, as well as a comparison record to track changes in existing skin lesions and detect new ones over time. [2,3]

- Advances in artificial intelligence, machine learning, and mobile teledermoscopy, combined with 3D complete body imaging, give a unique knowledge of the biological skin surface ecosystem and have the potential to greatly enhance the early identification of melanoma

The effects of 3D complete body photography on sequential dermoscopic imaging were investigated in a research. [4] The research focuses on a set of three carefully chosen skin lesions derived from 3D complete body photographic avatars of people at high risk of melanoma. The photos were compared to dermoscopy images to see if there had been any significant changes over time. According to the findings, 3D total body imaging can assist offer context to single lesion dermoscopy pictures and can help detect new lesions. When it comes to monitoring cutaneous lesions, 3D total body photography adds to the picture by presenting lesions in their "environment," or the context of the surrounding skin, which allows for a more accurate overall evaluation and diagnosis than dermoscopy alone.

Cherry angiomas are a frequent benign vascular lesion with an uncertain etiology that was investigated in a study. [5] The size and quantity of angiomas vary by age, sex, and body area, according to the 3D body maps of participants (n = 164) in the Mind Your Moles research. The chest and belly were the most prevalent sites for angiomas, followed by the back, and males had more angiomas than women, with a median age of 29 and 18,



respectively. Previous angioma prevalence studies have concentrated on just one body location, such as the chest, and classed angiomas in a binary form, that is, existence of angiomas or presence of "eruptive" angiomas, with the latter frequently decided by an arbitrary cutoff of 10 or 30. The technique provided numerical quantification of angiomas in this study by counting the precise number of angiomas and their body site distribution throughout the complete cutaneous landscape using 3D total body imaging. Understanding the distribution of angiomas can help us better understand their aetiology and whether there is a link between numerous cherry angiomas and skin cancers.

In conclusion, advances in artificial intelligence, machine learning, and mobile teledermoscopy, combined with 3D complete body imaging, give a unique knowledge of the biological skin surface ecosystem and have the potential to greatly enhance the early identification of melanoma. The article goes through different elements of how 3D total body photography and sequential imaging may be utilized to improve our understanding of the human skin surface ecosystem and help us rethink how we give dermatological treatment.

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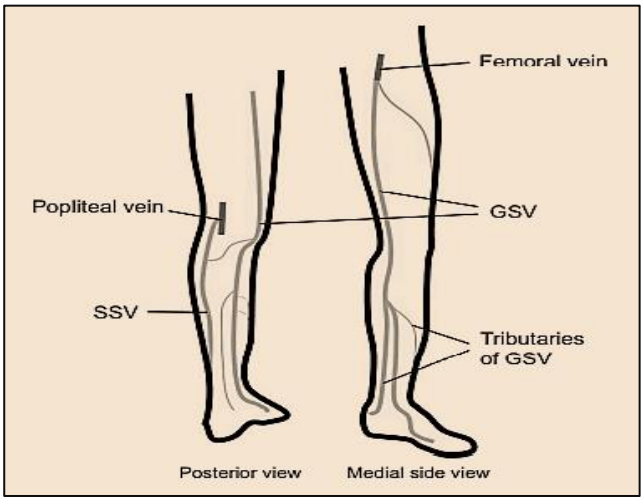
2) Venous Insufficiency: A trigger in Pigmented Purpuric Dermatosis?

- **The study concluded that that VI is a clear provoker of PPD.**
- **PPD and VI had a favourable laterality connection, as did PPD dispersion and the vein involved.**

Pigmented purpuric dermatosis (PPD) is a cutaneous disorder characterized by non-palpable petechiae and purpuric patches on a brownish background. [1] PPD is split into five subtypes: (1) Schamberg disease, (2) Majocchi's purpura annularis telangiectodes, (3) Gougerot and Blum's pigmented purpuric lichenoid dermatosis, (4) Doucas and Kapetanakis' eczematid-like purpura, and (5) Lichen aureus. PPD is usually harmless, although it can be persistent, progressive, and resistant to most therapies. [2] While the exact origin of PPD is unknown, various co-factors have been linked to it, including diabetes, dyslipidemia, hepatitis B and C infections, allergic responses, trauma, and chronic venous insufficiency (VI) of the lower limbs.

The impairment of venous drainage in the lower extremities causes VI, which is a chronic disorder. Varicose veins, edema, skin pigmentation, and ulceration are only a few of the clinical signs of Chronic VI. The location and connection of the venous system in the lower extremities are categorized. The superficial, deep, and perforating veins are all included in this category. The study hypothesized that because the fundamental pathogenic mechanism of PPD is the rupture and dilatation of end capillaries in the papillary dermis, a malfunction of the superficial venous system might be the primary cause of skin abnormalities. As a result, this study focused primarily on the superficial venous system, which includes Great Saphenous Vein (GSV), Small Saphenous Vein (SSV), and their tributaries. [3]



The goal of this study was to determine if PPD and VI had a causal association. A total of 118 individuals with PPD were studied retrospectively. In 56 PPD patients, Doppler

ultrasonography of the lower extremities was done, and they were split into two groups: PPD with VI and PPD without VI. The clinical characteristics of the two groups were compared. The correspondence ratios between PPD and VI literalities were measured, as well as between the PPD distribution and the veins involved, in the PPD with VI group. Only 15 patients in each group were treated with mid-potency topical steroids, and the treatment results were categorised into four categories based on clinical pictures taken three months after the start of treatment. (1) fully resolved, (2) much improved, (3) somewhat improved, and (4) unimproved or exacerbated. A Chi-square test was used to analyze the results.

The mean age of onset was 53.5 years in the PPD with VI group, and 52.1 years in the PPD without VI group, according to a comparison of demographics and comorbidities between the two groups. In both groups, the gender ratio was comparable. In both groups, dyslipidemia, diabetes mellitus, and hypertension were the most prevalent concurrent underlying diseases. PPD with VI had a much larger affected area than PPD without VI. The most prevalent colour of the PPD lesion in both groups was light brown, followed by red, dark brown, and black. Despite the fact that both groups' major colours were light brown and red. In the PPD with VI group, the proportion of black/dark brown hue was much greater than in the other. The PPD with VI had a considerably longer illness duration than the other group. The majority of the patients demonstrated significant or partial improvement. Completely resolved, greatly improved, slightly better, and unimproved or exacerbated were the therapy results. Treatment responses differed significantly between the two groups.

Skin ulcers or stasis dermatitis have been linked to superficial venous system malfunction. However, no conclusive evidence of a link between PPD and VI has been found. PPD patients had Doppler ultrasonography for the assessment of VI incidences in the first trial, according to the findings. [4] They discovered that 75% of PPD patients also have VI, indicating that the two may be linked. Due to the limited sample size and the lack of a control group, they were unable to establish a definite association. VI was found in 62.5 percent of PPD patients in the current research. VI is linked to PPD, according to both research' findings.

The study demonstrated a definite causal link between PPD and VI in the PPD with VI group. The correspondence ratios between PPD and VI lateralities, as well as between PPD distribution and the vein involved, were calculated. We discovered a favourable association

between PPD and VI in terms of laterality. PPD lesions were more likely to be distributed on the same side of the lower extremities when VI occurred on just one side. Furthermore, the kind of veins affected, i.e. GSV or SSV, and the distribution of PPD lesions had a favourable connection.

According to the findings, GSV-related PPD is more common on the anterior and medial sides of the lower leg, whereas SSV-related PPD is more common on the posterior and lateral sides. [5] PPD lesions were more likely to be found in the medial and anterior portions of the body in cases with GSV insufficiency, which is consistent with GSV's ascending pathway. While PPD lesions placed medially and anteriorly were more likely to be linked with GSV (64.1%) than SSV (18.9%), lesions positioned laterally and posteriorly were more likely to be related with SSV (66.7%) than GSV (15.4%).

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3) A Systematic Review of the Literature on Mucosal Respiratory Syndrome

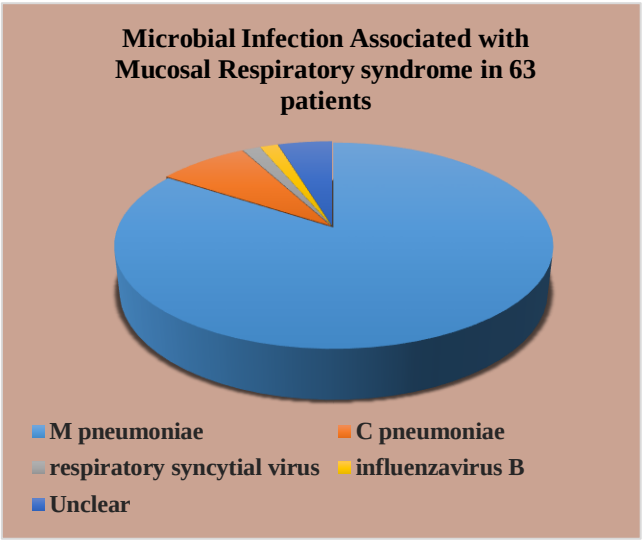
Erythema multiforme is an acute skin condition marked by the appearance of symmetrical fixed red lesions, some of which progress to characteristic papular "target" lesions. Mucosal lesions, which appear a few days after the rash appears, distinguish between two forms of erythema multiforme: erythema multiforme minus affects just one mucous membrane, and erythema multiforme majus affects two or more mucous membranes. [1] Pre-teenagers, adolescents, and young adults are the main victims of Erythema multiforme. In certain cases, a mycoplasma infection causes only mucosal lesions rather than cutaneous ones. A mucosal respiratory syndrome is a name used to describe the latter illness. [2]

- The study analysis indicates that erythema multiforme precipitated by M. pneumoniae and C pneumoniae may be characterized by a phenotype of mucous membrane involvement without cutaneous lesions.

Mucosal respiratory syndrome is diagnosed in patients who meet two of the following criteria: (a) an isolated mucositis affecting at least 2 mucous membranes (including the oral region), with no skin involvement (or lesions affecting less than 0.5 percent of the skin surface and no cutaneous target lesion); (b) a symptomatic respiratory infection or positive microbiological testing for M. pneumoniae, C. pneumoniae, C. psittaci, C. burnetii, F. tularensis, or Legionella species; Mycoplasma was thought to be responsible for cases of mucosal respiratory syndrome caused by M. pneumoniae and another microbe (or a pharmaceutical co-trigger). Data was gathered from each maintained instance using a piloted form and transcribed onto a separate spreadsheet. Demographics, clinical, and laboratory data were among the data sorted from each patient that met the study's requirements.

A total of 63 patients were recruited for the study. In 54 cases, reporting completeness was excellent, while in the other nine cases, it was good. In addition to oral mucositis, the great majority of individuals also had ophthalmic and vaginal mucositis. In addition, three instances had colorectal involvement. 6 instances were linked with laboratory findings compatible with either an M. pneumoniae or C. pneumoniae infection, but not with respiratory symptoms or signs. The laboratory diagnosis of M. pneumoniae infection was made in 53 and that of C. pneumoniae infection in 5 cases. In a case where Epstein-Barr virus

infection was diagnosed, immunoglobulin M antibodies directed against the Epstein-Barr viral capsid antigen were discovered. There have been no cases of C. psittaci, C. burnetii, F. tularensis, or Legionella species infection that have been temporally linked to C. psittaci, C. burnetii, F. tularensis, or Legionella species infection. Epstein-Barr virus or influenza virus B were linked to two infections at the same time.



These findings confirmed that M. pneumoniae infection causes mucosal respiratory syndrome in the great majority of patients, and it also shows for the first time that about 10% of cases are caused by C. pneumoniae, another atypical bacterial pathogen. However, no instances of mucosal respiratory syndrome linked to C. psittaci, C. burnetii, F. tularensis, or Legionella species infection were reported in the investigation. Finally, there was a probable link to Epstein-Barr virus or respiratory syncytial virus infection. Other terms used in the research include atypical Stevens-Johnson syndrome, Stevens-Johnson syndrome without skin lesions, erythema multiforme majus without skin lesions, and M. pneumoniae-associated isolated mucositis, in addition to the more common but descriptively appropriate and convenient term mucosal respiratory syndrome.

The mucosal respiratory syndrome caused by atypical bacterial infections like M. pneumoniae is poorly understood. Erythema multiforme caused by M pneumoniae is more like drug-induced erythema multiforme than herpes-associated erythema multiforme in terms of clinical characteristics and histology. In addition, investigations looking for Mycoplasma pneumonia deoxyribonucleic acid came up empty. As a result, the etiology of M pneumoniae-associated erythema multiforme is now thought to be primarily indirect and immune-mediated. [3,4]

Antimicrobials, which expedite atypical pneumonia recovery, are largely believed to have no effect on the course of mucocutaneous symptoms. The treatment is supportive and based on the severity of the clinical presentation. [5] Topical corticosteroids can help with mild

instances. In patients with severe mucosal involvement, adequate fluid intake and pain management should also be considered. [6] A multidisciplinary team led by a dermatologist is most equipped to deal with severe instances. It is currently unable to provide systemic therapeutic recommendations.

The results of the study analysis indicate that erythema multiforme precipitated by M. pneumoniae and C pneumoniae may be characterized by a phenotype of mucous membrane involvement without cutaneous lesions. The results of this analysis prompts us to consider the designation “rash and mucositis associated with atypical respiratory pathogens.”

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4) Two Case Reports of Calcinosis Cutis Using Ultrasonography in Dermatology

- Dermatologists can receive real-time data and achieve long-term therapy success with ultrasonography because of its speed and non-invasive nature.
- Ultrasonography has also been employed in dermatology as an interventional tool.

Ultrasonography has various advantages over other radiologic techniques, including its speed and non-invasiveness. Outpatient clinics and hospitals can benefit from portable ultrasonography, which enables for assessment at the point of care in addition, it is desired to owe to the lack of secondary radiations with the advancement of technology. These benefits and diagnostic values are further strengthened by a newer generation of ultrasound machines. [1]

Calcinosis cutis is an uncommon condition that causes calcium deposits in the skin and subcutaneous tissues. Dystrophic, metastatic, idiopathic, and iatrogenic are the four primary kinds depending on the etiology and related disorders. There is no agreed-upon therapy, thus diltiazem, minocycline, topical thiosulfate, and surgical techniques are frequently employed. To diagnose calcinosis cutis, a patient's medical history and laboratory results should be reviewed to look for any related connective tissue illnesses or metabolic imbalances.

Despite the fact that a physical examination can find the lesion, a skin sample is required to confirm the diagnosis. Calcinosis cutis can also be diagnosed with sonography, especially if the lesions are hidden in healthy skin. [2] Two cases of calcinosis cutis were described in the research, demonstrating the diagnostic value of dermatologic ultrasonography. In addition, the usage of ultrasonography in the dermatology sector was examined.

A solitary, skin-coloured, palpable lump on the medial side of the right lower thigh has been persistent for four years in a 62-year-old female patient. She had no prior trauma, intravenous injection at the lesion site, or other medical histories that were relevant. There were no anomalies in the levels of calcium, phosphorus, or parathyroid hormone in the blood. The lesion was only palpable because it was beneath healthy skin. The results of the sonography indicated linear hyperechoic deposits in the subcutaneous tissue, as well as a posterior acoustic shadow.

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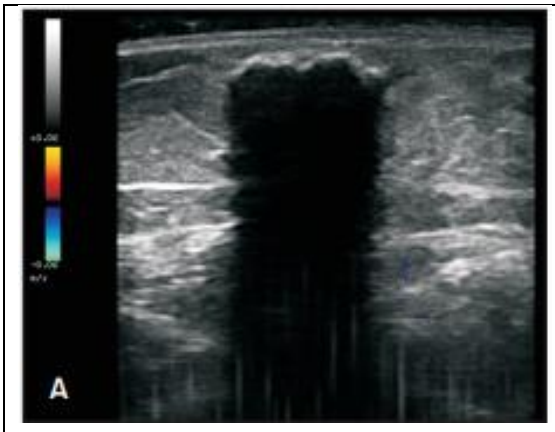
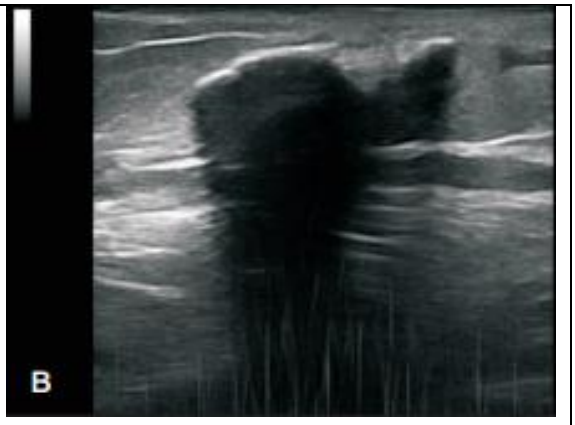
There was no vascularity surrounding the hyperechoic deposits on coloured Doppler testing (15 MHz, linear probe). Skin biopsy was conducted after a tentative diagnosis of tumors with calcification, including calcinosis cutis, and histological characteristics compatible with calcinosis cutis were verified. Yellowish calcium materials were discovered during the biopsy and curettage was used to remove them. Ultrasonography was used to evaluate the results four weeks following the operation. Recurrence was indicated by increased hyperechoic linear deposits. The patient was referred to the plastic surgery department for the thorough removal of the tumor.

	
(A) Linear hyperechoic deposits located in the subcutaneous tissue and observed as a posterior acoustic shadow	(B) Four weeks after curettage, hyperechoic deposits recurred

A skin-coloured, deep-seated hard lump on the left temple was discovered in an 18-year-old female patient. The lesion was discovered ten years ago and has gradually grown in size; there was a slight pain when pressure was applied. The lesion, however, had remained unaltered for several years, and there had been no discharge from the lesion. A firm and moderately linear lump were palpated during the physical examination. She has no substantial medical or trauma history. Blood tests were not carried out. Sonography indicated linear hyperechoic deposits in the subcutaneous tissue without vascularity and posterior acoustic shadowing. A skin biopsy was taken, and only yellowish calcium materials were found during the investigation, with no nodule or mass lesion. Calcinosis cutis was diagnosed based on histopathologic observations of calcified elements in the subcutaneous tissue. For a full excision, the patient was sent to the plastic surgery department. The consent papers for publishing all photographic material from the patients were obtained.

Ultrasonography is used to identify cutaneous calcifications, which are prevalent dermatologic conditions. Because sound waves cannot penetrate calcium deposits, they appear as posterior acoustic shadows on the sonography surface of calcium deposits that are very thick Foreign body responses, pilomatricomas, and calcified epidermal cysts can show cutaneous calcifications on the skin, they should be evaluated in the differential diagnosis ultrasonography. [3] The objective information received by ultrasonography can aid in the diagnosis of a lesion and the subsequent assessment or treatment of it. The lesion could only be felt on palpation in the circumstances mentioned above. However, sonography was used to pinpoint the exact position and features of the subcutaneous lesion. Although histopathologic features are used to identify calcinosis cutis, the location of the lesion or the patient's overall health may make biopsy challenging. As a result, clinical symptoms and sonographic results are frequently used to support the diagnosis. Ultrasonography can be used to assess therapy efficacy in addition to its diagnostic utility.

Dermatologists can receive real-time data and achieve long-term therapy success with ultrasonography because of its speed and non-invasive nature. Ultrasonography has also lately been employed in dermatology as an interventional tool. [4] Ultrasonography can also be utilized in cosmetology. Adverse occurrences can be avoided during filler injections, for example, by using ultrasonography before and after the procedure. [5] Furthermore, adverse events like abscesses or vascular impairment can be detected right away.

It is important to underline the importance of ultrasonography in dermatology. Both dermatologists and patients profit from it because of its non-invasiveness and cost-effectiveness. Furthermore, the effectiveness of ultrasonography depends on the clinician's expertise and skill. As a result, dermatologists should be aware and skilled in ultrasonography.

References:

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