
**Abstract N°: 79**

# Diagnosis of Actinic Cheilitis with optical coherence tomography, line-field confocal optical coherence tomography and reflectance confocal microscopy

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**Introduction & Objectives:** A prolonged exposure to ultraviolet radiation from sunlight can cause actinic cheilitis (AC), a chronic inflammatory disease of the lip. Although AC is typically a clinical diagnosis, a punch biopsy might be necessary to exclude the possibility squamous cell carcinoma (SCC), particularly in hyperkeratotic lesions. While optical coherence tomography (OCT) and Linefield optical coherence tomography (LC-OCT) are well established diagnostic devices in the detection of actinic keratosis (AK), there have been no reports in the differentiation of AC yet. This study aimed to evaluate different non-invasive imaging techniques as diagnostic tools in the detection of AC

**Materials & Methods:** Eighteen patients with clinical or histopathological diagnosis of AC were examined with dermoscopy, reflectance confocal microscopy (RCM), LC-OCT and OCT. Imaging criteria were evaluated based on previous reports and compared to one another.

**Results:** We identify common dermoscopic features in AC, including white and red areas (100 % of the patients) as well as polymorphic vessels (100% of the patients) and scaling (89% of the patients). In OCT and LC-OCT, a thickened epidermis (100 % vs. 94%) and stratum corneum (83% vs 89 %) as well as hyperreflective entry signals (89% vs 94%) can be named as frequent criteria, while in RCM and LC-OCT an atypical honeycombed pattern (100%) and marked vascularization appear to be common features.

**Conclusion:** Our findings support the use of OCT as well as LC-OCT in the diagnosis of precancerous epithelial lesions and support the equivalence to RCM, identifying typical structural changes in all of the patients and securing the diagnosis of AC. We therefore propose vertical non-invasive imaging devices as reliable method in the diagnosis of AC.


**Abstract N°: 393**

**Diagnostic Performance of AI-based smartphone app for detecting malignant skin lesions in Latin American skin types.**

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**Introduction & Objectives:** Early skin cancer detection is crucial for improved outcomes. AI-powered smartphone apps offer accessible, rapid lesion assessment for early skin cancer detection. The AI-based smartphone used for this research combines AI and dermatologists' checks to assess the risk of skin cancer from smartphone images. Performance has proven to be good in skin phototypes I-III. In the present study we are evaluating this AI based smartphone app´s performance in a Colombian population, mainly consisting of phototypes III-IV.

**Materials & Methods:** Skin lesions of adult patients who attended the Hospital Universitario San Ignacio, Bogotá, between June 2024 - February 2025, were included. Then, using the AI-based smartphone app, they were assessed and compared with the clinical diagnosis, for benign lesions, or histopathological diagnosis for suspected malignant lesions. Primary outcomes were sensitivity and specificity.

**Results:** 653 lesions from 269 patients were evaluated. Most lesions were in phototypes III and IV (35.3% and 38.3% respectively). Mean patient age was 60 years. The AI smartphone app correctly identified 86/96 malignant lesions as high risk resulting in 90% sensitivity and correctly identified 450/489 benign lesions resulting in 92% specificity.

**Conclusion:** The results of this study in a diverse Latin American population suggest that this tool can enhance early detection in resource-limited settings with intermediate skin pigmentation, potentially reducing global disparities in skin cancer outcomes by optimizing referral to dermatology services. **


**Abstract N°: 643**

**Line-field confocal optical coherence tomography (LC-OCT) correlates of dermoscopic globules**

Giulio Cortonesi[1], Vittoria Cioppa[1], Pietro Rubegni[1], Elisa Cinotti[1]

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**Introduction & Objectives:**

A subset of melanocytic lesions is characterized by the presence of round to oval globules, which can be distributed throughout the lesion. The presence of regularly distributed globules at the periphery of a lesion indicates horizontal growth in a nevus. However, peripheral globules may also be found in melanomas, particularly when irregularly distributed at the lesion's edge. A novel optical technique, line-field confocal optical coherence tomography (LC-OCT), has been developed to provide high-resolution, deep-penetration, in vivo imaging for various conditions. LC-OCT incorporates an integrated video dermoscope, allowing real-time correlation between dermoscopy and LC-OCT findings.

**Materials & Methods:**

The first case involved a traumatized lesion on the left posterior scalp of a 73-year-old woman. Large dermoscopic globules corresponded to superficial erosions and keratinocyte proliferation on LC-OCT, excluding a melanocytic lesion. Histopathological examination confirmed a clonal seborrheic keratosis. The second case was a lesion in the lumbosacral region of a 65-year-old man. Large globules were identified and corresponded to hyper-reflective keratinocytes. LC-OCT ruled out a melanocytic lesion, which was initially suspected based on dermoscopic findings. Histopathological examination confirmed seborrheic keratosis. The third case was a lesion in the left mandibular cheek of a 25-year-old woman, clinically suspicious for lichen planus-like keratosis. Large globules were observed, corresponding to melanocytic aggregates on LC-OCT, suggesting a nevus. Histopathological examination confirmed a Reed/Spitz nevus. The fourth case involved a lesion on the right upper arm of a 70-year-old man, initially suspected to be a dermal nevus. LC-OCT revealed large, round areas densely packed with cells in the upper dermis, suggestive of melanocytic nests, confirming the lesion's melanocytic nature. Histopathology confirmed a compound nevus.

**Results:**

Through LC-OCT, we were able to observe vertical, histology-like, three-dimensional images of the histological correlates of globules. Globules are well-demarcated, round to oval structures, aggregated in clusters or located at the periphery of melanocytic lesions. Notably, clinically and dermoscopically indistinguishable globules were revealed to be either pigmented keratinocyte aggregates or melanocytic nests on LC-OCT, allowing differentiation between epithelial and melanocytic lesions.

**Conclusion:**

In conclusion, this study confirms the utility of LC-OCT in identifying specific globular patterns, providing additional information beyond clinical and dermoscopic evaluation, and potentially reducing unnecessary excisions of benign skin lesions. Further studies with larger sample sizes are needed to validate our findings.


**Abstract N°: 646**

**Noninvasive imagine technique (Reflectance Confocal Microscopy, and Line-Field Confocal Optical Coherence Tomography) for the evaluation of clonal seborrheic keratosis in a dark skin male patient**

Giulio Cortonesi[1], Vittoria Cioppa[1], Pietro Rubegni[1], Elisa Cinotti[1]

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**Introduction & Objectives:**

Line-field confocal optical coherence tomography (LC-OCT) is an advanced, non-invasive imaging modality that combines the principles of optical coherence tomography (OCT) and reflectance confocal microscopy (RCM) to provide high-resolution images of the skin at both epidermal and superficial dermal levels. This technique enables real-time visualization of cellular and architectural details, allowing for improved diagnostic accuracy in various dermatological conditions. LC-OCT has been widely applied for the non-invasive diagnosis of infectious, inflammatory, and neoplastic skin diseases. Among the numerous cutaneous lesions evaluated with LC-OCT, seborrheic keratoses (SKs) represent a common benign epidermal tumor with various histopathological subtypes, including the clonal variant. Clonal seborrheic keratoses (CSKs) are characterized histologically by intraepidermal nests of basaloid or squamous cells and may exhibit features overlapping with other pigmented lesions, such as clear cell acanthoma and melanoma.

**Materials & Methods:**

A black patient presented to our dermatology clinic for the appearance of a rapidly growing nodular skin lesion on the thigh. The growth was interpreted as a nodular melanoma by the general practitioner. On clinical examination, the growth appeared nodular with a homogeneous color pattern. On dermoscopy, the lesion had a pseudoreticulum that could appear to be a melanocytic lesion. Under reflectance confocal microscopy (RCM) it showed well-defined, hyperreflective nests in the epidermis, with regular cell architecture. The basal layer exhibits acanthosis and papillomatosis, while the dermoepidermal junction appears irregular, without atypical or invasive features. Il LC-OCT it showed well-defined, hyper-reflective epidermal nests with regular cell structure. The epidermis is thickened, and the dermoepidermal junction appears irregular, but no invasive or atypical features are present, distinguishing it from malignant lesions. Histological examination revealed clonal seborrheic keratosis.

**Results:**

Accurate diagnosis of CSKs is crucial to avoid unnecessary excisions and misinterpretations. Recent studies have demonstrated the utility of LC-OCT in differentiating CSKs from other skin neoplasms. This technology provides valuable morphological details, such as well-demarcated exophytic growth, intraepidermal pseudocysts, and the presence of polycyclic and cerebriform structures, which are highly characteristic of SKs. Furthermore, LC-OCT can distinguish CSKs from other benign and malignant lesions based on their distinctive reflectance patterns and architectural arrangements.

**Conclusion:**

In conclusion, RCM and LC-OCT represents a promising advancement in dermatological imaging, providing high-resolution, in vivo histology-like images that aid in the diagnosis of various skin conditions, including CSKs. Further research and technological advancements will continue to refine its diagnostic capabilities and expand its clinical applications.


**Abstract N°: 648**

# Non-invasive Imaging Techniques for the Diagnosis of Chromoblastomycosis

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## Introduction & Objectives:

Chromoblastomycosis is a fungal infection that results from traumatic implantation of dematiaceous fungi through the skin. It manifests clinically as oligosymptomatic or asymptomatic skin lesions, which would explain why patients only tend to seek medical care after months or even years of living with the disease. Other common presentations include tumoral, cicatricial and sporotrichoid forms. Direct microscopy proves the presence of 5-12 µm sized thick-walled dark-colored structures called Medlar bodies. Histopathology shows pseudoepitheliomatous hyperplasia with intraepidermal abscess and Medlar bodies.

## Materials & Methods:

A young girl presented with a facial erythematous scaly plaque with central clearing that had been present for three months. Dermoscopy at X20 showed dilated hyperkeratotic hair follicles and tiny brown dots that were better visible at X400. Reflectance confocal microscopy and line-field confocal optical coherence tomography revealed enlarged hair follicles and multiple hyperreflective roundish structures in the superficial dermis. RCM also found numerous hyperreflective dendritic cells inside the epidermis and the hair follicle epithelium. Histopathology demonstrated a granulomatous dermal infiltrate appearance with giant cells resorbing exogenous material. Direct microscopy proved the presence of fungal structures suggestive of chromoblastomycosis.

## Results:

Dermoscopic features have been reported in few cases as white areas corresponding to hyperkeratosis, orange areas corresponding to a granulomatous infiltrate, and reddish black dots and globules related to hemorrhage and the transepidermal elimination of fungal elements. Widespread brown dots seen in our case have also been described (sand-like pattern), and we hypothesized that they could correspond to fungal elements within the papillary dermis. We highlight that super-high magnification dermoscopy at X400 can better indicate these structures, which are barely visible at X20 dermoscopy, as has already been reported in pigmented mycosis. Moreover, hair follicle hyperkeratosis was an additional feature in our case, possibly due to the facial site.

## Conclusion:

In conclusion, X400 dermoscopy, RCM, and LC-OCT represent new imaging techniques that can be used as innovative tools for the diagnosis and for the monitoring of skin tumors and infectious and inflammatory diseases. In this case, they were useful for the diagnosis of chromoblastomycosis through the identification of the possible presence of the fungal elements.


**Abstract N°: 680**

**On-site comparison of harmonic generation microscopy and confocal microscopy for basal cell carcinoma evaluation**

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**On-site comparison of harmonic generation microscopy and confocal microscopy for basal cell carcinoma evaluation**

**Introduction & Objectives**

Reflectance confocal microscopy (RCM) is a widely used non-invasive optical imaging technique in dermatology. While RCM demonstrates high sensitivity for diagnosing basal cell carcinoma (BCC), its specificity remains lower than that of other novel noninvasive methods, like line-field confocal optical coherence tomography. Notably, the sensitivity of RCM in detecting aggressive BCC subtypes is considerably reduced. A significant limitation of RCM is its lack of chemical specificity. The images are generated through linear scattering at interface boundaries, with brightness variations influenced by the size and orientation of the scatterers. In contrast, harmonic generation microscopy (HGM) has the potential to provide more detailed imaging in virtual skin biopsies. It offers superior cellular resolution and deeper tissue penetration than RCM. Furthermore, HGM utilizes third harmonic generation (THG) signals to map cellular structures and melanin distribution, and second harmonic generation (SHG) signals to highlight collagen fibers, facilitating more accurate image interpretation.

The study aims to evaluate the effectiveness of HGM in assessing BCC, particularly in comparison to RCM. To date, no direct comparisons have been made between HGM and RCM images obtained from the same BCC lesion site. This research seeks to elucidate the differences between these imaging modalities and explore their potential complementary roles.

**Materials & Methods**

For patients with suspected malignant skin tumors (BCC), a tissue sample will be obtained from the tumor-normal skin junction after wide excision, ensuring safe margins without impacting the pathological diagnosis or staging. These samples will be analyzed using HGM and RCM simultaneously, without interfering with the patient's diagnosis or treatment plan.

**Results**

Using the on-site HGM: RCM system, multiple morphological features of BCC were identified. HGM images demonstrated well-defined tumor islands, with THG-bright tumor cell nests distinctly separated from the surrounding SHG-bright collagen. In contrast, RCM images showed less sharply defined tumor islands, though they were still discernible as dark collagen-rich regions encircling brighter tumor nests. Dendritic structures within the tumor islands were clearly visible in both HGM and RCM images. Unlike the round-to-oval morphology of normal basal cells, tumor cells exhibited polymorphic shapes with irregular, extended borders forming a dendritic pattern. Peripheral palisading at the tumor nest margins was also evident. Additionally, collagen bundles surrounding the tumor nests in SHG images appeared coarser and thicker than those in normal skin.

**Conclusion**

On-site analysis highlighted distinct differences and advantages between HGM and RCM images for BCC evaluation. Both HGM and RCM have shown effectiveness in BCC assessment. However, in on-site comparisons, HGM images offered superior detail in differentiating tumor nests from the surrounding extracellular matrix. These characteristics make HGM particularly beneficial for BCC diagnosis, potentially accelerating the learning curve and enhancing diagnostic accuracy. This study supports the complementary role of HGM and RCM in advancing virtual biopsy applications.


**Abstract N°: 1001**

**Artificial Intelligence in the diagnosis of non-melanoma skin cancer and treatment with the combination of interferon alfa 2b and gamma**

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**Title: Artificial Intelligence in the diagnosis of non-melanoma skin cancer and treatment with the combination of interferon alfa 2b and gamma.** **

**Introduction & Objectives:**

Artificial intelligence (AI) has emerged as a transformative tool in dermatology, significantly enhancing the early diagnosis of skin cancer. By generating predictive models, AI can identify patients with the poorest prognosis, enabling timely interventions. Recent advancements in machine learning algorithms have matched or even exceeded the diagnostic accuracy of dermatologists in identifying skin lesions using simple photographs. Given the high global incidence of skin cancer, especially non-melanoma skin cancers (NMSC) such as Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC), innovative diagnostic and therapeutic approaches are crucial. This study aims to characterize patients with NMSC treated with the combination of interferon alfa 2b and gamma and assess the efficacy of this therapy in reducing lesion size in high-risk areas before aesthetic surgical procedures as well as evaluate the accuracy of AI in diagnosing NMSC.

**Materials & Methods:**

A cross-sectional analytical study was conducted from 2016 to 2022, involving 104 patients clinically and histopathologically diagnosed with NMSC and treated with the combination of interferon alfa 2b and gamma in specialized dermatological consultations. The sample, determined through simple random sampling, included 99 BCC and 5 SCC cases. The combination of interferon alfa 2b and gamma was administered intradermally and perilesionally three times weekly for three weeks, with a therapeutic evaluation conducted 13 weeks after treatment. The AI diagnostic accuracy was assessed using an AI algorithm application. The study adhered to ethical standards, including informed consent for data and image use.

**Results:**

The combination of interferon alfa 2b and gamma demonstrated a complete clinical response in 83 patients (79.81%) and favorable aesthetic outcomes in 79 patients (75.96%). The most common adverse effect was a flu-like syndrome, observed in 101 patients (97.12%). AI correctly identified 63.64% of BCC cases, providing a confirmed, preferable, or probable diagnosis. Notably, 30.30% of cases were correctly diagnosed as BCC in the first option. Image quality limitations impacted AI accuracy in 4 cases. For SCC, AI accurately diagnosed 80% of cases, highlighting its potential as a diagnostic adjunct. Dermoscopy with AI identified malignant lesions in 76.47% of analyzed images, reinforcing the value of combining clinical assessment with AI support.

**Table 1:** Matching results of Artificial Intelligence in patients with BCC according to accuracy index.

| Diagnostics | Confirmed (>94) | Preferable (>85) | Probable (>75) | Total |
|---|---|---|---|---|
| 1st option | 32 (32.32%) | 13 (13.13%) | 6 (6.06%) | 51 (51.52%) |
| 2nd option | 1 (1.01%) | 4 (4.04%) | 4 (4.04%) | 9 (9.09%) |
| 3rd option | 0 (0%) | 11 (11.11%) | 2 (2.02%) | 3 (3.03%) |
| **Total** | **33 (33.33%)** | **18 (18.18%)** | **12 (12.12%)** | **63 (63.64%)** |
| **Total patients** | 99 (100%) | | | |

**Conclusion:**

The combination of interferon alfa 2b and gamma is a valuable therapeutic option for managing NMSC, enabling aesthetic surgical intervention and improving patient quality of life. AI proves to be a necessary, accurate, and accessible tool for early NMSC diagnosis, supporting dermatologists in making timely and precise clinical decisions. The integration of AI in dermatology holds promise for optimizing patient outcomes and revolutionizing skin cancer management.


**Abstract N°: 1358**

# Deep Learning for Diagnosis of Basal Cell Carcinoma Using Reflectance Confocal Microscopy – Tertiary Center Experience

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**Introduction & Objectives:**

The use of optical technology in the diagnosis of skin conditions has been transformative. It is non-invasive, has a short turn-around time, and allows for pre-operative planning. Reflectance confocal microscopy (RCM) is used in the detection of basal cell carcinoma (BCC) and has shown good sensitivity and specificity.

**Materials & Methods:**

Our study included 182 subjects with BCC lesions and 96 subjects without any skin cancers. Our proposed algorithm included first, an image-wise prediction stage which analyses each RCM image as 1-cut, 4-cut and 16-cut models using the ResNet 101 model. It then evaluates the lesions seen at varying depths using a 10-fold cross-validation scheme. The resultant model was tested on two RCM datasets, one which consisted of our study's patients and the other was the public MSKCC RCM dataset.

**Results:**

At the image-wise prediction stage, hierarchical support vector machine (SVM) ensemble provided an average 1.6139% area under curve (AUC) enhancement based on a 1-cut model performance of 97.2955% in our dataset and 3.8018% AUC enhancement based on 1-cut model performance of 84.6293% in the public dataset. At the sequence-wise prediction stage, average AUC of 99.9227% was achieved using our dataset.

**Conclusion:**

This model also included self-embedded attribution maps which points out important regions that contribute to the model's decision-making process, allowing for dermatologists to further investigate the areas generating significant heat regions. Utilizing RCM in combination with a hierarchical ensemble deep learning model is a non-invasive, fast and accurate method for BCC detection.


**Abstract N°: 1502**

**Trichoscopy-Pathology Correlation and Precision Subtyping in Androgenetic Alopecia Using Large-Scale Multimodal Data and Cognitive Reasoning AI**

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**Introduction & Objectives:**

Androgenetic Alopecia (AGA) diagnosis uses trichoscopy, but links between signs (hair diameter variation, yellow dots (YDs)) and pathology (miniaturization, inflammation, fibrosis) lack precise quantification and heterogeneity understanding, limiting precision care. We use large-scale multimodal data (>11,000 trichoscopy/paired pathology images) and advanced Artificial Intelligence (AI) to elucidate these correlations and enable objective AGA subtyping.

Objectives:

1.Construct a standardized AGA trichoscopy-pathology database.

2.Develop deep learning/cross-modal AI (CCA, MIM) for precise feature mapping and fusion between trichoscopy and quantitative pathology indicators (miniaturization rate, inflammation score, fibrosis grade).

3.Uncover biological mechanisms linking trichoscopic signs (e.g., YD patterns) to core AGA processes (Wnt signaling, oxidative stress, microenvironment remodeling) using cognitive reasoning AI and knowledge graphs (KGs).

4.Establish objective, AI-driven AGA subtypes based on fused trichoscopy-pathology features.

**Materials & Methods:**

Standardized acquisition/annotation of trichoscopy (polarized) and pathology (H&E, special stains). Deep learning (CNNs, Transformers) for feature extraction. Cross-modal alignment (CCA, MIM, adversarial learning) for fusion and mapping. KG construction based on AGA pathophysiology, integrating multi-source data via NLP/ML. Graph Neural Networks (GNNs) and causal inference for pathway analysis. Unsupervised/semi-supervised clustering for subtype identification. Validation via visualization and statistics.

**Results:**

A large, annotated database. High-precision quantitative trichoscopy-pathology correlations (target r > 0.7, AUC > 0.85). Mechanistic insights linking specific signs (e.g., confluent YDs) to pathways/phenotypes via KG/AI. Establishment of 3-4 clinically distinct AGA subtypes differing in trichoscopy, pathology, and potential prognosis. AI models reliably predicting pathology from trichoscopy to aid decisions.

**Conclusion:**

Integrating large-scale multimodal data with advanced AI will quantitatively define the pathological basis of AGA trichoscopy signs. This enables objective, biologically-grounded precision subtyping, advancing AGA understanding and personalized management by providing tools for improved diagnosis and targeted therapy development.


**Abstract N°: 1581**

# West syndrome masking Incontinentia pigmenti and Gaucher disease: Revealing complex genotypes through Next Generation Sequencing

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## Introduction & Objectives:

This case study involves a patient initially diagnosed with West syndrome, later revealed to be a carrier of both Incontinentia pigmenti (IP) and Gaucher Disease (GD) through Next Generation Sequencing (NGS). The patient's complex phenotype, characterized by overlapping neurological symptoms and delayed motor and cognitive development, masked the underlying genetic causes, complicating the diagnosis.

## Materials & Methods:

The patient, born at term, presented with neonatal seizures and skin abnormalities characteristic of IP, but these were initially overlooked. Developmental delays, infantile spasms, and focal seizures were prominent features, with cerebral palsy (CP) diagnosed later due to persistent neurological decline. Magnetic resonance imaging (MRI) revealed structural brain abnormalities, including microcephaly and optic nerve hypoplasia. Genetic analysis using NGS, specifically the TruSight One Panel (Illumina), was critical in identifying a heterozygous variant (c.1448T>G, p.L444R) in the GBA gene, associated with GD, in addition to a large deletion in the IKBKG gene (exons 4-10), confirming the diagnosis of IP.

## Results:

NGS played a pivotal role in this case, as traditional diagnostic methods were insufficient to capture the complexity of the patient's genotype. NGS allows for the simultaneous analysis of multiple genes, enabling the identification of rare and overlapping genetic mutations that contribute to multifaceted disorders like IP and GD. In this case, it provided crucial insights into the patient's dual diagnosis, which the neurological presentation of West syndrome had masked.

## Conclusion:

The necessity of NGS in complex genotypes cannot be overstated, particularly in cases where rare diseases with overlapping symptoms are involved. It offers a comprehensive approach, enabling precise identification of mutations that might otherwise go undetected, thus guiding appropriate management strategies. Early genetic screening via NGS should be considered in neonates with unexplained neurological and dermatological symptoms to facilitate timely and accurate diagnosis.


**Abstract N°: 1613**

**Bibliometric Analysis of the Use of Confocal Microscopy in Dermatology: Trends, Developments and Future Perspectives**

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**Introduction & Objectives:**

The limitations of traditional skin biopsy and the need for high-resolution imaging have driven the development of noninvasive techniques such as dermoscopy and in vivo confocal microscopy in recent years. In vivo reflection confocal microscopy (RCM) is a non-invasive imaging tool that allows real-time visualization of cells and structures in living skin at near histologic resolution.

RCM has been used for the evaluation of benign and malignant lesions. It shows great potential for applications in basic skin research and clinical dermatology. Despite its widespread use, no global bibliometric analysis of confocal microscopy (CM) research in dermatology has been conducted to date. This study aims to fill this gap by identifying influential articles, authors, institutions and emerging trends in CM research.

**Materials & Methods:**

A bibliometric analysis was conducted using the Web of Science Core Collection database. Articles and reviews in the dermatology research field were identified by searching for ‘confocal microscopy’ within titles and author keywords. Data were visualized using VOSviewer to create overlay visualization maps highlighting research trends and linkages.

**Results:**

In the last decade, 1826 publications were identified. Melanoma studies were the most frequent and prominent topic with 769 publications, with Italy, the United States and Spain being the most productive countries. The 3 journals that published the most articles were Journal of The European Academy of Dermatology and Venerology, Skin Research and Technology and Journal of the American Academy of Dermatology. The most frequently used keywords that emerged included ‘reflectane confocal microscopy, dermoscopy, melanoma, confocal microscopy, optical coherence tomography’.

**Conclusion:**

This study highlights the growing impact and versatility of RCM in dermatology. The findings highlight key contributors and trends and provide a guiding framework for future research. The integration of artificial intelligence and new analytical techniques will pave the way for significant advances and increase the diagnostic and therapeutic potential of RCM.

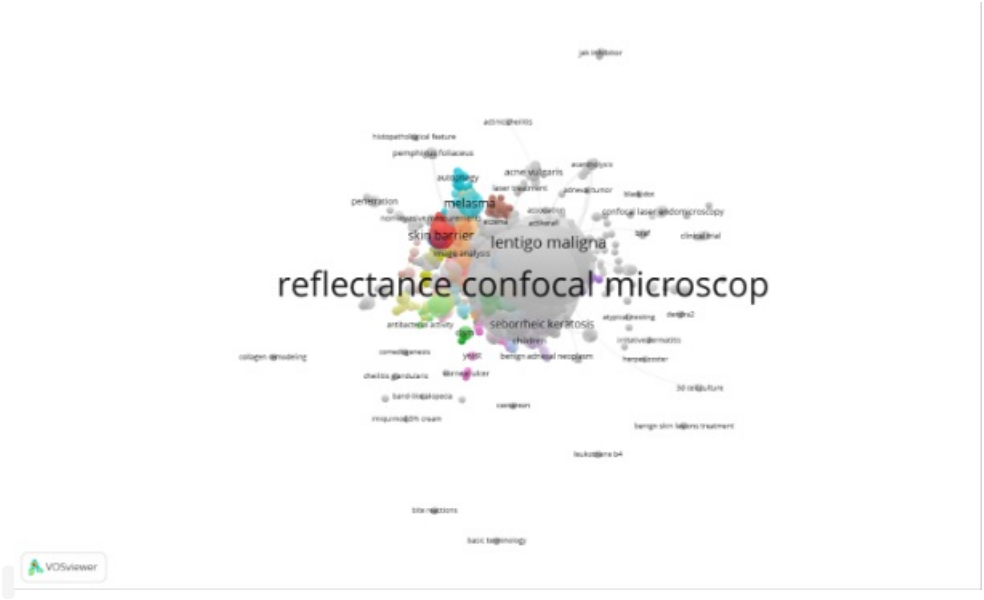


**Figure 1:** Superimposed visualization map of keywords in in vivo confocal microscopy studies over the last decade.

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**Abstract N°: 1625**

# An Unusual Presentation of Cutaneous Mucormycosis Mimicking Recalcitrant Dermatophytosis: A Case Report

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**Introduction & Objectives:** We report a case of cutaneous mucormycosis caused by *Rhizopus stolonifer* in a 45-year-old female initially managed for recalcitrant tinea corporis and cruris

**Materials & Methods:** Sequencing of the 18S ribosomal DNA (rDNA) and Internal Transcribed Spacer (ITS) regions (ITS1, ITS4) was performed, identifying the isolate as *Rhizopus stolonifer.*

**Results:** A 45-year-old female with a history of hypertension, presented to our dermatology clinic with a two-year history of persistent and newly emerging skin lesions, clinically suggestive of tinea corporis and cruris. Previous intermittent treatment with oral itraconazole over two years, followed by a one-month course of oral fluconazole (100 mg twice daily) and various topical combination therapies, had yielded no improvement. Dermatological examination revealed sharply demarcated, annular, erythematous plaques on the dorsal aspect of the right hand, bilateral gluteal and intergluteal areas, the medial aspect of the left thigh, and inframammary regions. Microscopic examination of skin scrapings using potassium hydroxide (KOH) preparation, which revealed hyphal structures, supporting a clinical diagnosis of fungal infection. The sample was cultured on Sabouraud Dextrose Agar (SDA, Hampshire, UK) and incubated at 37°C. Rapidly expanding mycelial growth was observed within 48 hours (Figure 1). Microscopic examination of the pure culture using the cellophane tape method stained with lactophenol cotton blue revealed morphological features consistent with the order *Mucorales* (Figure 1). For definitive identification, sequencing of the 18S ribosomal DNA (rDNA) and Internal Transcribed Spacer (ITS) regions (ITS1, ITS4) was performed, identifying the isolate as *Rhizopus stolonifer* (Figure 2). The patient received posaconazole with a loading dose of 300 mg twice daily for one day, followed by a maintenance dose of 300 mg once daily. After six months of posaconazole therapy, complete regression of the lesions was observed. The most persistent lesion on the gluteal area showed only residual post-inflammatory hyperpigmentation. Identifying fungi belonging to the order *Mucorales* based solely on colony and microscopic morphology can be challenging due to overlapping characteristics among different species. Advanced molecular techniques, such as polymerase chain reaction (PCR) and sequencing, particularly targeting the ITS region, currently provide the most accurate means for species-level identification within *Mucorales* (3). These methods facilitate early and precise diagnosis, which is critical for optimizing outcomes in this potentially rapidly progressive disease.

**Conclusion:** This report underscores the critical importance of mycological culture and molecular identification methods in diagnosing superficial fungal infections that are refractory to standard antifungal therapies. Clinicians should maintain a high index of suspicion for uncommon fungal pathogens, including *Mucorales*, in cases of persistent or treatment-resistant cutaneous fungal disease.

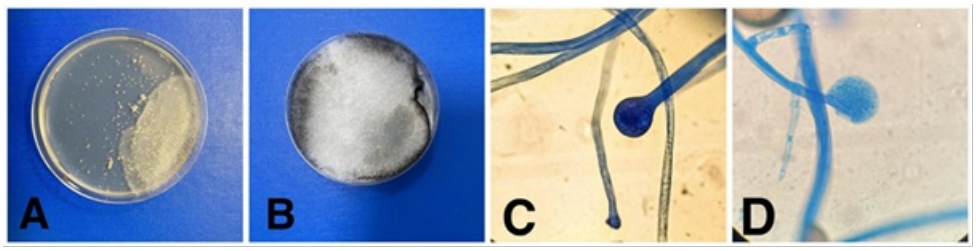

Figure 1: Petri dish, surface side, the colony was initially white (24th hour) (A), but subsequently turned gray and black (5th day) (B), in lactophenol blue staining at x40 magnification septal hyphal tick structures, sporangium, sporangiophore, columella sporangiospore structures are observed (C, D)

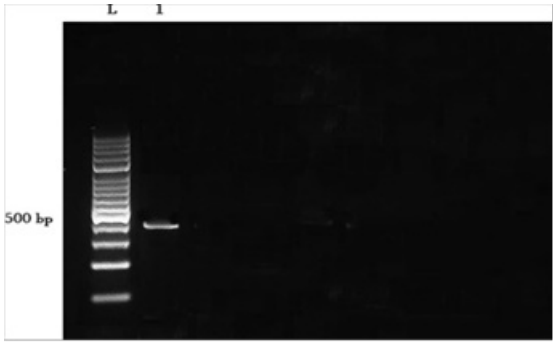


Figure 2: Agarose gel images of ITS PCR products of culture sample number 1


**Abstract N°: 1627**

**Real-Time, Non-Invasive Diagnosis of Bullous Pemphigoid: Diagnostic Performance of Line-Field Confocal Optical Coherence Tomography**

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**Introduction & Objectives:**

Bullous pemphigoid (BP) is a common autoimmune blistering dermatosis often difficult to distinguish from other inflammatory conditions. Timely diagnosis is crucial for appropriate management. Line-field confocal optical coherence tomography (LC-OCT), a non-invasive imaging technique that uses an 800nm laser to generate high-resolution vertical and horizontal cross-sectional images of the skin, is evaluated as a diagnostic tool for BP.

**Materials & Methods:**

A prospective, single-center study was conducted on 26 patients with suspected BP. LC-OCT imaging, histopathology, and direct immunofluorescence (DIF) were performed. LC-OCT images were assessed for the presence of key diagnostic features, including subepidermal cleavage and eczema criteria.

**Results:**

Based on histopathology, DIF, indirect immunofluorescence (IIF), and ELISA, the final diagnoses were 15 BP cases and 11 non-BP cases. LC-OCT correctly identified 12 of 15 BP cases and all 11 non-BP cases, demonstrating a sensitivity of 0.8 and a specificity of 1.0. The presence of subepidermal cleavage was a key diagnostic criterion for BP (p=0,000). The absence of alternating hypo- and hyperreflective layers (p=0,000), thickened and disrupted stratum corneum (p=0,014), spongiosis (p=0,036), and thickened epidermis (p=0,043), which occurred significantly less frequently in BP cases, further supported the diagnosis.

**Conclusion:**

LC-OCT demonstrates high sensitivity and specificity in diagnosing BP, offering a rapid, point-of-care diagnostic approach. LC-OCT can be used to evaluate unclear inflammatory skin conditions and guide further investigations. However, LC-OCT has limitations in diagnosing non-bullous stages of BP, thus histology and DIF remain the gold standard for definitive diagnosis.


**Abstract N°: 1631**

# DerminUS: A multicenter study on the efficiency of musculoskeletal ultrasound as a screening tool in dermatology

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**Introduction & Objectives:**

The diagnosis of psoriatic arthritis (PsA) is often delayed due to limited rheumatological capacity and inefficient referral processes. A monocentric study showed that dermatologists can reliably identify joint pathologies using chip-based point-of-care ultrasound devices and applying the standardized Musculoskeletal Ultrasound for Dermatologists (MUDE) protocol. Building on these findings, the multicenter DerminUS study evaluates the diagnostic value of dermatological musculoskeletal ultrasound (MSUS) as a screening tool for PsA compared to conventional clinical assessment.

**Materials & Methods:**

The prospective, blinded, multicenter study was conducted in ten rheumatological and 33 dermatological centers in Germany. Patients with psoriasis and arthralgia in at least two joints were included. Dermatologists received standardized training in the use of a portable, chip-based ultrasound device according to an abbreviated MUDE protocol. The dermatological diagnostic assessment was performed in two stages: initially, a conventional clinical examination was performed, followed by an ultrasound examination of the symptomatic joints. This was followed by a rheumatological examination by blinded rheumatologists, whose diagnosis served as a reference standard and was compared with the dermatological results.

**Results:**

Of 351 included patients with psoriasis, 271 (77.2 %) underwent a rheumatologic examination after an average of 30.7 days (± 45.6 days). The initial clinical assessment by dermatologists revealed a suspicion of PsA in 83.0 % (225/271). After additional MSUS diagnostics, this proportion fell to 63.8% (173/271). The final rheumatologic diagnosis confirmed PsA in 32.5 % of cases (88/271). The conventional dermatologic examination showed a high sensitivity (96.6 %), but low specificity (23.5 %) compared to the final rheumatologic diagnosis, with a positive predictive value (PPV) of 37.8 % and a negative predictive value (NPV) of 93.5 %. By integrating the MSUS, the specificity increased to 39.9 %, while the sensitivity fell to 71.6 %. The PPV remained almost constant at 36.4 %, while the NPV fell to 74.5 %.

**Conclusion:**

The DerminUS study confirms for the first time in a multicenter national setting that the MUDE protocol can be applied in a standardized and reproducible manner in dermatological practice. In particular, the integration of the MSUS improves diagnostic specificity, enabling more targeted patient referrals and more efficient use of rheumatological resources. The lower diagnostic sensitivity compared to previous studies indicates the need for more intensive and continuous training and regular feedback mechanisms to further increase diagnostic accuracy.

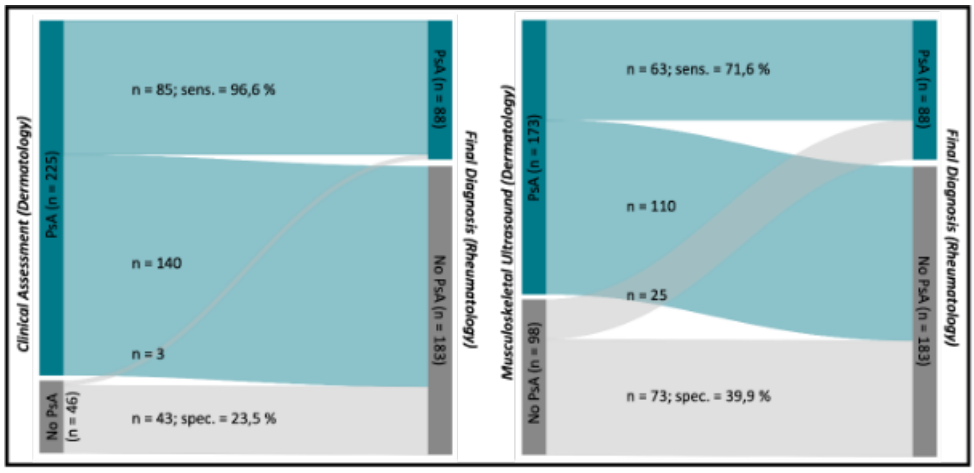


**Figure 1: Dermatological, diagnostic evaluation and final rheumatologic diagnosis.**

The figure shows the diagnostic process and the correlation between the suspected diagnosis made by dermatologists and the final rheumatological diagnosis. The respective diagnostic assessments are compared with the final rheumatologic diagnosis. Abbreviations: PsA: Psoriatic arthritis.

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**Abstract N°: 1671**

**penile epidermoid cyst: a rare case report**

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**Introduction:**

Epidermoid cysts are common benign cutaneous lesions, but penile localization is extremely rare. These cysts may be congenital due to abnormal embryological closure or acquired following trauma or surgery. While often asymptomatic, they can lead to discomfort, secondary infection, or cosmetic concerns. We report a rare case of a penile epidermoid cyst in an adult male, successfully treated with surgical excision.

**Case report:**

A 40-year-old male, with no prior medical history, presented with a painless, slowly growing nodule on the shaft of the penis, persisting for five years. The lesion measured 2 cm in diameter, was firm, mobile, and non-tender, with small cribriform scars on the overlying skin. No signs of inflammation, ulceration, or lymphadenopathy were observed. The patient reported no urinary symptoms or pain during intercourse. The lesion was completely excised under local anesthesia, revealing a well-encapsulated cystic structure. Histopathology confirmed an epidermoid cyst, lined with stratified squamous epithelium and filled with keratinous debris, without any malignant features. The post-operative recovery was uneventful, and the patient remained recurrence-free at follow-up.

**Discussion:**

Penile epidermoid cysts are rare and can be congenital or acquired. Congenital cases, known as median raphe cysts, develop due to abnormal embryologic closure along the ventral midline of the genitalia. Acquired cases may result from trauma or surgical interventions, causing epidermal elements to become trapped, leading to cyst formation. Differential diagnoses include dermoid cysts, urethral diverticula, pilonidal cysts, and teratomas. Most penile epidermoid cysts remain asymptomatic, with symptoms appearing due to infection, ulceration, or aesthetic concerns. While malignant transformation has been reported in epidermoid cysts at other sites, there are no documented cases of malignancy in penile cysts. Surgical excision remains the gold standard for treatment, ensuring complete removal and histopathological confirmation. No additional therapy or prolonged follow-up is required unless histopathology suggests atypical features.

**Conclusion:**

Penile epidermoid cysts are exceptionally rare and often misdiagnosed due to their uncommon location. This case highlights the importance of considering epidermoid cysts in the differential diagnosis of penile masses. Early recognition and complete surgical excision remain the cornerstone of effective management, ensuring both diagnostic confirmation and symptom resolution.

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**Abstract N°: 1793**

# Diagnostic performance of a DenseNet121 model in differentiating melanoma from dysplastic nevi

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## Introduction & Objectives:

Differentiating dysplastic nevi from in situ melanomas remains a major diagnostic challenge, even for experienced dermatologists. This underscores the need for objective and reproducible tools to support clinical decision making. Convolutional neural networks (CNNs) have recently revolutionised dermatological diagnostics, enhancing not only sensibility and specificity, but also increasing dermatologist's confidence by complementing their clinical judgement (1,2).

Previous studies demonstrated promising results using a supervised DenseNet121-based model, achieving an average AUC of 0.7743 for distinguishing in situ from invasive melanomas, and 0.7493 when classifying melanomas as in situ, <0.8 mm, or ≥0.8 mm Breslow thickness (3).

The primary aim of the present study was to develop and evaluate a supervised DenseNet121 CNN model for binary classification of melanocytic lesions—dysplastic nevi versus melanoma—based on dermoscopic images.

## Materials & Methods:

We developed a supervised CNN model based on the DenseNet121 architecture with ImageNet-pretrained weights. The final layers consisted of a GlobalAveragePooling2D layer, followed by a dense layer with 1,024 neurons and a binary output.

A total of 34,602 histopathologically confirmed dermoscopic images were used for training, sourced from the ISIC archive, our institution's private dataset, and the datasets published by Kawahara et al. and Polesie et al. All images were resized to 224×224 pixels and normalised to the [0,1] range.

To enhance generalisability, data augmentation techniques were applied, including horizontal/vertical flipping and width/height shifting. The model was evaluated using five-fold cross-validation, incorporating class balancing and a weighted loss function to address class imbalance.

## Results:

The model achieved a mean area under the curve (AUC) of 0.97 ± 0.01, with an average sensitivity of 0.84 and specificity of 0.95. Table 1 summarises the balanced accuracy, sensitivity, specificity, and AUC for each fold:

| | Balanced Accuracy | Sensitivity | Specificity | AUC |
|---|---|---|---|---|
| Fold 1 | 0.88 | 0.80 | 0.96 | 0.97 |
| Fold 2 | 0.88 | 0.85 | 0.91 | 0.96 |
| Fold 3 | 0.92 | 0.88 | 0.96 | 0.98 |
| Fold 4 | 0.90 | 0.84 | 0.97 | 0.97 |
| Fold 5 | 0.89 | 0.82 | 0.97 | 0.98 |
| **Mean (SD)** | **0.89 (0.02)** | **0.84 (0.03)** | **0.95 (0.03)** | **0.97 (0.01)** |

**Conclusion:**

Our findings suggest that a DenseNet121-based convolutional neural network can accurately distinguish between dysplastic nevi and melanomas, achieving high diagnostic performance with robust generalisability across datasets. These results highlight the potential of AI-assisted tools to support dermatologists in clinical decision-making, particularly in challenging differential diagnoses such as early-stage melanoma versus atypical naevi.

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**Abstract N°: 1941**

# Real World Performance of a Commercial Deep Neural Network Algorithm in Diagnosing Skin Cancer: Results from the AISCSS Study

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**Introduction & Objectives:**

Several countries, including the UK, have approved commercial AI products as medical devices to assist in the diagnosis of skin cancer. However, lack of robust real-world data has led to professional bodies recommending against their use outside research environments. The aim of this study was to assess the performance of an internationally proven deep neural network algorithm as a screening tool in a consecutive series of patients referred from primary care to an NHS public hospital dermatology department on the suspected skin cancer pathway.

**Materials & Methods:**

Dermoscopic images were prospectively obtained from consecutive patients attending a community lesion imaging clinic following referral from primary care on the suspected skin cancer pathway. Ultimate diagnosis was based on histology where available, face to face clinical opinion if no histology was obtained and teledermatology opinion for patients discharged directly from teletriage without histology or face to face review. Casenotes for all patients where histology was not obtained were reviewed at 6 months to detect missed cancers. Images were assessed by the algorithm and binary categorisation performed. The algorithm was set to detect invasive malignancies and premalignant conditions (actinic keratosis, Bowen's, keratoacanthoma) and to dismiss benign conditions.

**Results:**

1139 dermoscopic images were captured from consecutive consenting patients. Reasons for exclusion were artefact (43), inappropriate site (32), poor image quality (9), lost to follow up (5) and other reason (21), leaving 1029 images suitable for analysis.

Ultimate diagnoses were; BCC (163), SCC (102), melanoma (30), other malignancy (4), actinic keratosis (228), keratoacanthoma (8), intraepithelial SCC (37), benign keratotic (256), benign naevus (78), dermatofibroma (18), vascular (15), and other benign diagnosis (90).

The algorithm flagged 755 (73.4%) lesions as potentially malignant or premalignant and 274 (26.6%) as benign. Sensitivity for cancers was 99.7% (298/299 identified) and for premalignant conditions 96.7% (264/273). The algorithm missed one SCC but picked up one amelanotic melanoma that was missed by the teledermatologist.

Specificity for benign conditions in all patients was 57.8% (264/457). Specificity when removing the “other benign” category, which is in the algorithm’s exclusion criteria and not part of its training, was 69.2% (254/367).

**Conclusion:**

The algorithm performed extremely well on this real-life case series and detected 99.7% of invasive malignancies. AI screening of suspected skin cancer referrals is likely to represent a major way forward for dermatology services to address escalating capacity/demand mismatch and would have reduced the caseload requiring specialist opinion by 26.6% in this series. There is urgent need for further clinical trials and open competition between AI products on larger real-world datasets. Further stratification of benign and premalignant conditions may lead to greater benefit than binary classification.


**Abstract N°: 2075**

**Bridging clinical observations with dermoscopy and histopathology in palmoplantar keratoderma**

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**Introduction & Objectives:**

Palmoplantar skin lesions are one of the most common chief complaints among patients who visit dermatology clinics. Palmoplantar psoriasis (PPP) and Palmoplantar eczema (PPE) negatively affect a patient's quality of life and result in significant functional and social disability.

Clinicians have difficulty in accurately diagnosing PPP and PPE due to the similar features of these conditions and similar clinical responses to the systemic treatment of psoriasis with agents such as methotrexate, oral retinoids, and cyclosporine

The aim of his study was to establish the clinical criteria that differentiate between PPP and PPE. Moreover, to evaluate the different diagnostic methods as dermoscopic, pathological examination, and immunohistochemical studies by using (IL-36 and BCL-2) in differentiation between PPP and PPE

**Materials & Methods:**

in this comparative study, included 50 patients diagnosed with Palmoplantar Psoraisis (PPP) and Palmoplantar Eczema (PPE) who fulfil the eligibility criteria. The selected cases were collected from the Dermatology Outpatient Clinic in Al-Hussain, Hospital AL-Azhar University and Badr Hospital Helwan University for 2 years (from 2022 to 2024). Patients were divided equally into 2 groups: Group (A): included 25 patients of both gender with Palmoplantar Psoraisis (PPP) and Group (B): included 25 patients of both gender with Palmoplantar Eczema (PPE).

**Results:**

Dermoscopy has become an important auxiliary tool for the non-invasive diagnosis of several dermatological diseases, Also PPP and PPE were investigated using dermoscopy and the significance of specific dermoscopic features was assessed to improve their non-invasive differentiation.

Even though clinical and histopathologic features can be almost identical, the immunopathogenic mechanisms of psoriasis and eczema are substantially different so when the differentiation of PPP and PPE is very difficult, the immunohistochemical study can be utilized by using different markers as BCL2 and IL36 markers.

**Conclusion:**

Histopathology and dermoscopy are the most useful tools in the differentiation between PPP and PPE especially in challenging clinical cases. In addition IL36 and bcl-2 markers may be helpful in some cases. Further studies on a large scale population are needed to prove our findings.


**Abstract N°: 2188**

**Line field confocal optical coherence tomography (LC-OCT) imaging for lesions of genital area diagnosis : pilot study**

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**Introduction & Objectives:** Benign genital lesions are frequent, and their differential diagnoses always has to take in consideration melanoma or carcinoma. Dermoscopy 20x (D20x) magnification, 400x, and confocal microscopy can be used to confirm diagnosis but further studies are needed to characterize validated criteria. Line field-Optical Coherence Tomography (LC-OCT) is a non-invasive device proved to increase diagnostic accuracy for skin lesions but has been very little studied in genital localization. We present different LC-OCT patterns correlated with simultaneous co-localization on D20x examination. The aim of the study was to describe LC-OCT patterns in genital lesions.

**Materials & Methods:** 60 dermoscopic and LC-OCT images acquired from October 2023 to February 2025 were retrospectively collected from the database of the genital mucosa-dedicated consultation of the Dermatology Department of the University Hospital of Saint-Étienne (France). 23 cases were selected in order to present different dermoscopic patterns described in literature, and then co-localized LC-OCT were analyzed.

**Results:** LC-OCT revealed that globular dermoscopic pattern could correspond to rete ridges pressed against each other, melanocytic nest, dermal papillae filled up with melanophages or thin papillae with <100 µm diameter.

Brown homogenous pattern could correspond to rete ridges pressed against each other, basal melanocytic band, flat and pigmented dermo-epidermal junction (DEJ) or blurred and disorganized DEJ in an in-situ melanoma.

Ring-like, polycyclic, parallel, and fingerprint patterns, always correspond to a pigmented basal-layer of the epidermis, but with different angle of dermal papillae.

Purpuric homogenous pattern corresponds to blood extravasation.

White, grey and pink homogenous dermoscopic pattern all presented a densification of dermal collagens, density of vessels draws the colour to pink while density of melanophages draws the colour to grey.

Microgranular pattern correspond to numerous dermal melanophages.

Dermoscopic white and yellow globules respectively correspond to hair follicle and hypertrophied sebaceous gland.

Dermoscopic white veil correspond to hyperkeratosis.

**Conclusion:** Our results support that dermoscopy can not formally be correlated with microscopic structures of genital lesions and require caution for their interpretation, excepted for ring-like, polycyclic, parallel, and fingerprint patterns. On the other hand, co-localized LC-OCT seems to improve diagnostic accuracy. Our conclusions are preliminary and has to be confirmed by further studies.


**Abstract N°: 2297**

# New opportunities in assessing biophysical skin characteristics: results from two real-world-evidence studies using the handheld IoT device Skinly

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## Introduction & Objectives:

Recent advancements in artificial intelligence have revolutionized dermatological diagnostics. With the integration of machine learning, including deep learning, the development of at home skin analysis devices has become feasible. We recently introduced the Skinly system, a handheld device capable of evaluating various personal skin characteristics noninvasively. Equipped with a moisture sensor and a multi-light-source camera, Skinly can assess age-related skin parameters and specific skin properties. The studies conducted so far comparing Skinly to established ''gold standard'' methods have shown that it has the potential to replace or meaningfully complement more expensive, time-consuming stationary diagnostic tools reliably. This study aimed to investigate Skinly's potential for real-world dermatological research by collecting a large amount of data in the field when used daily for several weeks with regard to alleviation of 1) xerosis cutis and 2) sun-induced skin darkening.

## Materials & Methods:

A first open, prospective, observational study was conducted in Germany with 350 volunteers with xerosis cutis on body areas such as calf, forearm, thighs, upper arm or upper body who applied a moisturizer for eight weeks. Volunteers were requested to measure with the help of Skinly their skin's redness, texture, and moisture. Secondly, one case from the Skinly field test study, which encompasses approximately 20,000 participants aged 18 to 70 across various global regions, is presented, providing a unique opportunity to assess a wide range of skin parameters and exogenous data. Both studies were accompanied by tracking of ambient conditions and lifestyle factors via the Skinly app.

## Results:

Our findings revealed that the Skinly device can monitor the development of skin moisture, texture, and redness over the whole measurement period on a daily base. Application of a moisturizer alleviated xerosis cutis reflected in skin physiology measurements, but also in self-assessment via the Skinly App. Furthermore, the presented case from the Skinly field test study pointed out that skin physiology changes such as skin darkening can thoroughly be monitored and correlated with tracking of ambient condition and lifestyle via the Skinly app, i.a. UV exposure and application of sunscreen.

## Conclusion:

This study demonstrates the possibility to combine daily measurements of skin physiology parameters with volunteers´ self-assessment and to interpret results in context of tracked ambient conditions and self-reported lifestyle factors over several weeks. Trials with Skinly are expected to complement the state-of-the-art conventional trials, allowing deeper learning of the users' needs and the development of improved, even personalized products.


**Abstract N°: 2349**

**Seeing the Impossible: Macroconidia in Direct KOH Mount from Human Skin – A Case Series and Call for Collaborative Observation**

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**Introduction & Objectives:**

Macroconidia are traditionally considered culture-dependent structures, with all standard dermatology and mycology references stating that they cannot be observed in direct microscopic examination of human specimens. However, in clinical practice, rare exceptions can challenge this foundational assumption. In this case series, we present multiple patients with disseminated tinea infections in whom macroconidia were clearly visualized under direct KOH skin scraping examination.

Case Presentation

Each patient was clinically diagnosed with widespread dermatophytosis and subjected to immediate testing with KOH 10% mount. In all cases, classic hyphae were observed, but most strikingly, large, multicellular macroconidia —typically considered exclusive to culture media—were identified directly in vivo. Samples were simultaneously sent for fungal culture and antifungal susceptibility testing to confirm diagnosis and identify the causative organism.

Discussion

To our knowledge, macroconidia observed in direct human skin scrapings have been described only once in the literature by Ebrahimibarogh et al. in 2024—an article fraught with errors. Beyond that, evidence is confined to rare veterinary studies. This work not only challenges textbook conventions but also explores potential explanations for macroconidial formation on living tissue: wrong treatment options, fungal adaptation, environmental triggers, or possibly altered host-pathogen interactions in disseminated infections.

We will review the current literature, propose theoretical mechanisms, and critically discuss why such findings may be underreported or overlooked. We also issue a call to mycologists and dermatologists worldwide to share similar observations to better understand this phenomenon and update educational paradigms.

**Conclusion:**

This case series emphasizes the value of direct microscopy as both a diagnostic and discovery tool. The identification of macroconidia in KOH mounts from human skin may not be an anomaly—but rather, an invitation to revisit what we think we know about fungal morphology in vivo.


**Abstract N°: 2514**

**Axillary biopsy in Lafora disease: when skin mirrors disease**

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**Introduction & Objectives:**

Lafora disease (LD) is a deadly neurometabolic condition causing progressive myoclonic epilepsy. Its diagnosis depends on identifying distinctive inclusion bodies in various organs biopsy. We report two observations of Lafora disease, highlighting the value of diagnosis through axillary gland biopsy.

**Observation:**

We report the cases of a 27 and 31-year-old females who presented with a history of seizures and mental deterioration. They both presented occasional uncontrollable movements of all extremities at childhood age that progressed to generalized tonico-clonic seizures. They experienced deficits in attention, memory, and a delay in psychomotor development in one patient. Despite adherence to treatment, the patients' neurologic condition deteriorated. Upon further history, family history of similar conditions was found with an inbreeding background. The patients were then referred to dermatology for axillary skin biopsy to confirm the diagnosis of Lafora disease. Two axillary 5mm skin biopsies were performed and sent for routine histopathologic and electron microscopic evaluation. Staining with the periodic acid-Schiff (PAS) stain with diastase revealed PAS positive rounded intracytoplasmic inclusions at the apical pole of cells lining apocrine sweat glands, morphologically identical to Lafora bodies. Besides, the superficial dermis contains a discrete perivascular lymphocytic infiltrate. These findings confirmed the diagnosis of Lafora disease.

**Results:**

This case highlights the value of performing axillary gland biopsy in suspected cases of Lafora disease. Lafora disease is a rare and fatal autosomal recessive myoclonic epilepsy. It clinically presents with the triad of seizures, myoclonies and dementia. Diagnosis is confirmed by histopathology revealing PAS-positive intracytoplasmic Lafora bodies in organs like brain, heart, liver, muscles and skin. A skin biopsy is preferable to biopsy over other organs, e.g. the central nervous system as it is easier, more cost-effective, and safer. Lafora bodies can be found in clinically normal skin, particularly in eccrine and apocrine glands. The axilla is the best site for biopsy due to its relatively high concentration of these glands. However, inclusion bodies similar to Lafora bodies can rarely be found in other cases such as amyotrophic lateral sclerosis. Hence the importance of clinical context in diagnosis confirmation.

**Conclusion:**

This report underscores the value of axillary skin biopsy as an appropriate diagnostic test for Lafora disease. Confirming the diagnosis requires collaboration among neurologists, dermatologists and pathologists, integrating clinical findings with pathological analysis.


**Abstract N°: 2653**

# PCR Amplification and Sequencing of Pathological Sections to Assist in the Diagnosis of Mycobacterium Phocaicum Infectious Skin Granuloma: A Case Report

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**Introduction & Objectives:**

This report details a rare case of Mycobacterium phocaicum skin infection, diagnosed via PCR amplification and DNA sequencing of the patient's lesion tissue.

**Materials & Methods:**

A 65-year-old male presented with a dark red plaque on his scalp, accompanied by alopecia for over three months, and an ulcer for one month. Examination revealed a 16cm x 8cm plaque with scattered red nodules on its edges, dilated capillaries, multiple areas of alopecia, and dry scabs. A 2.0cm circular ulcer with an uneven base, bright red granulation tissue, yellow mucous secretions, and minor bleeding was also observed. Ancillary tests, including blood routine, tumor markers, a full set of antinuclear antibodies (ANA), and T-Spot, were all normal. Attempts to culture fungi and mycobacteria from the lesion tissue and secretions were unsuccessful. Histopathology indicated diffuse epithelioid cell masses in the dermis, scattered multinucleated giant cells, and local lymphocytic infiltration. Both PAS and acid-fast staining were negative, suggesting an infectious granuloma. PCR amplification of the lesion tissue detected mycobacterial DNA, specifically identifying Mycobacterium phocaicum.

**Results:**

The patient was diagnosed with Mycobacterium phocaicum infection of the skin and soft tissue. Treatment with clarithromycin and moxifloxacin hydrochloride led to significant improvement. After four weeks, the ulcer had shrunk, and the plaque had faded. Continued treatment for another four weeks resulted in further healing, with scarring, local atrophy, and only a few scabs remaining.

**Conclusion:**

Mycobacterium phocaicum, described in 2006, is a rapidly growing mycobacteria found in natural aquatic environments. It can cause infections similar to those of Mycobacterium mucogenicum, including catheter-related bloodstream infections and chronic pneumonia. Diagnosis relies on tissue biopsy, mycobacterial culture, and molecular techniques such as PCR and DNA sequencing. In this case, PCR and DNA sequencing of the initial lesion tissue provided a definitive diagnosis, highlighting the utility of these highly sensitive and specific molecular diagnostic methods in addressing the challenges of inhomogeneous mycobacterial infectious granuloma lesions.


**Abstract N°: 2654**

**Effect on diagnostic concordance on combining teledermatology with teledermatoscopy in general dermatological conditions, in skin of color – a pilot study**

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**Introduction & Objectives:**

There is good evidence to demonstrate the diagnostic accuracy of teledermatology as compared to face-to-face consulations. Combining dermoscopy images with the clinical images in a store-and-forward system should improve the diagnostic accuracy.There is also some evidence regarding the role of teledermatoscopy in improving the diagnostic concordance in tele-consultaions. However, most of these studies are in the context of skin malignancies, especially melanoma, and in lighter skin types. There is a paucity of data related to teledermatoscopy in general, and more so in the context of general dermatological conditions and in the context of darker skin types.Focus was general dermatology and skin of color

Our objective was to evaluate the effectiveness of combining store-and-forward teledermatology, with teledermatoscopy in improving diagnostic accuracy, in the context of general dermatological conditions in Fitzpatrick's skin type IV,V, VI

**Materials & Methods:**

Cross sectional (comparative diagnostic concordance study).

Purposive sampling was used

A total of 102 sets of images of general dermatology case with a confirmed diagnosis (one clinical and one dermoscopic) chosen by the primary investigators were used. Images were shortlisted after ensuring adequate quality in terms of image resolution and focus, for both clinical and dermoscopy images

The image sets were sent online to 10 experts in dermoscopy, with the clinical images seen first, scored, followed by the dermoscopic image.

Each respondent could give up to three diagnoses for each image. Scoring was done by the two primary investigators (Concordance scoring from 0 to 3, with 3 showing perfect concordance)

Primary outcomes were – improvement in concordance with actual diagnosis after evaluating dermoscopy images

Secondary outcomes were – pattern of concordance improvement based on type of dermatoses

**

**Results:**

There was an overall improvement in mean concordance from 1.72 to 1.82

This improvement was statistically significant (, paired T test, p-value = 0.011)

For 47 cases concordance showed improvement, 30 showed no change, while 25 showed deterioration

No clear pattern was discernable with respect to type of skin disease (inflammatory vs hair vs nail vs pigmentary )

Conditions with lower concordance with clinical images had generally lower concordance for dermoscopy images too

**Conclusion:**

Combining teledermoscopy with teledermatology can improve diagnostic concordance in general dermatological conditions in skin of color. Both clinical and dermoscopy images need to be used in a complementary manner for best teledermatology outcomes.

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**Abstract N°: 2777**

# Teledermatology: Disruptive Innovation or Complementary Care Model? A Retrospective Study Using Real-World Data from Slovakia

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**Introduction & Objectives:**

Teledermatology is increasingly recognized as a valuable tool for improving access to dermatological care, but real-world comparisons with traditional in-person care are limited. This study aimed to compare the diagnostic spectrum, patient demographics, and prescription patterns between patients utilizing a teledermatology tool (TD) and those receiving standard in-person care (SC).

**Materials & Methods:**

A retrospective analysis was performed using administrative data reported to a health insurance provider in Slovakia from May 2023 to February 2025. In the TD setting, patients were limited to submitting a single photograph per consultation. In total, the dataset comprised TD consultations by 8 dermatology clinics and SC visits in 246 contracted clinics.

The 10 most frequent ICD-10 diagnoses in TD and SC cohorts were compared. For each diagnosis, we analyzed patient age, sex, rural residence (defined as living in a municipality with fewer than 8,000 inhabitants), and the proportion of cases resulting in a prescription. Differences between TD and SC cohorts were tested using Pearson Chi-square test or Wilcox-test.

**Results:**

The SC cohort comprised 824,597 visits with an average patient age of 42.1 years, 40% male and 48% residing in rural areas, while the TD included 28,341 consultations with an average age of 32.5 years, 35% male and 47% residing in rural areas.

In the TD group, the average case evaluation time was 1 day and 10 hours. Of TD cases, 16% received a prescription, 45% received an over-the-counter recommendation, 34% were referred to SC due to severity or diagnostic uncertainty, and 5% required no follow-up.

The top 10 diagnoses accounted for 70% of all cases in the TD and 63% in the SC cohort; the two cohorts shared 7 of these 10 diagnoses (see Table, diagnoses highlighted in gray are unique to each cohort). The diagnostic distribution differed markedly between TD and SC. ‘Other disorders of skin and subcutaneous tissue’ was the most common TD diagnosis (24.0% vs 0.3% in SC), while ‘Other and unspecified dermatitis’ dominated SC (9.5% vs 7.5% in TD).

TD patients were consistently younger (mean age difference 9.6 years, $p < 0.001$), with the smallest gap in patients with viral warts (TD: 29.2 vs SC: 32.7 years) and atopic dermatitis (TD: 17.9 vs SC: 21.8 years). Male representation was generally lower in TD ($p < 0.001$), especially for acne (TD: 17% vs SC: 34%). The rural patient proportion differed significantly ($p=0.0001$) due to large sample size, but the difference lacks clinical relevance. Filled

prescription rate was substantially lower in TD (TD: 15% vs SC: 60%; p < 0.001). The largest prescription gap was observed in other superficial mycoses (TD: 11% vs SC: 84%) and seborrheic dermatitis (TD: 13% vs SC: 84%).

**Table:** Comparison of the 10 most frequent ICD-10 diagnoses in teledermatology (TD) and standard care (SC) cohorts.

| ICD10 | Diagnosis | Count (visits/consultations) | | Share on total (in %) | | Age (in years)*** | | Gender (% of men)*** | | Rural areas (% of patients)*** | | Prescription rate (% of patients)*** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TD | SC | TD | SC | TD | SC | TD | SC | TD | SC | TD | SC |
| L98 | Other disorders of skin and subcutaneous tissue | 8 788 | 2 868 | 24.0% | 0.3% | 33.8 | 52.5 | 37% | 42% | 47% | 51% | 14% | 54% |
| L30 | Other and unspecified dermatitis | 2 129 | 77 968 | 7.5% | 9.5% | 33.8 | 45.7 | 35% | 41% | 48% | 50% | 28% | 79% |
| L70 | Acne | 1 865 | 57 903 | 6.6% | 7.0% | 26.2 | 21.6 | 17% | 34% | 51% | 53% | 28% | 83% |
| L25 | Unspecified contact dermatitis | 1 854 | 5 341 | 6.5% | 0.6% | 33.0 | 46.4 | 29% | 34% | 49% | 46% | 28% | 81% |
| D22 | Melanocytic nevi | 1 757 | 77 111 | 6.2% | 9.4% | 33.2 | 38.6 | 34% | 38% | 43% | 44% | 1% | 15% |
| L21 | Seborrheic dermatitis | 1 178 | 26 906 | 4.1% | 3.3% | 32.4 | 37.2 | 47% | 48% | 48% | 47% | 13% | 84% |
| L71 | Rosacea | 1 123 | 21 494 | 4.0% | 2.6% | 31.4 | 49.4 | 17% | 22% | 48% | 46% | 17% | 78% |
| B35 | Dermatophytosis | 1 102 | 40 813 | 3.9% | 4.9% | 36.8 | 51.1 | 47% | 43% | 47% | 49% | 18% | 80% |
| L20 | Atopic dermatitis | 1 073 | 57 804 | 3.8% | 7.0% | 17.9 | 21.8 | 33% | 42% | 45% | 49% | 18% | 82% |
| B36 | Other superficial mycoses | 882 | 11 205 | 3.1% | 1.4% | 33.9 | 38.8 | 45% | 51% | 51% | 51% | 11% | 84% |
| L40 | Psoriasis | 478 | 61 094 | 1.7% | 7.4% | 37.4 | 50.0 | 43% | 48% | 51% | 51% | 17% | 81% |
| B07 | Viral warts | 683 | 55 204 | 2.4% | 6.7% | 29.2 | 32.7 | 44% | 45% | 47% | 47% | 3% | 22% |
| D23 | Other benign neoplasms of skin | 424 | 40 308 | 1.5% | 4.9% | 36.8 | 49.7 | 34% | 37% | 45% | 44% | 1% | 23% |

* p<0.05 ; ** p<0.01; *** p<0.001

**Conclusion:**

Teledermatology is utilized by younger and slightly more female patient population compared to standard care, with notable differences in diagnostic spectrum and a consistently lower rate of prescriptions. The higher prescription rate in SC could be attributed to the ability to address multiple skin issues during a single in-person visit, while the TD platform limits consultations to a single photographic submission. Whether this reflects a more judicious use of prescription medications in the TD setting, a potential for undertreatment compared to SC, or possibly even overtreatment in the in-person setting, remains an open question and a key area for future investigation.

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**Abstract N°: 2843**

**Reducing Biopsy Burden in Melanoma Screening with Pigmented Lesion Assay and Dermoscopy**

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**Introduction & Objectives:**

Classification of melanocytic lesions based on specific dermoscopy criteria has been shown to increase accuracy of melanoma detection. Newer diagnostic methods for melanoma are useful to improve detection of early-stage disease, namely gene expression analysis. A noninvasive patch-based pigmented lesion assay (PLA) assessing gene expression of LINC00518 and PRAME has been introduced to identifying high melanoma-risk lesions to aid with biopsy decision making. Both techniques aim to reduce the number of unnecessary surgical biopsies and increase the detection of early-stage melanoma. We sought to evaluate whether dermoscopy evaluation would increase the positive predictive value of the PLA.

**Materials & Methods:**

A retrospective review of our electronic and archived medical records of a private dermatology clinic was completed to identify all the PLAs performed during a period of 9 years (2015-2024). PLA was recommended to a patient upon clinical assessment of a suspicious lesion that did not warrant an immediate biopsy. The patient was informed of all results and recommended to return to clinic for a shave biopsy if positive and for clinical monitoring if negative. The relevant histopathologic diagnostic results were grouped as benign, atypical (nevus with mild or moderate atypia), MIS (nevus with severe atypia and melanoma *in situ*), and Invasive Melanomas (invasive MM). Because the pathological features and standard of care for severely atypical nevi are the same as for MIS, they will be considered as the same diagnosis for analytical and statistical purposes.

**Results:**

A total of 5645 PLAs were performed over a period of 9 years (2015-2024). Of these PLAs, 624 were positive for either LINC00518, PRAME, or both. The remaining were either negative or were unable to be processed due to insufficient genomic material or contamination of the sample. 580 of the positive PLA lesions had a subsequent biopsy or excision and a corresponding pathology result from an external dermatopathologist. The other 44 lesions were either lost to follow-up, or the patient opted for clinical monitoring of the lesion despite recommendation of biopsy. Of the 580 positive PLAs with a corresponding pathology result, 337 lesions were LINC00518+ PRAME-, 109 were LINC00518- PRAME+, and 134 were LINC00518+ PRAME+. The subsequent biopsy or excision pathology reports resulted in a total of 205 benign lesions, 168 atypical lesions, 196 MIS, and 11 invasive MMs. The calculated PPV for LINC00518+ PRAME- was 18.1% (95%CI: 16.01% - 20.40%), LINC00518- PRAME+ was 38.53% (95%CI: 32.32% to 45.14%), and LINC00518+ PRAME+ was 77% (95%CI: 70.77% to 83.23%). These PPVs are higher compared to previously reported results of 15%, 19%, and 67% respectively. Notably, 27.2 PLAs were needed to detect one melanoma. However, the use of PLAs resulted in monitoring of over 5000 lesions that otherwise would have been biopsied, ideally decreasing the number needed to biopsy of 21.4 per melanoma.

**Conclusion:**

When compared to previously repoted PLA data, our clinical data show that including dermoscopy examination

prior to using a PLA increases the PPV of the PLA, strongly supporting the use of non-invasive assessment prior to surgical biopsy to decrease the number of biopsies needed while keeping melanoma detection rates high.


**Abstract N°: 2853**

**Cutaneous Rosai Dorfman Disease – a diagnosis we should keep in mind in front of erythemato-yellowish papules, especially in the cephalic extremity of young adults**

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**Introduction & Objectives:**

Rosai-Dorfman disease (RDD) is a benign histiocytosis with unknown origin, affecting lymph nodes as well as extranodal sites. The purely cutaneous form is rare and the differential diagnosis can be challenging to both clinicians and dermatopathologists. Although all ages can be affected, young people are the most vulnerable.

**Materials & Methods:**

We present the case of a 34-years-old woman who presented for multiple erythematous-brownish, translucent papules with a yellowish hue, located on the left latero-cervical region, that have been progressing for two months. Her medical history consisted in Hashimoto's thyroiditis. There were no palpable lymph nodes in the cervical region.

Dermoscopy of the affected area revealed a red orange background, yellowish follicular keratotic plugs and linear-irregular vessels.

Based on clinical and dermoscopic features, the diagnosis of sarcoidosis was suspected and an excisional biopsy was performed.

**Results:**

Laboratory tests revealed a slightly elevated erythrocyte sedimentation rate (ESR) and iron deficiency. The serum level of angiotensin-converting enzyme was within normal limits.

The histopathological examination revealed a nodular and diffuse intradermal infiltrate composed of large polygonal histiocytoid cells with abundant pale eosinophilic, finely vacuolated cytoplasm, with vesicular nuclei and prominent nucleoli. The proliferation is accompanied by a mixed infiltrate with lymphocytes, plasma cells, eosinophils and neutrophils, some of which are observed intracitoplasmically in the histiocytoid cells (emporipolesis). The histopathology and the immunophenotypic expression support the diagnosis of cutaneous Rosai Dorfam disease.

As no internal pathology was visible on the lymph nodes and abdominal ultrasounds we established the diagnosis of cutaneous form of Rosai-Dorfman disease.

**Conclusion:**

Keeping in mind the benign character of the cutaneous RDD and the possibility of spontaneous resolution, we considered in our patient local treatment with topical corticosteroids and calcineurin inhibitors, with periodic follow-up visits.

Cutaneous RDD remains a diagnostic challenge. Even if the histopathological examination is mandatory to have a final diagnosis, it is important to add cutaneous RDD in the diferential diagnosis of erythematous, translucent papules with brownish-yellow hue and linear-irregular vessels in dermoscopy, especially in the cephalic extremity

of young adults.

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**Abstract N°: 3393**

**A balloon cell nevus : first multimodal imaging description including Line Field Optical Coherence Tomography (LC-OCT).**

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**A balloon cell nevus : first multimodal imaging description including Line Field Optical Coherence Tomography (LC-OCT).**

**Introduction & Objectives:**

We present a benign, but rather atypical lesion, a balloon cell nevus, observed with dermoscopy, confocal microscopy and line field optical coherence tomography (LC-OCT). Our patient is a 35-year-old woman, phototype III. She has a history of dysplastic nevus syndrome, one melanoma stage IA (AJCC) on the left arm, and a family history of melanoma on her father, who is also known for a MC1R mutation.

During her semestrial check-up, we observed an increase in size of an abdominal pigmented lesion.

**Materials & Methods:**

Dermoscopy was performed using a FotoFinder® (Bad Birnbach, Germany) on said lesion. Confocal microscopy was performed with VivaScope 3000® (Caliber®, New York, USA). Line field optical coherence tomography (LC-OCT) was performed with the LC-OCT made by Damae® (Paris, France), which allows for colocalized imaging with X20 dermoscopy, en-face confocal view, and cross-sectional confocal view.

**Results:** Dermoscopy showed a homogeneous lesion with a reticular pattern, and multiple scattered yellowish round structures throughout the lesion, corresponding to the balloon cells *(Figure 1).* We studied these structures with confocal microscopy, which showed hyper-reflective round structures containing multiples reflective cells. These correspond to the clear or slightly eosinophilic cytoplasm, due to the accumulation of intracytoplasmic vacuoles.

Finally, we performed LC-OCT, revealing the dermal localization of the balloon cells, their well-defined borders, and their homogeneous cellular content *(Figure 2).*

Balloon cell nevus is a rare histological variant of melanocytic nevi, with specific features in dermoscopy, confocal microscopy, and LC-OCT. The combination of these imaging techniques provides a detailed, multi-dimensional view of the lesion, facilitating an accurate diagnosis. Understanding these structures and correctly identifying them is crucial.

**Conclusion:**

LC-OCT represents a significant advancement in dermatology by enabling real time, non-invasive imaging of cutaneous structures. The combination of dermoscopy, confocal microscopy and LC-OCT allows for a detailed and multidimensional description of lesions, not only contributing to a more accurate dermoscopic-histological correlation, but also supporting a more informed clinical decision-making, reinforcing its value in the management of atypical lesions, particularly in high-risk patients like in our case.

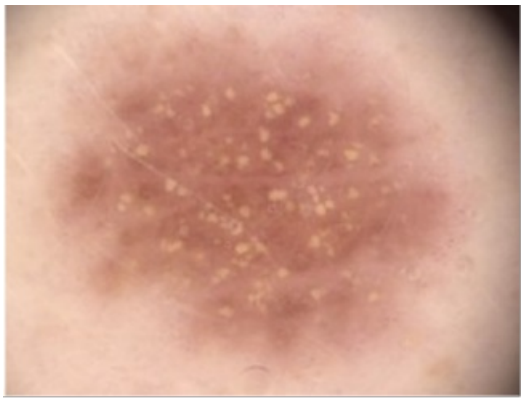

Figure 1 : X20 dermoscopy showing a reticular homogeneous pattern with presence of scattered yellowish round structures.

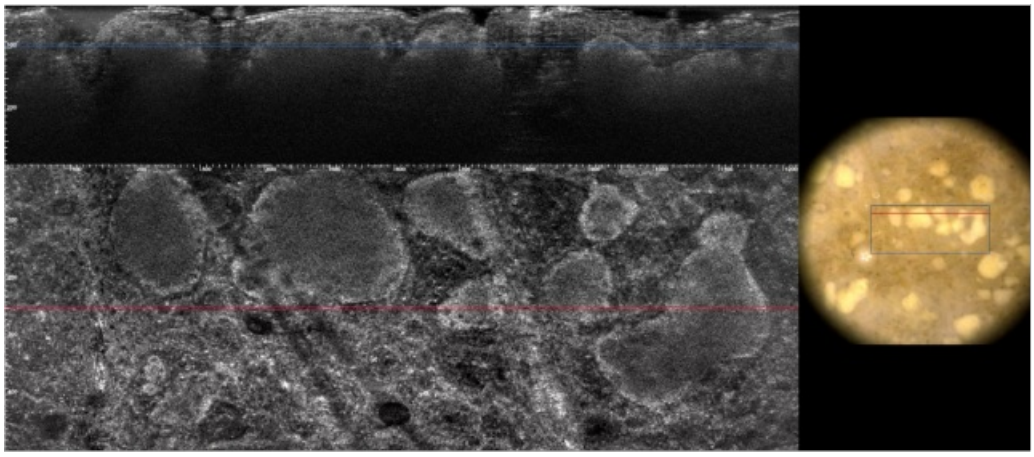

Figure 2 : LC-OCT (cross sectional and en face views) co-localized with dermoscopy (X20), highlighting the clear balloon morphology in vivo.


**Abstract N°: 3422**

**Racial Bias in AI-Powered Dermatology Tools: Underrepresentation of Skin of Color in Machine Learning Datasets**

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**Introduction & Objectives:**

With an increasing reliance on AI-generated models in this novel era of technology, the implications of AI on healthcare delivery should be assessed. The changing landscape of healthcare in lieu of technological integration presents us with the question of whether or not existing biases will be perpetuated through AI[1]. The purpose of this study is to evaluate how racial and skin tone bias affects the performance and output of artificial intelligence tools used in dermatology.

**Materials & Methods:**

A focused literature review was conducted on Google Scholar using the following keywords:*dermatology, artificial intelligence, machine learning, bias, skin color*

The following studies were evaluated:

1. Disparities in Dermatology AI Performance on a Diverse, Curated Clinical Image Set[2]
2. Representations of skin tone and sex in dermatology by generative artificial intelligence: a comparative study[3]
3. Improving Skin Color Diversity in Cancer Detection: Deep Learning Approach[4]

**Results:**

The first study analyzed, *Disparities in Dermatology AI Performance on a Diverse, Curated Clinical Image Set*, addresses the performance of AI models on diverse skin tones. The Diverse Dermatology Images (DDI) dataset was developed, which comprised of 656 biopsy-confirmed images across all Fitzpatrick skin types (I–VI), focusing on darker skin tones (V–VI)[5]. These AI models displayed significantly reduced accuracy on images of darker skin tones. For instance, the ROC-AUC scores dropped by 27–36%.

The second study investigated, *Representations of skin tone and sex in dermatology by generative artificial intelligence: a comparative study,* evaluated how generative AI platforms such as Midjourney and DALL·E 3 illustrate skin tone and sex in images of dermatologic conditions[6]. When looking at skin tone representation in the images generated, 96.6%

represented light tones, 3.4% represented medium tones, and 0% represented dark tones. When evaluating sex representation, 68% of the images represented males whereas 32% represented females.

The third study evaluated, *Improving Skin Color Diversity in Cancer Detection: Deep Learning Approach*, highlights the underrepresentation of diverse skin types in dermatologic datasets. Researchers used deep learning techniques—style transfer (ST) and deep blending (DB) to generate images representing darker skin tones. ST images were rated more diagnostically instrumental, allowing dermatologists to diagnose lesions correctly approximately 75% of the time. Upon incorporating these diverse images in training, AI models also showed

improved performance, with accuracy increasing from 56% to 76% and AUC from 0.63 to 0.72[7].

**Conclusion:**

These studies reveal that skin tone bias continues to persist in AI-driven dermatology tools. The underrepresentation of darker skin tones across datasets and AI outputs raises concerns about the generalizability of these novel models. However, emerging strategies, such as incorporating synthetic images of diverse skin tones, as seen in the third study we evaluated, demonstrate promise in mitigating bias. Looking forward, it is imperative that dermatologic AI development prioritizes inclusivity to ensure that advancements in technology serve all patient populations equitably.


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3. Sakunchotpanit G, Nayudu K, Chen R, Milosavljevic S, Rohan TZ, Ortiz-López L, Venkatesh K, Nambudiri VE. Representations of skin tone and sex in dermatology by generative artificial intelligence: a comparative study. Clin Exp Dermatol. 2025 Mar 13:llaf126. doi: 10.1093/ced/llaf126. Epub ahead of print. PMID: 40080693.↩
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**Abstract N°: 3472**

# Objective Assessment of Palpation in Dermatology: Evaluating the TouchyFinger Device

Christian Dorado Cortez*[1], meriem ayadh[1], kenny velia[1], hassan Zahouani[2], roberto vargiolu[2], jean luc perrot[1, 2]

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**Introduction & Objectives:**

Palpation, vital for assessing skin texture, firmness, and elasticity, remains subjective and dependent on clinician experience. Wearable biosensor technologies like the TouchyFinger® device offer an objective measure of tactile parameters, potentially standardizing dermatological palpation (Figure 1). Our objectify was to evaluate the efficacy of the TouchyFinger® device in objectively quantifying tactile parameters (pressure, frequency) and examine demographic influences (age, sex, expertise) on tactile sensitivity.

**Materials & Methods:**

A single-center observational study included 24 participants (12 dermatologists, 12 non-dermatologists), equally balanced by age and sex. The TouchyFinger device measured tactile interactions across 12 samples grouped as plastics, fabrics, and leather, ranked by roughness. Primary outcomes included vibrational spectra and pressure. Demographic influences on tactile sensitivity were statistically assessed.

**Results:**

The TouchyFinger ® device successfully distinguished materials by roughness using vibrational frequency ($p < 0.001$), confirming its ability to objectively evaluate tactile differences (Figure 2). Frequency values aligned with the predefined hierarchy of material roughness and variability was low, supporting measurement reliability. However, pressure measurements did not significantly reflect roughness levels ($p = 0.90$), indicating limited discriminatory capacity of pressure alone. Mechanoreceptor responses—Ruffini, Merkel, Meissner, and Pacinian—showed distinct activation patterns in response to tactile stimuli. Sex differences were notable: women exhibited significantly higher mechanoreceptor frequencies than men, particularly for Merkel and Pacinian receptors ($p < 0.05$). Age had a significant impact on Meissner receptor activity, with a decline of 0.117 Hz per year ($p = 0.041$), highlighting age-related tactile sensitivity reduction. Dermatologist status did not significantly affect tactile sensitivity or mechanoreceptor responses, suggesting that professional expertise alone may not influence objective palpation results.

**Conclusion:**

The TouchyFinger device reliably differentiates tactile roughness objectively through vibrational frequency measures. This technology holds promise in reducing subjectivity in dermatological palpation, considering demographic variability, particularly sex and age.

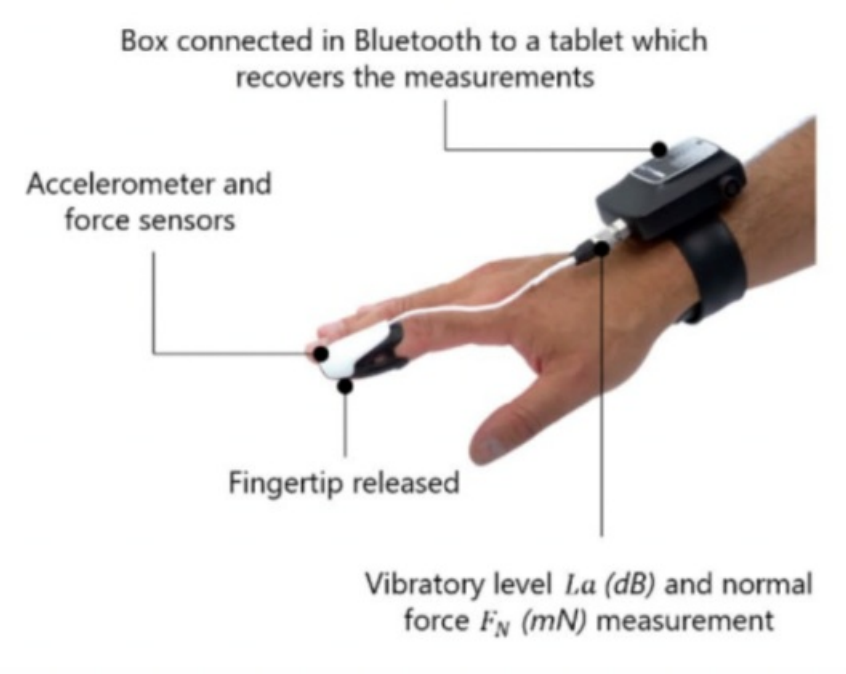


Figure 1**:** TouchyFinger device setup showing fingertip sensors and wrist unit measuring vibratory levels ($L_a$, dB) and force ($F_n$, mN), with data sent via Bluetooth to a tablet.

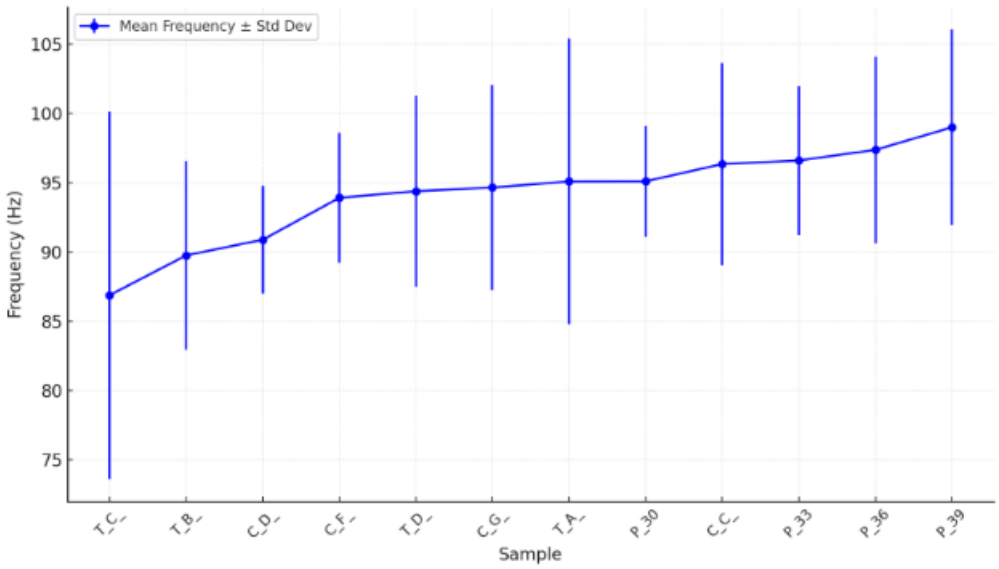


**Figure 2.** Mean vibrational frequency (Hz) ± standard deviation across tactile samples ordered by increasing roughness.


**Abstract N°: 3879**

# Comparative Efficacy of Trichloroacetic Acid Combined with Silver Nitrate and Cryotherapy in Treating Planter Warts

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**Introduction & Objectives:**

Warts are benign growths that affect the skin and mucous membranes. Comparative studies evaluating the efficacy of trichloroacetic acid (TCA), silver nitrate, and cryotherapy for treating plantar warts reveal distinct advantages for each treatment modality.**

**Objective:** To determine the comparative efficacy of trichloroacetic acid with silver nitrate and cryotherapy in treating planter warts.**

**Materials & Methods:**

It was a descriptive, cross-sectional hospital-based study conducted at MMSC. Data were analyzed by Statistical Package for Social Sciences (SPSS) Version 26

**Results:**

A total of 100 patients participated in the study. The majority were male 82 (82%), while females accounted for 18 (18%). The age distribution showed that most participants were between 20-29 years 34 (34%) and 30-39 years 33 (33%). The duration of the disease was less than 3 months for 50 (50%) participants, while 44 (44%) had the disease for 3-6 months. The difference in the number of sessions required between the two treatment groups was statistically significant (P-value = 0.001). The overall difference in treatment timelines between the two groups was not statistically significant (P-value = 0.310). The difference in treatment outcomes between the two groups was not statistically significant (P-value = 0.493). The difference in recurrence between the two groups was statistically significant (P-value = 0.003). The difference in the duration of recurrence between the two groups was not statistically significant (P-value = 0.812). The difference in the duration of treatment between the two groups was statistically significant (Pvalue = 0.000). This difference in side effect severity between the two groups was statistically significant. Overall, the results indicated a significant difference in efficacy between the treatments

**Conclusion:**

The study demonstrates that TCA with silver nitrate is more effective and has a better safety profile than cryotherapy for the treatment of plantar warts. These findings support the recommendation of TCA as a first-line treatment option, particularly for patients with a high risk of recurrence or those who may be sensitive to the side effects of cryotherapy. Further research with larger sample sizes and longer follow-up periods is recommended to confirm these results and assess long-term outcomes .


**Abstract N°: 3960**

# PCR Amplification and Sequencing of Pathological Wax Rolls to Assist in the Diagnosis of a Case of Verrucous Cutaneous Tuberculosis Infected with Mycobacterium shigaense

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**Introduction & Objectives:**

This report describes a case of verrucous cutaneous tuberculosis caused by the rare Mycobacterium shigaense. The diagnosis was confirmed through PCR amplification and DNA sequencing of the affected skin tissue.

**Materials & Methods:**

A 47-year-old male patient presented with a 10-year history of itchy plaques on the right hip and groin. Examination showed dark red nodules and plaques, scratching marks, scarring, marginal cicatrization, and a few skin flakes. The lesions were tender to the touch. All laboratory tests, including blood and urine routines, syphilis, HIV, and coagulation function, were within normal limits, while the T-Spot test was positive. Chest CT revealed a symmetric thoracic cage, normal ribs and soft tissues, increased lung markings, spotty calcifications in the upper lobe of the right lung with clear margins, and other unremarkable findings. Histopathology of the skin lesion indicated parakeratosis, irregular epidermal hyperplasia, and a mixed inflammatory cell infiltrate, primarily composed of lymphocytes, plasma cells, and neutrophils, with visible multinucleated giant cells. Acid-fast staining was negative, suggesting verrucous cutaneous tuberculosis. PCR amplification detected Mycobacterium tuberculosis DNA in the skin lesion tissue, and subsequent DNA sequencing identified Mycobacterium shigaense.

**Results:**

The patient was diagnosed with verrucous cutaneous tuberculosis due to Mycobacterium shigaense. Following diagnosis, he was treated with oral isoniazid 0.3g daily, rifampicin 0.45g daily, and ethambutol 0.75g daily. After four weeks of treatment, the dark red nodules and plaques had decreased in size, with marginal cicatrization and residual skin flakes. The lesions were no longer tender, and the patient reported significant symptom improvement.

**Conclusion:**

Mycobacterium shigaense belongs to the group of nontuberculous mycobacteria, which can be transmitted through the environment (water, soil) and often cause opportunistic infections, particularly in immunocompromised individuals. Although its pathogenicity is relatively weak, it can cause pulmonary infections, skin and soft tissue lesions, or disseminated infections. Diagnosis relies on acid-fast staining, culture, and molecular identification methods such as 16S rRNA gene sequencing. In this case, PCR amplification and DNA sequencing of the initial lesion tissue provided a definitive diagnosis. The highly sensitive and specific PCR molecular diagnostic method offers characteristic evidence of the pathogen and serves as a valuable tool for addressing the inhomogeneity of mycobacterial infectious granulomatous lesions.


**Abstract N°: 4284**

**Reticulohistiocytoma: A Rare Challenging Histiocytic Proliferation**

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**Introduction & Objectives:**

Reticulohistiocytoma is a rare benign histiocytic disorder, characterized by the presence of single or multiple skin nodules. Due to its uncommon presentation, it can easily be misdiagnosed. Early identification and management are crucial to prevent complications and unnecessary treatments. We will highlight a unique presentation of reticulohistiocytoma and its successful management within a dermatology clinic.

**Materials & Methods:**

A 51-year-old male with no significant past medical history presented with an asymptomatic, elevated, firm, centrally yellow lesion (4.5 mm) on his right arm. The lesion, located near the anterior axillary line, had been observed for over 2 years without any significant symptoms. Dermoscopy and excisional biopsy were performed.

**Results:**

Clinical examination and history revealed no systemic involvement. Dermoscopy, histopathological and immunohistochemical correlations confirmed the diagnosis of reticulohistiocytoma. Immunohistochemistry showed positive staining for CD68 and CD163, markers of histiocytic proliferation, while other markers, such as CD1a and S100, were negative, ruling out Langerhans cell histiocytosis. The lesion displayed a low Ki67 index (5%).

**Conclusion:**

Our case underscores the importance of clinical awareness and accurate histopathological evaluation in diagnosing rare cutaneous conditions such as solitary reticulohistiocytoma. Timely surgical intervention can result in excellent outcomes with minimal morbidity. Given the benign nature of the disease, a conservative follow-up approach focused on patient education, self-examination, and periodic dermatological assessment are appropriate.


**Abstract N°: 4613**

**AI in Dermatology Training: Using SORA to Create Skin Biopsy Technique Videos**

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## Abstract: AI in dermatology training: using SORA to demonstrate skin biopsy techniques

**Introduction & Objectives:**

Developments in artificial intelligence (AI) are shaping today's methods in medical education, with text-to-video generation enriching learning for healthcare professionals. One pioneer in this department is SORA, developed by OpenAI in 20241. The use of procedural videos has already been explored and demonstrated to improve learning 2. The benefits of text-to-video production compared to traditional videos lie in the infinite and specific products produced, and the anonymity which comes from the absence of human artefacts. This allows an arsenal of high-quality and realistic manuscript videos with the only limitation being the user's imagination and specificity. With the increasing utility of virtual reality (VR) and augmented reality (AR) in medical education, the use of AI-generated videos is expedited. This paper aims to assess the use and clinical accuracy of SORA in dermatological biopsy techniques.

**Materials & Methods:**

Text prompts were input into SORA on 02/04/2025 to stimulate the generation of videos demonstrating varying biopsy procedures. The biopsy techniques demonstrated were punch, shave, excisional, and nail biopsies. These videos were critically appraised on both realism and clinical accuracy compared to the standard procedure practice.

For a comprehensive analysis of SORA's abilities, a further prompt with a base image of a punch biopsy was entered, and the product was further analysed for realism and clinical accuracy.

**Results:**

The SORA-generated images can be highly commended for their realism, namely the texture of the skin, the appropriate attire of the dermatologist, and the realistic setting of the procedures. These videos are however limited by their clinical inaccuracies such as their anatomical flaws, and a failure to capture all procedural nuances. The tools used by the dermatologist in the punch biopsy were considerably oversized, and the tool in the shave biopsy resembled that of a piece of paper.

When text prompts were paired with a base image3, the video produced demonstrated improved clinical accuracy.

**Conclusion:**

Whilst Sora failed to fully capture the technicalities of the procedures, our findings suggest that when supported by high-quality data, SORA could generate highly realistic and clinically accurate manuscript videos. These videos be widely applied to dermatology training, and further implemented in virtual and augmented reality. This emphasises the need for detailed and relevant datasets to potentiate the applicability of SORA in educational

settings. This could be solved through a partnership with AI video generation companies such as SORA and OpenAI, with clinical experts to validate and ratify the database.

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**Abstract N°: 4774**

**Patch Test Results in Pediatric Patients with Suspected Contact Dermatitis: A Single-Center Study**

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**Introduction & Objectives:**

Allergic contact dermatitis (ACD) in children is increasingly recognized, although its prevalence and sensitization patterns remain underexplored. Patch testing remains the gold standard for ACD diagnosis, yet data on its outcomes in pediatric populations are scarce. This study aimed to evaluate the prevalence and profile of hapten sensitization in children with suspected eczema, based on standardized patch test results.

**Materials & Methods:**

A retrospective analysis was conducted on 22 children (aged 6–17 years, median age 12) with suspected contact dermatitis who were referred for patch testing. All patients were tested using the Polish Baseline Series of 30 allergens. Patch test reactions were graded on a standardized 0–3 scale, where 0 = negative, 1 = weak positive, 2 = positive, and 3 = strong positive. Data on sex and age were collected to assess potential demographic correlations.

**Results:**

A total of 12 (54.5%) boys and 10 (45.5%) girls were included in the analysis. Positive patch test results (score ≥1) were found in 7 of 22 children (31.8%), with boys more frequently sensitized (5/12, 41.7%) than girls (2/10, 20%). The most common sensitizers were nickel (13.6%), para-phenylenediamine (13.6%), cobalt chloride (13.6%), methylisothiazolinone (13.6%), and methyldibromo glutaronitrile (13.6%). Eighteen of the 30 allergens (60%) yielded exclusively negative results. Co-sensitization was most frequently observed between nickel and cobalt, and between para-phenylenediamine and preservatives, with each combination occurring in two children. No significant differences in sensitization were observed between younger (<12 years) and older (≥12 years) children.

**Conclusion:**

This study confirms that contact sensitization can be identified in nearly one-third of children with suspected contact dermatitis, with nickel and cosmetic preservatives being the most frequently detected haptens. Boys appeared to be more frequently sensitized than girls, although age did not influence the results. The predominance of negative results for most haptens highlights the need for tailored pediatric series.


**Abstract N°: 4974**

# Subcutaneous Metastases of Basal Cell Carcinoma: First Reported Bedside Diagnosis Using Ex Vivo Confocal Microscopy

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**Introduction & Objectives:**

Basal cell carcinoma (BCC) metastases are exceedingly rare. Ex vivo skin imaging techniques, initially developed for intraoperative margin assessment during procedures such as Mohs surgery, are increasingly demonstrating broader diagnostic potential. We report the first known case of subcutaneous BCC metastases diagnosed bedside using ex vivo confocal microscopy.

**Materials & Methods:**

Diagnosis was performed with a VIVASCOPE ex vivo confocal microscope on fresh, unfixed skin biopsies stained with acridine orange and fast green. Image interpretation was conducted by a board-certified dermatopathologist with specialization in cutaneous pathology.

**Results:**

A 59-year-old male with a history of multiple BCCs and previous axillary lymph node metastasis from squamous cell carcinoma presented after a two-year lapse in care. He was admitted through the emergency department for multiple ulcerated skin lesions, subcutaneous nodules, pulmonary “ballooning” suggestive of metastatic dissemination, and lymphangitis. Biopsies of two ulcerated skin nodules and one subcutaneous nodule were obtained. Ex vivo confocal imaging revealed dense fibrous stroma interspersed with cohesive clusters of basaloid cells, consistent with infiltrative BCC metastases. These findings were subsequently confirmed by standard histopathology.

**Conclusion:**

Although metastasis from BCC is exceptionally rare, accurate and timely diagnosis is critical to optimize therapeutic management. In this case, treatment with vismodegib was initiated promptly—prior to definitive histopathological confirmation—due to the patient’s rapidly deteriorating clinical status and the urgent need for oxygen therapy. This case represents the first reported use of ex vivo confocal microscopy to diagnose metastatic BCC at the bedside. While this technology is routinely employed for intraoperative margin assessment in BCC, its potential extends to urgent dermatologic diagnosis, akin to frozen section analysis. This exceptional case highlights the value of ex vivo confocal microscopy in critical care dermatology.

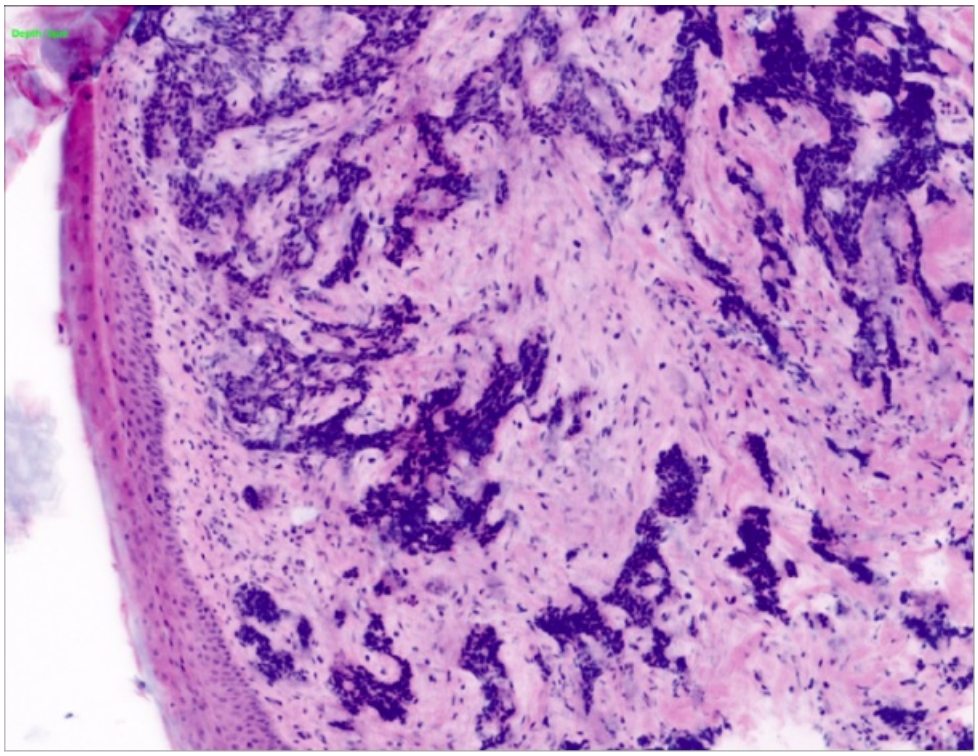

Figure 1: Ex vivo confocal microscopy image of an ulcerated cutaneous lesion demonstrating features consistent with basal cell carcinoma

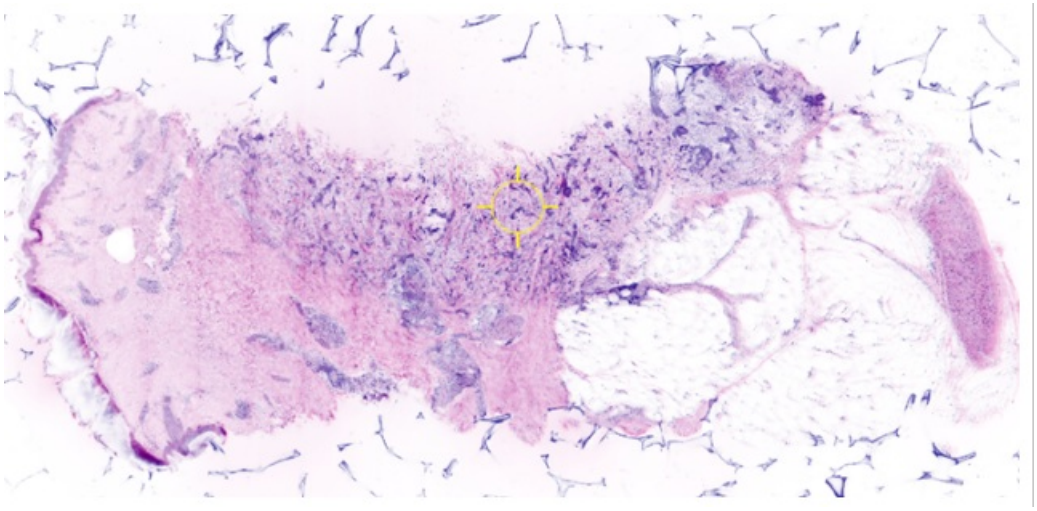

Figure 2 : Ex vivo confocal microscopy image of a subcutaneous metastasis of basal cell carcinoma


**Abstract N°: 5242**

**Can MRI accurately assist clinicians in diagnosing necrotizing soft tissues infections in the lower limbs ? A single-center retrospective cohort study**

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**Introduction & Objectives:**

Necrotizing soft tissue infections (NSTIs) are life-threatening conditions that require urgent surgical intervention, to prevent high morbidity and mortality. However, diagnosing NSTIs in clinical practice remains challenging, as no physic signs or single test are specific2. Magnetic resonance imaging (MRI) has been proposed to help in diagnosing uncertain cases, but its clinical utility remains unclear.

**Materials & Methods:**

We conducted retrospective, single-center study from 2010 to 2020, to assess whether MRI, in combination with clinical evaluation, improves diagnostic accuracy in suspected NSTI cases.We analyzed 46 cases of suspicion of NSTI with MRI performed upon admission to the Emergency Department of the University Hospital of Caen. Clinical, biological,radiological and surgical (if practiced) data were collected. Based on available datatwo experts categorized the final diagnosis as confirmed operated NSTI, non-necrotizing dermohypodermitis (DHBNN), or uncertain,. Two expert radiologists reviewed MRI images with only access to the MRI request form and images. Then, two other blinded clinical experts assessed the patient records in three stages: first, with access only to the clinical data available prior to the MRI, secondly, with access to the initial MRI results, and at least, with access to radiology experts' interpretations. Experts categorized each cases as certain, probable or excluded for NSTI at each stage. Concordance analyses, using unweighted and weighted kappa tests, were performed to compare the experts' assessment at every step with the final diagnoses.

**Results:**

Our cohort included 11 NSTI patients, 32 DHBNN patients, and 3 uncertain cases after reviewed of the final diagnostic. Among them, 78,3% received a dermatology consultation/assessment upon admission.

In our study, MRI did not improve diagnostic accuracy. None of the NSTI cases initially missed by clinical experts were identified after adding MRI reviewed by radiology experts. Additionally, MRI interpretation demonstrated poorly reproducibility between the two radiologists ($\kappa = 0.309 \pm 0.139$) contrary to the assessment of the initial clinical diagnosis by clinical experts (($\kappa = \pm$).

Our study also emphasizes theses ambiguous real-life cases requiring MRI which are were more often associated with obesity and chronic wounds, compared to literature, with no significant differences in admission symptoms between DHBNN and NSTI groups. Also, the mean delay for MRI and surgical intervention were 4.1 days and 7.5 days, respectively, indicating relatively slow disease progression. Mortality was low, with 4.4% of NSTI patients dying within 30 days. In reviewing medical records, it was often the close reassessment by clinicians that led to surgical decision, often well after the MRI was performed.

**Conclusion:**

Our study suggests that unclear cases may evolve into either non-necrotizing forms or subacute necrotizing

forms, especially in patients with high comorbidities, a scenario rarely discussed in the literature. There seems to be a real clinical continuum between necrotizing, with the caricature pattern of the necrotizing soft-tissue infections caused by invasive group A Streptococcus, and non-necrotising forms, which in practice contributes to the difficulty of clinical diagnosis. MRI does not seem to be a decisive tool for clinicians.


**Abstract N°: 5249**

**Cutaneous Schwannoma with Atypical Clinical Features: A Case Report**

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**Introduction:**

Schwannomas are well-capsulated, benign, and slowly growing tumors originating from Schwann cells of peripheral nerve sheath. They usually present as solitary, asymptomatic nodules located in the subcutis or dermis. Histological examination is essential for diagnosis.

Herein, we report a case of a young woman with schwannomas located on the forearm.

**Case report:**

A 22 years old woman with history od treated pulmonary and hepatic hydatic cysts presented with two years history of nodular mass on the left forearm. The lesion had ingradually increased in size, with more rapid growth over the past year. Dermatological examination revealed a firm, asymptomatic nodule approximately 1 x1 cm in diameter.Ultrasound showed a hyperechoic nodule without central vascularization, initially suggesting a lipoma. The patient underwent surgical excision of the mass. Histological analysis revealed a tumor composed of fusiform cells, and immunohistochemical investigation showed diffuse, strongly positive staining for S-100 protein, confirming the diagnosis of swchannoma The lesion was completely excised and the patient has been under follow-up for the last tree months with no signs of recurrence.

**Conclusion:**

Schwannomas are the most common benign peripheral nerve sheath tumors, with an estimated incidence of 5% in adults and 2% in children. They most often occur in the fourth and fifth decades of life, with no clear sex predilection. Although **etiopathogenesis** remains unclear, association with genetic disorders such as neurofibromatosis have been documented. Clinically, cutaneous schwannomsaare asymptomatic and their **differential diagnosis** includes proliferating pilomatricoma, epidermal cysts, desmoid tumor, and rheumatoid nodules. We would like to propose that lipomas should be included as a differential diagnosis to schwannomas, especially because the well-circumscribed appearance of the nodule with a greasy cut surface.

Surgica excision **remains the treatment of choice**. Imaging modalities like ultrasound are valuable for assessing tumor and vascular involvement. In our case, the absence of vascular flow aided in planning successful excision. While schwannomas are considered relatively common, their occurence on the extremities, particularly the forearm in young patients, is kess frequently reported in the literature.


**Abstract N°: 5421**

# Artificial intelligence-based smartphone app for skin cancer detection: a prospective diagnostic accuracy study

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**Introduction & Objectives:**

Smartphone apps using artificial intelligence (AI) for skin cancer detection could assist in early detection of skin cancer. However, prospective studies evaluating their real-world performance are generally lacking. This prospective study (ClinicalTrials.govNCT05246163) assessed the diagnostic accuracy and user acceptance of a widely used skin cancer detection app in a cohort resembling actual end-users.

**Materials & Methods:**

Between 1 February 2021 and 30 June 2023, adults (≥18 years) presenting to an early-access dermatology consultation with a lesion of concern were invited to participate. Patient-selected suspicious lesions were assessed using the smartphone app, and the risk score was compared with the final diagnosis, determined by either a clinical diagnosis by a senior dermatologist or histopathological examination. A multiple-choice survey, based on the Technology Acceptance Model, was administered in a separate cohort.

**Results:**

A total of 1,458 participants with 1,904 suspicious skin lesions were enrolled. Among these, 185 lesions (9.7%) were skin cancers, including 32 melanomas.

The app failed to detect 16.6% of lesions. It achieved a sensitivity of 82.5% (95% CI: 76.8–88.3) and specificity of 76.8% (95% CI: 74.7–79.0). In-app teledermatology review was performed in 65.7% of images, and significantly improved **specificity to 86.8%** (95% CI: 85.0–88.6; $p < 0.001$), at the cost of**reduced sensitivity to 75.3%** (95% CI: 68.0–81.7; $p = 0.023$). A survey among 446 participants revealed that 90% expect a sensitivity of at least 85%.

**Conclusion:**

This is the first large, independent prospective study of the diagnostic performance of a widely used AI-based smartphone app for skin cancer detection in a cohort that approximates actual end-users. These findings underscore the importance of independent clinical validation of deep learning algorithms in real-world healthcare settings and advocates for stricter regulation in order to ensure adequate protection of the public.


**Abstract N°: 5495**

# Characterization of patients with large/giant congenital melanocytic nevus through the body surface area affected by nevus and satellites using 3D total body photography with deep learning tools: Risk quantification of neurocutaneous complications.

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**Introduction & Objectives:**

Patients with large/giant congenital melanocytic nevi (LGCMN) are at risk of severe complications, including neurocutaneous melanosis and melanoma. Currently, no reliable non-invasive marker exists to classify these patients or assess related risks. Ideal classification should use reproducible, age-independent measures.

The VECTRA® WB360 3D body imaging system, introduced in 2017 for high-risk skin cancer screening, utilizes advanced algorithms to quantify nevi, analyze color variations and even measure the BSA. While its applications have been documented in conditions such as morphea, psoriasis and vitiligo, its utility in LGCMN cases remains underexplored.

This study aimed to evaluate the efficacy of the VECTRA®WB360 system in enhancing the assessment of patients with LGCMN. We hypothesized that 3D imaging improves PAS-based classification by quantifying BSA and the number of satellite nevi, thereby aiding in the identification of individuals at increased risk of complications.

**Materials & Methods:**

This cross-sectional, single-center study included patients with CMN evaluated at a Spanish tertiary referral hospital. Eligibility criteria included a projected adult size (PAS) of the CMN exceeding 20 cm or the presence of multiple CMN (two or more, any size). Patients were assessed with the VECTRA®WB360 (Canfield Scientific, Inc., New Jersey, USA) 3-dimensional imaging system, enabling detailed body mapping and measurement of nevi. Metrics included %BSA affected and nevus quantification using AI-assisted tools. Intraclass Correlation Coefficients (ICC) were calculated to compare clinician and ML-based counts. Logistic regression analyzed associations with clinical complications.

**Results:**

A total of 90 patients (59% women, mean age 23.9 years) were included. BSA estimation was feasible for 81 patients (90%). Mean %BSA of total CMN was 8.63, with a 7.7% increased risk of neurocutaneous melanosis per 1% increment ($p=0.02$). Satellite lesions %BSA (mean 1.29%± 3.31) was also associated with comorbidities, specifically neurocutaneous melanosis ($p<0.001$).

A comparative analysis of %BSA and PAS classification was performed, with a previously established threshold of 2% BSA used to differentiate medium (<2%) from large/giant (≥2%) CMN. When comparing both classifications,

it was observed that 56% (28/50) of patients with CMN ≥2% BSA had comorbidities at some point (p=0.049), whereas PAS classification did not demonstrate a significant association with comorbidity presence (p=0.073).

The VECTRA®WB360 AI system quantified a mean of 181.89±239.45 melanocytic lesions, compared to 208.67±361.11 by the physician, with a statistically significant difference between both methods using the Wilcoxon signed-rank test (Z=−2.637, p=0.008). ICC analysis demonstrated a moderate correlation (0.747) between physician and AI counts; however, variance increased with higher counts.

**Conclusion:**

In our experience, the 3D TBP avatars and deep learning software analytics can be used to evaluate patients with LGCMN since childhood. The VECTRA® WB360 3D imaging system could help to improve CMN patients' phenotyping, enabling a more precise evaluation and better characterization of complex patterns, and allowing an easy follow-up and comparison over time. The %BSA metric surpasses PAS limitations and could serve as a more reliable predictor of complication risk.


**Abstract N°: 5590**

**Dermatomyofibroma Mimicking Cutaneous Sarcoidosis: A case report**

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**Introduction & Objectives:**

Dermatomyofibroma is a rare benign mesenchymal tumour of the skin that typically affects young women and presents as a slow-growing, indurated plaque. It is often found on the shoulder, upper back, or axilla, and is rarely diagnosed in elderly patients or at unusual sites such as the breast. The condition poses diagnostic challenges due to its clinical similarity to keloid scars, sarcoidosis, necrobiosis lipoidica and malignancy. Diagnosis via histopathology is difficult in the absence of dermatological diagnostic certainty.

This case report aims to highlight the importance of a meticulous, multidisciplinary approach to complex dermatological lesions and to raise awareness of dermatomyofibroma as an important diagnostic consideration in atypical presentations.

**Materials & Methods:**

A woman in her 70s with known pulmonary and gastric sarcoidosis presented with a 15-year history of a gradually enlarging, pruritic, and painful lesion on her right breast. Initially thought to be a keloid scar, the lesion was treated conservatively with intralesional corticosteroids in 2018. After missing scheduled follow-up, she re-presented via GP referral in 2022 with worsening pain and a scarring-like plaque measuring 12 cm × 6 cm with raised erythematous edges. It was suspected to be cutaneous sarcoidosis, and topical Clobetasol followed by tacrolimus was initiated. In addition, an 8 mm punch biopsy was arranged, followed by an incisional biopsy due to inconclusive findings.  Immunohistochemistry (IHC) and fluorescence in situ hybridisation (FISH) were conducted.

**Results:**

The punch biopsy showed fibroblasts and dense collagen in the superficial subcutis, mild perivascular inflammation, and no pleomorphism, mitoses, or granulomas. Immunohistochemistry was positive for SMA, calponin, MSA, and CD34, negative for desmin, caldesmon, podoplanin, ERG, CD31, beta-catenin, CD68, EMA, S100, and cytokeratin, with a low Ki-67 index. This supported a myofibroblastic lesion.

The incisional biopsy showed similar features: fibroblasts and collagen in the superficial subcutis, no pleomorphism or mitoses, and consistent actin marker positivity with a low Ki-67 index. FISH showed no USP6 rearrangement, reducing the likelihood of nodular fasciitis. Clinicopathological correlation occurred via local and regional dermatology MDTs, including tertiary histological review. Findings supported a low-grade myofibroblastic lesion consistent with dermatomyofibroma. Plastic surgery referral was made for an excision.

**Conclusion:**

This case illustrates a diagnostically complex presentation of dermatomyofibroma in an elderly patient with multiorgan systemic sarcoidosis. Its atypical site, patient age, progressive symptoms, history of systemic sarcoidosis, and resemblance to both inflammatory and neoplastic entities contributed to diagnostic uncertainty. However, repeated biopsies with advanced immunohistochemistry and molecular testing, combined with multidisciplinary discussion, enabled diagnostic clarity.

In patients with systemic inflammatory disorders such as sarcoidosis, the differential diagnosis broadens significantly, increasing the likelihood of diagnostic delay or misclassification. This case underscores the importance of dermatology and histopathology collaboration to reach a diagnosis.

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**Abstract N°: 5828**

# Expanding Diagnostic Horizons: High-Frequency Ultrasonography in a Rare Pediatric Chondroid Syringoma Case

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**Introduction & Objectives:** Chondroid syringoma is a rare benign adnexal tumor usually seen in adults, with only eight pediatric cases reported in the English literature to date. Due to its nonspecific clinical features, diagnosis typically relies on histopathology. We present the ninth pediatric case and the first evaluated using high-frequency ultrasound (HFUS), aiming to highlight the diagnostic utility of HFUS in rare pediatric cutaneous tumors.

**Materials & Methods:** An 8-year-old girl with a gradually enlarging, skin-colored nodule on the left cheek was assessed via clinical exam, dermoscopy, and HFUS, including grayscale, Doppler, and elastography imaging. A punch biopsy was performed, and histopathologic evaluation included H&E, Alcian blue, PAS, and immunostaining with p63 and S-100. Total excision was performed following diagnosis.

**Results:** An 8-year-old girl presented with a 0.6-mm, skin-colored, painless, and immobile nodule on the left cheek, progressively enlarging over a 4-month period. On clinical examination, arborizing surface vessels were seen. Dermoscopic evaluation revealed a fine reticular vascular pattern on a mildly erythematous, pink-red background *(Figure 1A)*. HFUS demonstrated a well-circumscribed, round lesion measuring 7.67 × 6.9 mm, located in the dermis and hypodermis *(Figure 1B)*, with strong posterior acoustic enhancement and a heterogeneous hypoechoic internal structure. A 2.6 × 2 mm bulging extension into the subcutaneous fat was observed *(Figure 1B)*. Doppler imaging revealed peripheral and internal vascularity *(Figure 1C)*, while elastography confirmed the lesion's firm consistency *(Figure 1D)*.

A punch biopsy was performed, and histopathological analysis revealed findings consistent with chondroid syringoma, characterized by biphasic epithelial and mesenchymal components. Duct-like epithelial structures *(Figure 2A, white arrowhead)* and chondroid stroma *(Figure 2A, star)* were observed. Special staining with Alcian blue and PAS highlighted mucin within the stromal matrix *(Figure 2B)*, while immunohistochemistry revealed p63 positivity in stromal cells *(Figure 2C)* and S-100 positivity in myoepithelial cells *(Figure 2D)*.

Following diagnosis, complete surgical excision was performed. Histopathological evaluation of the excised specimen confirmed the initial diagnosis. At the three-month postoperative follow-up, there was no evidence of recurrence, and the patient remained in good health with an excellent cosmetic outcome.

**Conclusion:** Chondroid syringoma, a rare benign tumor, typically presents as a painless nodule in older adults, with an annual incidence of less than 0.1%. It is exceedingly uncommon in children, with the first pediatric case reported in 2007. To our knowledge, only eight pediatric cases have been reported in the English literature. This case, representing the ninth pediatric instance and the first to utilize high-frequency ultrasound, highlights the diagnostic value of advanced imaging. Ultrasound findings, including a well-circumscribed, heterogeneous hypoechoic lesion with strong posterior acoustic enhancement and Doppler-detected vascularity, provided unique insights. The rarity of this tumor in children and the novel use of ultrasound emphasize the importance of high-resolution imaging in evaluating atypical pediatric nodules and expand the understanding of this rare neoplasm.

Figure 1:

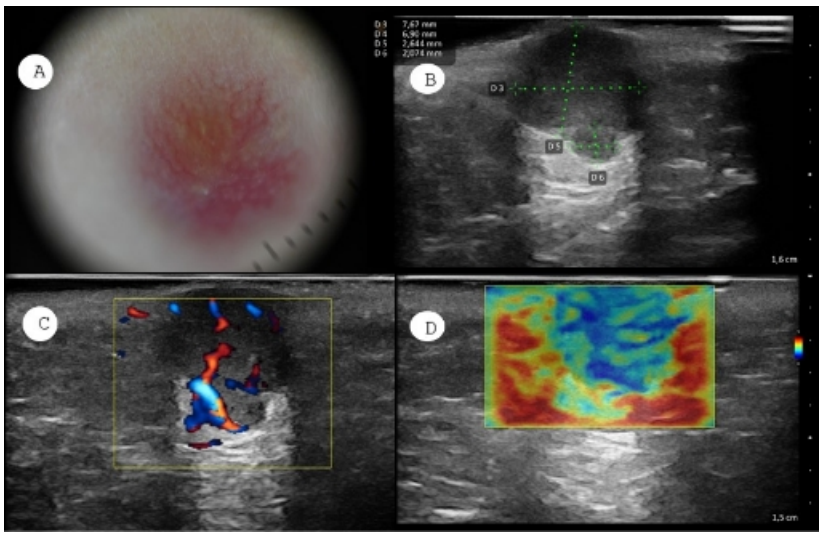
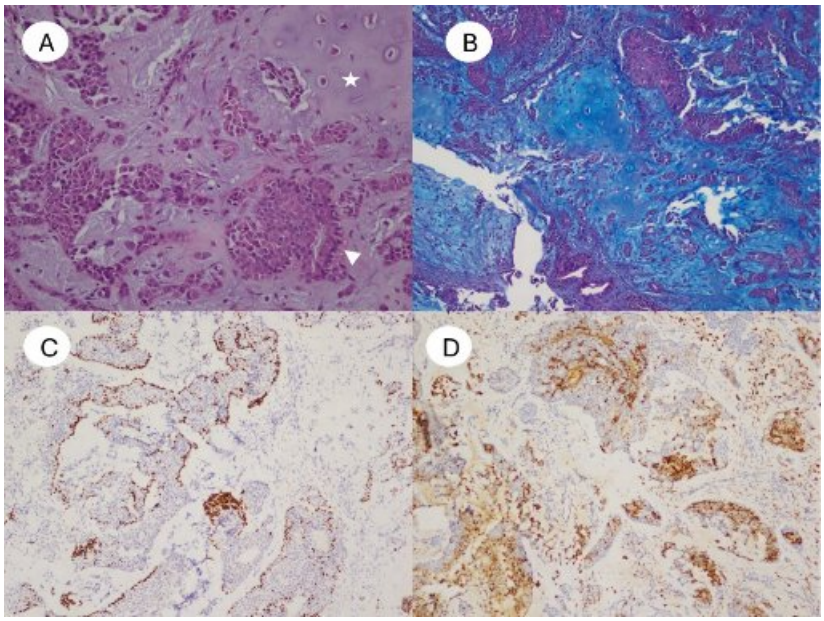



Figure 2:




**Abstract N°: 6003**

# Confocal Microscopy in melanoma patients. Is the miss worth the risk? Literature review regarding diagnostic accuracy in melanoma detection.

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## Introduction & Objectives:

Melanoma diagnosis remains a constant challenge in clinical practice. The advent of dermoscopy greatly improved clinical diagnosis, yet benign to malignant excision ratios remain high whilst misdiagnosis of melanoma has by no means been eliminated. Confocal microscopy is a non-invasive technique which aims to improve diagnostic accuracy. As with any diagnostic technique it produces both false negative and false positive diagnoses. False negatives risk melanomas not being excised at all or belatedly after confocal examination.

## Materials & Methods:

A literature review was performed searching the databases *Medline, PubMed, Scopus, Informit Health* and *Cochrane Library*. Keywords included “confocal microscopy”, “melanoma”, “pigmented lesion”, “false negative and “diagnostic accuracy”.

## Results:

With database and reference list perusal, 45 articles were identified and reviewed. Studies show that to reduce melanoma mortality, sensitivity of the testing modality and early diagnosis are key. Specificity is desirable but does not impact melanoma mortality. Confocal microscopy is used to support the decision to excise, enrol in monitoring or confirm a benign diagnosis.

## Conclusion:

A false negative diagnosis of a melanoma where the lesion is not excised risks progression, metastasis and increased mortality. A thorough history with clinical examination aided by dermoscopy with excision of concerning lesions is and likely should remain the gold standard for melanoma management. Before confocal microscopy can be used outside of well conducted trials it must demonstrate at least equivalent sensitivity to usual medical care and ideally document an overall benefit in terms of morbidity, mortality and cost.

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**Abstract N°: 6036**

# Immunoglobulin E in an inverted skin-prick test for rapid detection of cutaneous antigens

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**Introduction & Objectives:**

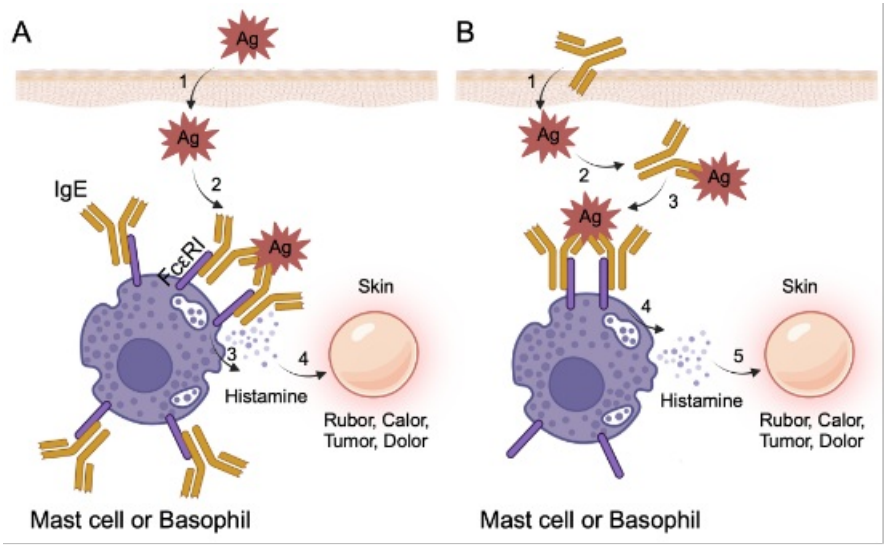
Current diagnostic approaches for infections often rely on laboratory-based molecular and serological assays. These can be expensive, require specialized equipment and may not be available in resource-limited settings. We describe a simple low-cost method for specific detection of cutaneous antigens providing instantaneous results.

**Materials & Methods:**

We suggest to reverse the conventional skin-prick test used for allergy testing by using IgE as a detection-tool rather than as a detection target.

The classical allergy skin-prick test introduces an allergen into the skin. Mechanistically, this is a test for a pre-existing seroconversion with allergen-specific IgE. If allergen-specific IgE is present within the skin, the introduced allergen will bind to IgE, crosslinking FceRI, the IgE receptor on mast cells and basophils, thereby triggering the formation of a visible local allergic response (Figure 1A).

We reverse this logic by introducing target-specific IgE molecules with the skin-prick. If the relevant target antigen is present within the skin, IgE-binding and cross-linking of FceRI will occur, also triggering an allergic response




We have designed a functional IgE antibody targeting the fibroblast growth factor receptor 3 (FGFR3), a protein expressed in the basal layer of the skin. The IgE was designed by class-switching a commercially available anti-FGFR3 IgG to IgE.

A skin-prick test was performed by applying 10 µL of IgE solutions at increasing concentrations and PBS control onto the forearm, followed by a gentle puncture with a sterile allergy lancet. The solution was allowed to remain on the skin for five minutes before removal.

**Results:**

We observed a concentration-dependent response, with an itch developing as quickly as two minutes after the skin prick. An erythema started to develop as early as five minutes post-application, reaching a peak at about 30 min post skin-prick with a striking edema, clear swelling and redness at the puncture site. No response was observed for the vehicle control. Importantly, the skin response was transient and self-limiting, resolving completely within three to four hours without systemic effects or persistent irritation.

**Conclusion:**

Our "ELISA on the skin" uses the specificity of IgE and the amplification mechanisms of the skin's innate immune cells for the generation of a target-specific signal. Ultimately, this enables the *in situ* detection of any relevant substrate of diagnostic interest present in the skin.

We suggest that the diagnostic potential for this method is immensely broad. Cutaneous depositions of pathological antigens are frequently seen with systemic diseases. Pathogens, for example atypical mycobacteria should be detectable.

We also expect that some skin cells will be destroyed at the site of the skin-prick, and this should also allow direct detection of intracellular antigens – e.g. pathogens, pathogenic protein variants of hereditary diseases. Besides, a slightly less gentle puncture will also injure capillaries in the skin, in that case also making the contents of the bloodstream accessible to IgE-based cutaneous detection.

Concluding, this technique could facilitate the rapid identification of various diseases with cutaneous surrogate biomarkers. Furthermore, its low cost and simplicity make it an excellent candidate for large-scale screening programs.


**Abstract N°: 6179**

**Association entre Porokératose et Carcinome Baso-Squameux : à propos d'un cas**

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**Introduction & Objectives:**

Porokeratosis is a rare genodermatosis characterized by abnormal keratinization. It is recognized as a precancerous condition with risk of malignant transformation, primarily into squamous cell or basal cell carcinoma. The malignant transformation risk is estimated between 6.9% and 30%. This study aims to report an unusual case of basosquamous carcinoma (BSC) that developed on progressive frontal porokeratosis, highlighting the importance of vigilant monitoring of these lesions.

**Materials & Methods:**

A 30-year-old male patient with no significant personal medical history was examined. He had been followed since childhood for shiny, keratotic, hypopigmented macular lesions on his face, forearms, and trunk, suggestive of porokeratosis. Family history revealed a cousin who had developed Bowen's disease and squamous cell carcinoma on similar lesions. Clinical examination, dermoscopy, Wood's light examination, and histopathological analysis of two biopsies were performed to establish the diagnosis.

**Results:**

The patient presented with two progressively enlarging frontal masses that had developed over two years on areas of porokeratosis, becoming ulcerated, exophytic, and painful on palpation. The left mass measured 6 cm and the right 12 cm, with an additional small ulcerated lesion on the nose. Dermoscopic examination revealed a characteristic whitish peripheral ring ("white track") with brownish centers and abnormal punctate vascularization. Wood's light examination showed a "diamond necklace sign," confirming porokeratosis. Histopathological study of the biopsies concluded basosquamous carcinoma developing on porokeratosis lesions. Risk factors identified included large lesion size, prolonged evolution, and family history of skin cancer.

**Conclusion:**

This case demonstrates the importance of rigorous and prolonged dermatological monitoring of patients with porokeratosis due to the real risk of malignant transformation. Key surveillance elements include regular follow-up, systematic biopsies when evolutionary changes are suspected, and education about early warning signs. A multidisciplinary approach involving dermatologists, surgeons, and pathologists is essential to ensure early diagnosis and prompt intervention, particularly for rare and aggressive tumors like basosquamous carcinoma.


**Abstract N°: 6288**

**Nodular Pemphigoid: A Distinct Entity**

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**Introduction & Objectives:**

Bullous pemphigoid is an autoimmune disease characterized by the presence of anti-BP180 and anti-BP230 autoantibodies directed against hemidesmosomes of the basement membrane. The coexistence of prurigo-like and bullous lesions may complicate the diagnostic process.

**Materials & Methods:**

A 71-year-old male with a medical history of hypertension, type 2 diabetes, glaucoma, asthma, and excision of two basal cell carcinomas on the face; presented with disseminated nodular lesions on all four limbs and the back. These lesions were excoriated in some areas and hyperkeratotic in others, with associated lichenification. Additionally, a five centimeters depigmented macule was observed on the shaft and glans of the penis. The lesions had been evolving over the past seven years. Peripheral eosinophilia at 830 cells/mm$^3$ is associated.

Histopathological examination of a skin biopsy showed epidermal thickening with a focal parakeratotic and orthokeratotic stratum corneum containing some coagulated serous material. The underlying epidermis was hyperplastic with elongated to broadened dermal papillae. The dermis exhibited a dense chronic lymphohistiocytic infiltrate and collagen bundles arranged perpendicularly to the papillary axis. Direct immunofluorescence revealed linear IgG and C3c positivity along the dermo-epidermal junction, while IgA, IgM, and C1q were negative. Autoimmunity tests were negative. Based on clinical and histological findings, a diagnosis of Nodular Pemphigoid was made. The patient was initially treated with oral prednisone (0.5 mg/kg/day) and methotrexate (15 mg/week), with improvement followed by relapse.

**Results:**

There are bullous pemphigoid cases begin with a non-bullous phase of variable duration, marked by nonspecific pruritic lesions. Clinically, hyperkeratotic, pruritic, and excoriated nodules on the extremities can be the first manifestation of nodular pemphigoid—as seen in this patient.

The literature describes two cases initially misdiagnosed as prurigo nodularis. Histology revealed features of chronic dermatitis, and direct immunofluorescence showed linear C3 deposits at the dermo-epidermal junction, confirming pemphigoid.

Biologically, a recent study found that patients with nodular pemphigoid may exhibit significant peripheral eosinophilia, correlating with older age and the severity of palmoplantar involvement. Histopathological features often resemble prurigo nodularis, with orthokeratosis, focal parakeratosis, and irregular epidermal hyperplasia—all of which were present in our patient's biopsy.

A case involving a 76-year-old woman diagnosed with nodular pemphigoid, confirmed by immunology, initially managed with topical corticosteroids, with temporary remission. Relapse occurred upon tapering. In this case, off-label treatment with dupilumab, led to complete remission within four months.

A study involving 363 patients with bullous pemphigoid treated off-label with omalizumab showed a complete remission rate of 76.13%.

**Conclusion:**

Nodular pemphigoid is a variant of bullous pemphigoid combining clinical features of prurigo nodularis and bullous pemphigoid. Diagnosis relies on a combination of clinical, histological, and immunological findings. Chronic papulo-nodular pruritic lesions unresponsive to standard therapy over many years should prompt further investigation, as they may suggest nodular pemphigoid.


**Abstract N°: 6323**

**Hemosialorrhea: A New Entity?**

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**Introduction & Objectives:**

Hematidrosis is a rare eccrine sweating disorder characterized by one or more episodes of spontaneous bloody sweating on intact, non-traumatized skin.

We report a case of this rare pathology with an unusual anatomical location.

**Materials & Methods:**

A 14-year-old girl with a history of peach allergy and congestive antral gastritis presented with eczema lesions on the palms, previously treated with topical corticosteroids with good improvement.

She was hospitalized for spontaneous oral cavity bleeding occurring daily for the past five years. These episodes, which last a few minutes and resolve spontaneously, occur multiple times a day without any trauma.

The bleeding episodes began following significant psychological stress related to a change of city and school environment.

Clinical examination of the oral mucosa between episodes,otorhinolaryngology evaluation and nasofibroscopy, revealed no abnormalities. Hemostasis workup was normal. Upper gastrointestinal endoscopy showed non-hemorrhagic micronodular bulbitis.

Based on the clinical presentation, the temporal correlation with the stress event, and unremarkable complementary investigations, a diagnosis of oral hematidrosis was made.

The patient was started on propranolol 10 mg/day following a cardiac evaluation, along with psychological support. A reduction in bleeding frequency was noted a few days after initiating treatment.

**Results:**

Hematohidrosis is a rare condition characterized by episodes of bleeding through intact skin. While bleeding can affect various skin sites, mucosal involvement—especially in the oral cavity—is extremely uncommon.

Only a few cases of oral hematidrosis have been reported in the literature, often in association with other bleeding sites, such as a case involving a 15-year-old girl who presented with both oral hematidrosis and hemolacria.

The exact pathophysiology remains unclear. One proposed mechanism involves an initial adrenaline-induced vasoconstriction of the periglandular vessels, followed by sudden vasodilation, allowing blood to extravasate into the eccrine sweat ducts. This theory is supported by reports of clinical improvement following treatment with beta-blockers.

In the absence of eccrine glands within the oral mucosa, we suggest that a similar mechanism could involve the salivary glands, potentially explaining the phenomenon in our patient.

To our knowledge, this is the first reported case of isolated oral hematidrosis without any other skin or mucosal

involvement. Therefore, we propose the term hemosialorrhea to describe bleeding from the oral cavity in the context of mucosal hematidrosis.

**Conclusion:**

Hematidrosis is an exceptionally rare condition, with only a limited number of cases reported worldwide. Although the bleeding episodes can be distressing, they are generally benign and do not compromise the the patient’s overall health. This case highlights a unique and isolated oral presentation, reinforcing the possible role of psychological stress and the effectiveness of beta-blocker therapy. Further studies are needed to better understand the underlying mechanisms and to guide optimal management strategies.

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**Abstract N°: 6351**

# Non-invasive imaging of male genital inflammatory dermatoses and intraepithelial neoplasia using line-field confocal optical coherence tomography: a case series

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[4]Universitat de Barcelona, Barcelona, Spain

**Introduction & Objectives:**

Non-venereal genital dermatoses in adult males account for up to 8.2% of dermatology consultations. While clinical examination and dermoscopy provide useful clues, a biopsy is required in over a quarter of cases. The main diagnostic challenge lies in differentiating inflammatory genital dermatoses from intraepithelial neoplasia (carcinoma in situ), which may mimic them dermoscopically. Though generally safe, biopsy remains invasive in such a sensitive area.

Non-invasive imaging techniques have shown promise in diagnosing and monitoring genital dermatoses. Line-field optical coherence tomography (LC-OCT) is a recently introduced non-invasive technique, offering axial/lateral resolution of ~1.1/1.3 µm and 500 µm depth, and producing images comparable to histological sections. While LC-OCT has been studied in certain genital dermatoses, data on inflammatory male genital dermatoses are limited.

This study aims to describe LC-OCT features of inflammatory genital dermatoses and compare them with their main differential diagnosis: intraepithelial neoplasia.

**Materials & Methods:**

This retrospective study included adult males with histopathologically confirmed inflammatory genital dermatoses (lichen sclerosus, lichen planus, psoriasis, Zoon's or non-specific balanitis) or intraepithelial neoplasia, diagnosed at our hospital between March 2023 and March 2024. All underwent LC-OCT imaging prior to biopsy. Statistical analysis was performed using Jamovi 2.6.26. All patients provided informed consent for anonymized image use.

**Results:**

Thirteen lesions from twelve patients (mean age: 61 years; range: 33–83 years) were included: 5 lichen sclerosus, 3 lichen planus, 3 psoriasis, and 2 HPV-associated intraepithelial neoplasias.

Lichen sclerosus (Fig. 1a): LC-OCT revealed a thinned epidermis overlying a hyperreflective dermis suggestive of dermal fibrosis, with prominent vascular structures. Vessels appeared polymorphous, mostly small and linear. Several lesions also displayed a subepidermal hyporeflective band-like structure, which may correspond to the pathognomonic hyaline oedema seen on histology.

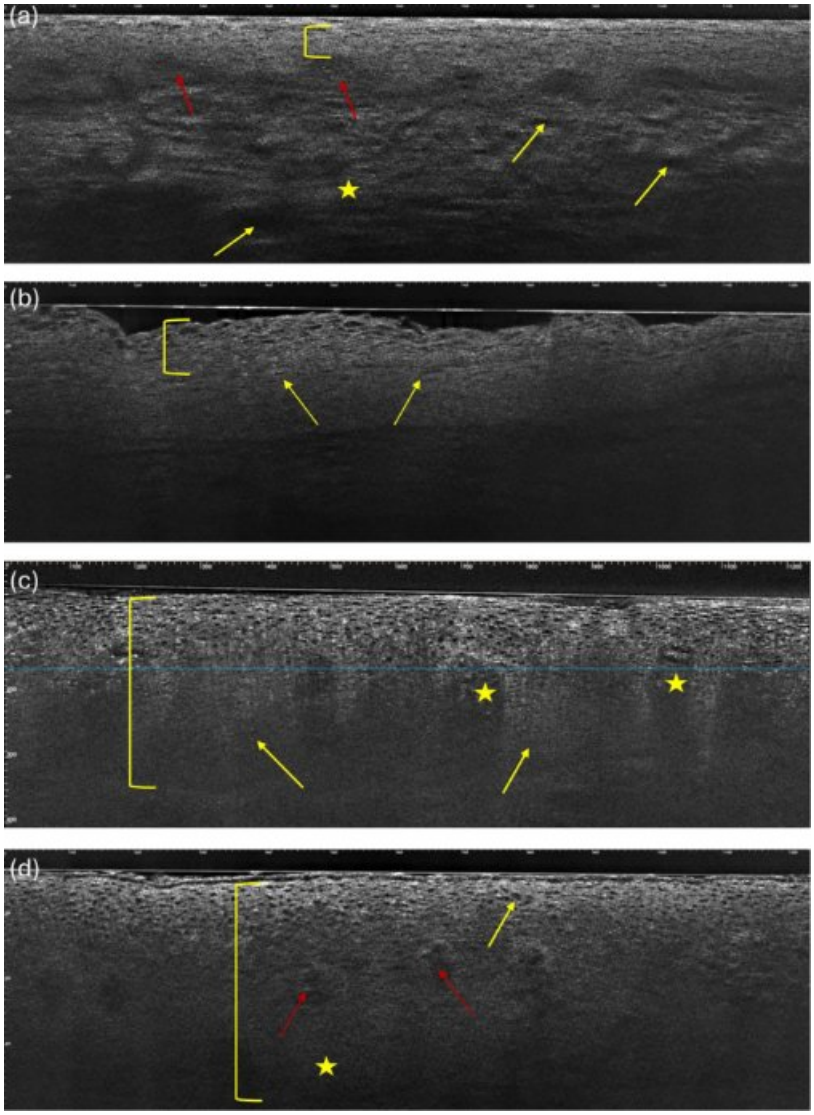
Lichen planus (Fig. 1b): LC-OCT consistently demonstrated a thickened stratum corneum, with enlarged keratinocytes visible in the stratum granulosum, likely reflecting histopathological hypergranulosis.

Psoriasis (Fig. 1c): LC-OCT typically showed a thickened epidermis with elongated rete ridges and papillomatous dermal papillae containing canalicular vessels. Keratinocytes appeared enlarged but monomorphic.

HPV-associated intraepidermal neoplasia (Fig. 1d): LC-OCT revealed a thickened epidermis with atypical and anastomosing rete ridges. Some atypically enlarged keratinocytes were observed within the epidermis. Dermal papillae contained hyporeflective, tortuous capillaries.

**Conclusion:**

LC-OCT offers vertical sections comparable to histology and integrates dermoscopic imaging, making it well suited for evaluating genital dermatoses. Our study shows that lichen sclerosus, lichen planus, psoriasis, and intraepithelial neoplasia display distinct LC-OCT patterns. While LC-OCT cannot replace histology, it may guide the decision and location for biopsy. Limitations include the retrospective design and the small number of intraepithelial neoplasias. Larger prospective studies are needed. LC-OCT holds promise as a non-invasive tool in the management of genital dermatoses.



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**Abstract N°: 6645**

# Dermatology 3.0: New technologies transforming skin care

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**Introduction & Objectives:** Digital innovation is transforming dermatological practice through enhanced precision, accessibility, and personalization. With skin conditions affecting a significant portion of the global population, leveraging technological advances has become crucial. This review examines how emerging digital technologies are revolutionizing dermatological care while addressing traditional barriers and creating new opportunities for improved outcomes.

**Materials & Methods:** We employed a three-step methodology: 1) An iterative expert consensus approach to identify transformative digital technologies and their applications in contemporary dermatological practice; 2) Semantic search using cosine distance on a database of abstracts published between 2015-2025 from the top 10 journals by impact factor in each relevant category (dermatology, oncology, medicine, AI, climate science, …); this yielded approximately 400,000 abstracts from which we identified and verified the relevance and quality of candidate abstracts; 3) Structured paper construction integrating verified scientific evidence while maintaining narrative coherence.

**Results:** Our analysis identified five interconnected technological domains transforming dermatology. Teledermatology has expanded significantly since COVID-19, employs videoconferencing and store-and-forward imaging to extend care to underserved regions, despite limitations in full-body examination capabilities. Artificial intelligence systems demonstrate expert-level accuracy in lesion analysis, though concerns persist about algorithmic bias from underrepresentation of darker skin tones in training datasets. Large language models offer complementary support for clinical decision-making and documentation. The patient care continuum extends through mobile health applications that enable systematic tracking of symptoms and treatment adherence, though most lack regulatory certification and present challenges in privacy and interpretability. Complementing these digital interfaces, wearable sensor technologies now permit continuous monitoring of environmental factors, quantification of scratching behaviors, and non-invasive assessment of therapeutic drug levels, generating actionable insights despite cost and data complexity barriers. Advanced non-invasive imaging modalities like line-field confocal OCT and multimodal RCM-OCT techniques further revolutionize diagnostics by providing histopathology-comparable visualization, while innovations in 3D printing and bioprinting offer personalized reconstructive solutions and ethical alternatives to traditional testing approaches.

**Conclusion:** This digital transformation represents a paradigm shift in dermatological care. Key priorities include addressing algorithmic bias, ensuring data privacy, improving accessibility, and developing standardized validation protocols. While these technologies hold immense potential, maintaining the human element remains essential, as the dermatologist's role extends beyond technological interpretation to holistic patient assessment. Balancing innovation with practical clinical utility and equitable access will be crucial for realizing digital dermatology's full potential.


**Abstract N°: 6662**

**Improving diagnostic accuracy in dermatology through Artificial Intelligence: A Pilot study in Primary Care**

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**Introduction & Objectives:**

Currently, skin diseases are one of the main reasons for consultation in Primary Care (PC). Due to the high variability in the diagnostic ability of PC in skin diseases, this produces a high rate of referrals to dermatology. The latest advances in artificial intelligence (AI) in dermatology show its potential in supporting the diagnosis and management of skin conditions, with studies indicating that the precision is equal to or greater than that of health professionals in the diagnosis of skin lesions from clinical and dermatoscopic images. However, evidence about the positive impact of these technologies is still scarce and with limitations.

The objective of this study is to demonstrate how an AI-based medical device such as Legit.Health can be effectively integrated into Primary Care to support diagnosis and contribute to the continuous training of professionals.

**Materials & Methods:**

For this study, 30 images of different cases of pigmented (malignant and benign) and inflammatory lesions were collected, along with relevant information that could help in the correct identification of the pathology. A total of 9 PC professionals were recruited, who participated in the experiment simultaneously on a single day. All participants received a tablet with identical characteristics (iPad mini) on which they viewed each case and answered the questions. They were presented with 30 images of various dermatological cases (pigmented lesions and inflammatory diseases), confirmed by experts, to evaluate their diagnostic accuracy with and without the assistance of the Legit.Health medical device.

**Results:**

Using the Legit.Health medical device, an improvement in diagnoses of 12.96% was observed: after observing the results of Legit.Health, the professional changed his diagnosis (initially erroneous) to the diagnosis proposed by the solution (correct). However, the rate of improvement varied depending on the pathology: in plaque psoriasis no improvement was observed because the professionals' responses were very good, while the increase in performance in hidradenitis is notable.

| Pathology | N. images | ICD-11 Code | Accuracy (%) | Accuracy with Legit.Health (%) | Relative difference (%) |
|---|---|---|---|---|---|
| Actinic keratosis | 2 | EK90.0 | 55.56 | 83.33 | 49.98 |
| Pustular psoriasis | 2 | EA90.4 | 5.56 | 22.22 | 299.64 |
| Plaque psoriasis | 3 | EA90.0 | 96.30 | 96.30 | 0.00 |
| melanocytic nevus | 5 | 2F20 | 75.56 | 77.78 | 2.91 |
| Melanoma | 5 | 2C30 | 86.67 | 91.11 | 5.12 |
| Urticaria | 5 | EB05 | 73.33 | 91.11 | 24.24 |
| Hidradenitis suppurativa | 5 | ED92.0 | 64.44 | 80.00 | 24.14 |
| Basal cell carcinoma | 3 | 2C32 | 91.67 | 88.89 | -3.00 |

**Conclusion:**

The integration of AI in Primary Care can transform clinical practice, supporting diagnosis and training of professionals. This study demonstrates the potential of AI to address current challenges in dermatology.


**Abstract N°: 6736**

**Angioleiomyomas: A Clinical, Pathological, and Ultrasonographic Study**

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**Introduction & Objectives:**

Angioleiomyomas are tumors derived from the smooth muscle fibers of blood vessel walls. Although rare, they should be considered in the differential diagnosis of nodular lesions seen in dermatological practice. The objective of this study is to describe the clinical, histological, and ultrasonographic characteristics of angioleiomyomas.

**Materials & Methods:**

We conducted a retrospective study including all angioleiomyomas diagnosed and surgically excised in our department between January 2020 and March 2025. Demographic data, clinical features, and histological findings were collected for all cases. High-frequency ultrasound (15–20 MHz) data were analyzed when available.

**Results:**

A total of 19 patients (8 women and 11 men) with a mean age of 54 years were included. The most common clinical presentation was a painful papulo-nodular or tubero-nodular lesion, with a mean size of 9.5 mm. The most frequent location was the extremities (16 out of 19 cases), with two-thirds located on the lower limbs. Ultrasound was performed in 14 cases, most of which revealed a well-defined, hypoechoic lesion in the dermis or hypodermis with irregular margins. Color Doppler imaging showed vascularity in 8 cases. Only one case demonstrated calcifications on both ultrasound and histology, corresponding to the only instance of an ossified angioleiomyoma.

**Conclusion:**

In our series, as in previous reports, most angioleiomyomas presented as painful nodular lesions on the extremities, with ultrasonographic features of a well-defined, hypoechoic lesion in the dermis or hypodermis, often showing vascularization. Therefore, this diagnosis should be considered in similar clinical and imaging contexts. However, the absence of vascularity does not exclude angioleiomyoma, as Doppler flow was observed in only 8 of the 14 patients assessed with ultrasound. Calcification is a rare finding (reported in 1.8–8% of cases), with ossified angioleiomyomas being exceptionally uncommon, as highlighted by the unique case in our series.

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**Abstract N°: 6898**

**Beyond the Microscope: Clinically Evident Nevoid Melanoma with Delayed Histological Confirmation.**

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**Introduction & Objectives:**

Nevoid melanoma is a rare and diagnostically challenging variant of malignant melanoma, often clinically and histologically resembling benign melanocytic nevi. Dermoscopically, nevoid melanomas often display a nevus-like pattern but may exhibit discrete atypical features such as irregular globules/dots, or atypical vascular structures. Its subtle presentation frequently leads to misdiagnosis and delayed treatment, which can negatively affect prognosis.

**Materials & Methods:**

We report the case of a 72-year-old male with multiple comorbidities, including psoriasis vulgaris, who was referred to our dermatology department for a routine skin examination. During evaluation, a suspicious pigmented lesion was noted on the back. Clinically, the lesion appeared as 1.1 × 1.7 centimeters dark brown to black nodule with irregular borders. Dermoscopy revealed an atypical pigment network, irregular globules, and a blue-white veil - highly suggestive of melanoma. The lesion was excised, but the initial histopathological examination described a melanocytic tumor of uncertain malignant potential. Due to strong clinical and dermoscopic suspicion, a second opinion was sought. Histological analysis revealed a tumoral proliferation located beneath a hyperplastic epidermis, which in some areas was thinned or effaced, without evidence of overt ulceration. The neoplasm was composed of confluent nests and bundles of atypical nevoid cells, characterized by scant cytoplasm and round to oval, hyperchromatic or vesicular nuclei with irregular nuclear contours. In certain cells, nucleoli were prominent and pleomorphic. The mitotic activity was low, with a maximum rate of 1 mitosis/mm$^2$. The Breslow thickness was measured at 1.2 mm. There was no evidence of lymphovascular or perineural invasion, and no microsatellites were identified.

**Results:**

The second evaluation confirmed the diagnosis of nevoid melanoma, classified as pT2a, Clark level IV. A wide local excision was performed, and sentinel lymph node biopsy was negative. The patient remains under regular follow-up without signs of recurrence.

**Conclusion:**

This case presents an uncommon scenario in which clinical and dermoscopic features clearly suggested melanoma, while histopathology initially failed to confirm the diagnosis - contrary to the typical presentation of nevoid melanoma. It emphasizes the importance of trusting clinical and dermoscopic expertise in the presence of histological ambiguity. Second-opinion pathology and multidisciplinary evaluation are essential for timely, accurate diagnosis in diagnostically challenging melanocytic lesions. Where available, non-invasive tools such as Reflectance Confocal Microscopy (RCM) may further aid in supporting clinical suspicion and guiding management.


**Abstract N°: 6954**

# Development and validation of a clinical algorithm to identify patients with atopic dermatitis and psoriasis at risk for paradoxical reactions under immunomodulatory therapies (the "Flip-Flop" phenomenon)

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**Introduction & Objectives:** Atopic dermatitis (AD) and psoriasis (PSO) are common chronic inflammatory skin diseases, affecting up to 5% of adults in industrialized countries. Both diseases significantly impact health-related quality of life and impose a substantial socioeconomic burden. Historically, AD and PSO were regarded as distinct entities due to their differing genetic backgrounds and immunopathological mechanisms (AD driven by type II inflammation (Th2), PSO by type III inflammation (Th17)). This dichotomous view led to the assumption that concurrent manifestation of both diseases in a single individual would be rare. However, recent studies suggest that the coexistence of AD and PSO is more common than previously recognized, with a pooled prevalence of approximately 2% among adults. Biologics may trigger transitions between AD and PSO, a phenomenon known as "paradoxical reaction" or "Flip-Flop" (FF). FF is assumed to result from an immunological imbalance caused by biologics, such as enhanced Th17 activation following Th2 inhibition. Our objectives were to develop and prospectively validate the first clinical algorithm to identify patients at risk for FF, with the secondary objective to refine the algorithm using machine learning.

**Materials & Methods:** Caucasian patients with AD, PSO and clinicopathologically confirmed FF were recruited from the CK-CARE registry (October 2020–August 2021). The scoring algorithm was designed to distinguish AD and PSO and establish FF as a separate disease group. The algorithm was based on the Hanifin and Rajka's and UK working party's criteria for AD and consensus guidelines for PSO. Twenty features (7 medical history, 13 examination findings) were identified, with AD-related features assigned positive weights (0.5 to 3.0 points) and PSO-related features negative weights (−0.5 to −3.0 points). The total score ranged from −12 to 12 points, categorized as follows: low (PSO: −12 to −5), intermediate (FF: −5 to 5), and high (AD: 5 to 12). The algorithm was validated and refined using machine learning.

**Results:** The validation study included 300 Caucasian patients (n= 238 with AD, n= 49 with PSO, n= 13 with FF), with a mean age of 41.2 years; 53.7% were female. The total FF scores for the AD and PSO groups differed significantly from the FF group ($p<.001$). The model achieved a generalized Youden Index of 78.9% (95% CI: 72.0%–85.6%) and an overall accuracy of 89.7%. Sensitivity was 100% for FF, 95.0% for AD, and 61.2% for PSO. Specificity was 89.2% for FF, 100% for AD, and 100% for PSO.

**Conclusion:** The FF algorithm is the first validated tool designed to identify patients with FF which is of therapeutic relevance in the growing landscape of new targeted therapies for AD and PSO.


**Abstract N°: 7000**

**The E-logbook in Dermatology: Towards a New Era in Medical Training**

Ouiame El Jouari*[1], hajar dahmani[1], Salim Gallouj[1]

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**Introduction & Objectives:**

Electronic logbooks have been explored in various fields and have proven to be valuable educational tools. While their use in surgical training has been extensively studied, there is limited research on their application in the medical training of dermatology residents.

We created the E-dermaBook to allow dermatology residents to record their experiences, reflect on their learnings, and engage in self-evaluation and assessment. By facilitating a comprehensive monitoring system for seniors.This will help evaluate its effectiveness as both an analytical and educational ressource within the dermatology department. Additionally, We will conduct a literature review on the use of electronic logbooks in medical and surgical trainings.

**Materials & Methods:**

Our dermatology department, in partnership with the Information Technology department, has developed an online dermatology platform called 'E-DermaBook'. It consists of two distinct sections: "Resident," designed for residents, and "Senior," which enables professors to closely monitor and evaluate the resident's progress.

**Results:**

The E-DermaBook offers a structured environment that provides complete access to the four-year residency curriculum, making it easier to find the courses necessary for training, including the care activities to be validated. It is organized into seven sections:

· Degrees and University Training

· Research Activities

· Teaching Activities

· Care Activities

· Conferences and Scientific Events

· Associative Activities

· Final Specialty Thesis

**Conclusion:**

The E-logbook represents a groundbreaking educational initiative in medical training, having been adopted for the first time by the dermatology team at the CHU of Tangier. We have received positive feedback and appreciation for its design and functionality. We encourage more departments, especially dermatology, to adopt this E-logbook and share their experiences.


**Abstract N°: 7102**

**the e-logbook in dermatology: towards a new era in medical training**

Ouiame El Jouari*[1], hajar dahmani[1, 2], Salim Gallouj[1]

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**Introduction & Objectives:**

Electronic logbooks have been explored in various fields and have proven to be valuable educational tools. While their use in surgical training has been extensively studied, there is limited research on their application in the medical training of dermatology residents.

We created the E-dermaBook to allow dermatology residents to record their experiences, reflect on their learnings, and engage in self-evaluation and assessment. By facilitating a comprehensive monitoring system for seniors.

The objective is to describe the development of the first electronic dermatology logbook in Morocco in order to assess its effectiveness as an analytical and educational tool for residents.

Additionally, we analyze the impact of electronic logbook implementation on the medical training of residents through a literature review.

**Materials & Methods:**

The Dermatology E-logBook project was developed by our Dermatology Department in collaboration with the IT Department of the Mohammed VI University Hospital Center in Tangier, Morocco. The development phase took place between August 2024 and December 2024 and is subject to ongoing updates. A comprehensive and structured description of the electronic logbook's framework and guiding principles was conducted, outlining the sections dedicated to the documentation of training activities, clinical tasks, reflective practices, evaluations, and feedback from practical experiences.

**Results:**

We have designated our electronic dermatology logbook as**E-DERMABOOK**. Access to this platform is granted via an external network using personal login credentials, which are directly linked to the section corresponding to the user's status (Figure 2).

The **E-DERMABOOK** includes three distinct sections:

- The **"Resident"** section, reserved for dermatology residents.
- The **"Professor"** section, dedicated to monitoring and in-depth evaluation of residents' progress by faculty members.
- A **shared section** presenting the department, including the medical team, its structure and workflow, the general and specific educational objectives of the training program, as well as the department's internal regulations.

**Introduction to the Department section is a** shared section that presents the department, including the medical team, its structure and workflow, the general and specific educational objectives of the training program, as well as

the department’s internal regulations.

The section dedicated to **professors** provides a comprehensive overview of the platform.

The platform allows dermatology residents to record their training activities, organized into seven categories.Degrees and University Training, research Activities, Teaching Activities, Care Activities, Conferences and Scientific Events, Associative Activities, Final Specialty Thesis

**Conclusion:**

The **e-logbook** represents a promising tool to enhance the training of dermatology residents while facilitating data collection and reporting. It could also contribute to strengthening mentorship within the dermatology department and optimizing certification at both local and national levels.

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**Abstract N°: 7241**

**Beyond the Algorithm: How Young Dermatologists Perceive and Embrace Artificial Intelligence in Clinical Practice**

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**Introduction & Objectives:**

Artificial intelligence (AI) is steadily weaving itself into the fabric of modern dermatology, offering unprecedented opportunities for diagnosis, decision support, and education. However, the human dimension, how young dermatologists perceive, accept, and envision working with AI, remains underexplored.

**Objectives:** To assess awareness, practical exposure, and attitudes toward AI among young dermatologists, while identifying perceived opportunities and barriers to its adoption in daily clinical settings.

**Materials & Methods:**

A structured online questionnaire was distributed via dermatology-focused digital networks. Participants included dermatology residents and recently certified specialists. The survey assessed prior experience with AI tools, perceived benefits and risks, and the perceived readiness of medical education to address AI's rise. Results were analyzed using descriptive statistics.

**Results:**

Sixty-two responses were collected.

29% had used AI tools, primarily for diagnostic support or image-based learning.

68% trusted AI as a complementary clinical tool, but only 16% would rely on it independently.

Main perceived benefits included improved diagnostic precision (59%) and extended reach to underserved regions (45%).

Key concerns involved data security (56%), erosion of clinical judgment (39%), and ethical accountability (34%).

Strikingly, 87% of respondents felt that current dermatology training does not adequately prepare them for AI integration, and expressed a strong desire for dedicated modules or workshops.

**Conclusion:**

This survey highlights a generation of dermatologists navigating the intersection between tradition and technology. While receptive to AI's potential, young practitioners emphasize the need for ethical clarity, human oversight, and structured education. Integrating AI literacy into dermatology curricula may be crucial not only for safer clinical adoption, but for empowering dermatologists to shape how technology enhances, rather than replaces, their role in patient care.


**Abstract N°: 7246**

**Chin Dermatosis as a revealing indicator of chronic periodontitis: A rare case report**

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[1]ibn roched university hospital, dermatology and venerology, casablanca, Morocco

**Introduction & Objectives:**

Chin dermatoses are a common reason for dermatological consultation and are usually attributed to acne, irritant contact dermatitis or other inflammatory skin conditions. However, in certain cases they may serve as cutaneous indicators of deeper local or systemic pathology.

We report the case of a patient in whom chronic, treatment-resistant chin dermatosis led to the diagnosis of underlying chronic periodontitis. Our aim is to highlights the importance of a broad differential diagnosis and a multidisciplinary approach in the management of atypical or refractory facial dermatoses.

**Case report:**

This is a 40-year-old female patient with no significant past medical history who presented with a painless, pruritic dermatosis of the chin of 20 years' duration. Dermatological examination revealed a slightly infiltrated erythematous-squamous lesion centred on a fistula with intermittent serosal discharge. The patient was treated several times without improvement. The panoramic radiograph showed no underlying bone involvement and the retroalveolar radiograph showed associated periodontitis. The patient underwent root canal treatment with good progress.

**Conclusion:**

Chin dermatosis, often treated as a benign skin condition, may sometimes be indicative of underlying disease such as chronic periodontitis. The inflammatory cascade initiated by periodontal infection may contribute to a localised cutaneous reaction. The differential diagnosis of chin dermatosis includes common conditions such as perioral dermatitis, acne vulgaris, contact dermatitis, seborrhoeic dermatitis, and infectious dermatoses. In this case, the persistence of symptoms despite appropriate dermatological therapies raised clinical suspicion and warranted further investigation. A comprehensive, multidisciplinary approach that includes dermatological findings and dental and medical teams can lead to more accurate diagnoses and targeted treatments.

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**Abstract N°: 7359**

# Morel-Lavallée Lesion: A Challenging Diagnosis in a Case of Post-Traumatic Thigh Collection

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**Introduction & Objectives:**

The Morel-Lavallée lesion is a closed degloving injury characterized by a separation of the subcutaneous tissue from underlying fascia, resulting in fluid accumulation and localized swelling. Although recognized for over a century, this lesion remains underdiagnosed in clinical practice, often leading to delayed or inappropriate treatment. This case report aims to emphasize the importance of including Morel-Lavallée lesions in the differential diagnosis of post-traumatic soft tissue swellings and to highlight the crucial role of appropriate imaging and clinical suspicion in achieving accurate diagnosis and management.

**Materials & Methods:**

A 54-year-old female resident from Rio de Janeiro, involved in a motorcycle accident, presented to the emergency setting for evaluation, being initially prescribed amoxicillin for fourteen days and dipyrone. During the course of treatment, the patient developed a painless, non-inflammatory swelling measuring 15 x 12 cm over the lateral aspect of the right thigh, leading to initial aspiration of serosanguineous fluid. Persistent symptoms prompted dermatological evaluation, during which a well-defined, fluid-filled, non-tender mass was identified and the patient's current medications were reviewed.

**Results:**

Based on the clinical findings and the persistence of symptoms, a high-frequency ultrasound with color Doppler was performed, revealing an encapsulated anechoic collection suggestive of a serohematoma, consistent with a Morel-Lavallée lesion. Ultrasound-guided aspiration of 8 mL of fluid was conducted, resulting in significant symptomatic improvement. Nevertheless, the lesion persisted, requiring additional ultrasound-guided aspiration, which also failed to achieve complete resolution. The recurrence of fluid accumulation and the presence of a well-formed capsule indicated a low likelihood of spontaneous resolution, thereby supporting the need for surgical intervention.

**Conclusion:**

Morel-Lavallée lesions often present a diagnostic challenge due to their clinical overlap with abscesses, hematomas, lipomas or cysts. In this case, the absence of inflammatory signs did not prevent the use of antibiotics or an unsuccessful drainage attempt, illustrating how misdiagnosis can lead to delayed or inadequate treatment. Early recognition requires a high index of suspicion, thorough clinical history and targeted imaging—particularly high-frequency ultrasound with color Doppler. Treatment strategies vary from conservative measures, such as percutaneous drainage and compression, to surgical intervention. Lesions exceeding 50 mL are associated with higher recurrence rates, favoring surgical approach. This case underscores the importance of including Morel-Lavallée lesions in the differential diagnosis of post-traumatic soft tissue swellings. Greater clinical awareness can prevent unnecessary procedures, reduce morbidity and significantly improve patient outcomes, reinforcing the relevance of this underdiagnosed entity in dermatological practice.


**Abstract N°: 7380**

**3D Total-Body Photography in Patients at High Risk for Melanoma. A Randomized Clinical Trial**

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***Encore Abstract**

**Introduction & Objectives:** Three-dimensional (3D) total-body photography (TBP) can support clinicians in monitoring and identifying changes to skin lesions in patients at high risk of melanoma. Our objective is to assess the clinical outcomes between patients at high risk of melanoma receiving usual clinical care compared with those receiving usual care plus 3D TBP and sequential digital dermoscopy imaging (SDDI) every 6 months via teledermatology.

**Materials & Methods:** This randomized clinical trial was conducted at a research hospital in Brisbane, Australia, from April 2018 to October 2021, with adult patients (≥18 years) at high risk of developing a primary or subsequent melanoma. Data analysis was conducted from March 2022 to June 2024. Usual care was compared to usual care plus 3D-TBP in person and SDDI via teledermatology at baseline, 6, 12, 18, and 24 months. The control group continued usual care and completed online surveys every 6 months. The main outcome measure was the rates of excisions and/or biopsies of lesions suggestive of melanoma, and the results of histopathological testing.

**Results:** The analysis included 314 participants (mean [SD] age, 51.6 [12.8] years; 194 females [62%]) who completed all of the study procedures (158 in the intervention and 156 in the control). In all, 1527 excisions (905 intervention and 622 in the control) were performed among 226 participants (122 intervention and 104 controls), with 67 (4%) histopathologically confirmed as melanoma and 402 (26%) as keratinocyte cancer (KC). The mean (SD) number of lesions of any type excised per person was significantly higher in the intervention (5.73 [6.77]; 95% CI, 4.66-6.79) compared to the control group (3.99 [5.72]; 95% CI, 3.08-4.89; P = .02). Fewer melanomas were detected among the intervention group compared with the control (24 [35%] vs 43 [64%], respectively), and therefore, a lower incidence rate: 2.03 (95% CI, 1.30-3.02) vs 3.62 (95% CI, 2.62-4.88), respectively. After 1 year of follow-up, the intervention had a lower, but not statistically significant, rate of melanoma per person: 0.08 (95% CI, 0.03-0.13) compared with 0.16 (95% CI, 0.08-0.25) in the control; an average of 0.86 (95% CI, 0.55-1.16) vs 0.42 (95% CI, 0.24-0.59) KCs per person; and 2.01 (95% CI, 1.50-2.51) vs 1.39 (95% CI, 0.98-1.82) excisions or biopsies per person, respectively.

**Conclusion:** The results of this randomized clinical trial indicate that the addition of 3D-TPB and SDDI to usual care in a teledermatology setting without AI (artificial intelligence) increased the number and rate of skin excisions and biopsies performed. These findings indicate that careful implementation is required to offset increased biopsies of benign lesions, and further trials are needed in which 3D total-body photography is

integrated with teledermatology services or compared with usual care instead of being offered as an add-on service. This study shows that conducting clinical trials in this setting is feasible.


**Abstract N°: 7520**

**Misleading double syphilitic positivité :résistant syphilis or paranéoplasique Erythema Elevatum Diutinum ?**

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**Introduction:** Secondary syphilis can be mimicked by paraneoplastic skin manifestations in immunocompromised patients, with falsely positive serologies. We report a case of diagnostic confusion between resistant syphilis and erythema elevatum diutinum (EED).

**Case Report:** An 80-year-old male, followed for 21 months for multiple myeloma under chemotherapy, reported a history of multiple sexual partners in his youth (60 years prior). For 18 months, he presented with a pruritic, reddish papular eruption on the upper back, extensor surfaces of the knees, upper and lower limbs, as well as copper-colored macules on the soles. The lesions followed a relapsing-remitting course. Syphilis serology showed positive TPHA and VDRL at 1:4. HIV, HCV, and his wife's syphilis serologies were negative. Skin histology revealed a dermal neutrophilic infiltrate with leukocytoclastic vasculitis. He was treated with Benzathine Benzylpenicillin (3 weekly injections of 2.4 million IU) without improvement; VDRL decreased slightly to 1:2. A second-line treatment with Ceftriaxone (2 g/day for 10 days) is currently being evaluated. Neurological examination was normal, with no signs of neurosyphilis.

**Discussion:** The clinical presentation, suggestive skin lesions, and positive syphilis serology (TPHA+, VDRL+) initially indicated secondary syphilis. However, the lack of response to appropriate antibiotic therapy calls for diagnostic reconsideration. HIV infection, which can lead to atypical or refractory forms of syphilis, was ruled out. Subclinical neurosyphilis remains possible, though the neurological exam was unremarkable. An old or reinfected syphilis case appears unlikely due to the absence of recent sexual activity and a negative serology in the spouse. Studies, particularly from China, have reported Treponema pallidum mutations that may confer penicillin resistance, though such cases are rare and poorly documented. In the context of multiple myeloma, the histological findings, chronic course, absence of mucosal or visceral involvement, and treatment resistance suggest a neutrophilic dermatosis, particularly erythema elevatum diutinum (EED). This diagnosis is supported by the known occurrence of false-positive syphilis tests in dysglobulinemia associated with myeloma. This case thus raises the dilemma of a possible resistant syphilis versus a paraneoplastic EED with misleading double serologic positivity.

**Conclusion:** Double syphilitic serologic positivity in the context of multiple myeloma requires careful interpretation to avoid diagnostic errors and ensure appropriate management.


**Abstract N°: 7687**

**The One-Stop Solution for BCC: A Novel Imaging-Guided Margin Mapping Method**

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**Introduction & Objectives:**

Traditional margin mapping techniques for basal cell carcinoma (BCC), such as Mohs micrographic surgery, are often invasive, time-consuming, and costly. To overcome these limitations, we developed the "BCC-One-Stop-Shop Method," which combines in-vivo and ex-vivo margin assessment using Line-field Confocal Optical Coherence Tomography (LC-OCT) and Dynamic Optical Coherence Tomography (D-OCT). This integrated approach aims to streamline diagnosis, surgery, and margin control within a single patient visit. Here, we describe the implementation of this method, compare outcomes with histological findings, and highlight its clinical advantages.

**Materials & Methods:**

BCC margins were delineated in four quadrants using color-coded tattoo pens. Dermoscopic mosaic imaging supported AI-assisted lesion colocalization for precise mapping. In-vivo LC-OCT was used to record video scans along the marked borders, with real-time BCC probability scores generated by an integrated AI algorithm. Central tumor areas were further assessed using D-OCT and 3D LC-OCT stacks to determine depth and subtype.

Post-excision, specimens were analyzed ex-vivo using a modified LC-OCT handheld device and movable sample holder to capture high-resolution videos and 3D scans, including the tumor base. Subsequent histological processing provided reference data for correlation with imaging results.

**Results:**

A total of 50 BCC lesions from 43 patients were included; 32 lesions were additionally examined with ex-vivo LC-OCT. Across 195 analyzed tissue quarters, 38 lesions (76%) were on the head, 7 (14%) on the trunk, and 5 (10%) on the extremities. Subtypes included 7 superficial, 26 nodular, and 14 infiltrative BCCs; 4 were mixed.

In-vivo LC-OCT demonstrated a sensitivity of 81.8% at the lesion level (86.4% at the quarter level), and a specificity of 94.8% (96.5% at the quarter level), compared to histology. Overall diagnostic accuracy was 92% at the lesion level and 95.4% at the quarter level.

**Conclusion:**

This study introduces an innovative and efficient imaging-based workflow for BCC management, enabling comprehensive margin assessment and intraoperative decision-making in a single visit. The method is easy to implement and well accepted by patients. Further multicenter trials are warranted to validate its potential as a new standard of care, potentially lowering both psychological stress and healthcare costs associated with conventional treatments.

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**Abstract N°: 7703**

**Artificial Intelligence in Dermatology: Trends, Challenges, and the AI Integration Ladder Framework**

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**Introduction & Objectives:** In Dermatology, Artificial Intelligence (AI) has become a transformative force, improving diagnostic accuracy and optimizing workflows and patient care. There is a lack of cohesive framework for understanding the integration of stages of AI into dermatological practice despite the growing amount of research. This narrative review aims to synthesize literature from 2019 to 2024, and identify trends and moral dilemmas and introduce the novel "AI Integration Ladder in Dermatology" - a conceptual framework that will guide researchers, clinicians and policymakers to advance and promote the use of AI.

**Materials & Methods:** 28 peer-reviewed studies from 2019 - 2024 were analysed in this review focusing specific AI techniques in clinical dermatology, efficacy in diagnosis and applicability in daily practice. Review articles, systematic reviews, commentaries, observational studies and consensus guidelines were included. Studies without clinical relevance of peer review were excluded. AI modalities, application domains and ethical or regulatory considerations were highlighted through thematic categorization.

**Results:** The key thematic areas included - skin cancer detection (n=5), cosmetic dermatology (n=3), ethical and regulatory concerns (n=6), mobile applications (n=1), multimodal data integration (n=2), reporting standards (n=2), and dermatologic tools for skin of color (n=1).

In 60% of studies, the primary methodology was Image-based AI utilizing dermoscopy. According to several reports, AI systems were able to diagnose derma issues as accurately as actual dermatologists. This was seen particularly in the cases of melanoma and non-melanoma skin cancer classification. In cosmetic applications, tools like facial mapping and personalized treatment planning were implied. Furthermore, algorithmic transparency, consent, racial bias and data privacy are the ethical issues that have been emphasized in training data.

Hence, we propose the 'AI Integration Ladder in Dermatology'- a 5-step framework that analyses both current and future stages of AI adoption:

\1. Exploration by research and pilot models

\2. Validation through clinical benchmarking, both external and internal

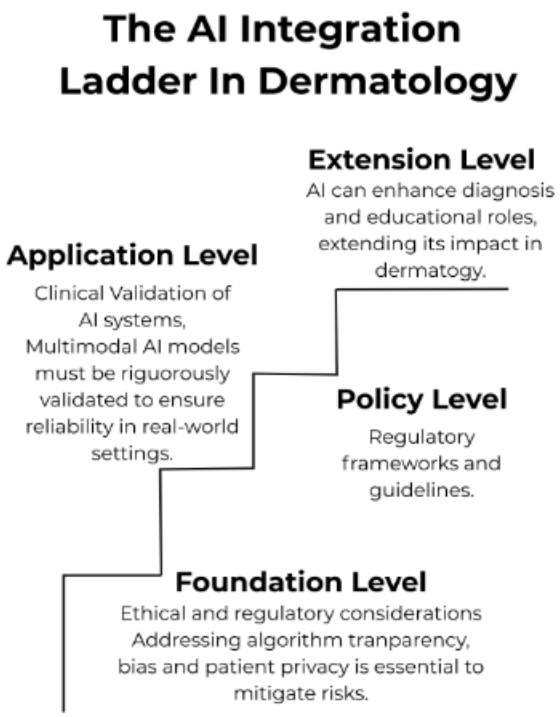
\3. Translation- limited clinical deployment and usability tests

\4. Standardization through integration into guidelines and workflows

\5. Autonomy & Governance through regulation, patient-facing tools and post-market surveillance.

**Conclusion:** Through necessary integration that can overcome validation barriers, data disparities and regulatory ambiguities, Dermatological innovations are promising using AI. These challenges are handled by the AI

integration ladder Framework. Dermatology can achieve clinically validated, ethically sound and easily accessible AI solutions through transparent algorithms, cooperative policy making and by prioritising representative datasets.




**Abstract N°: 7735**

# Long term observations of a German cohort of individuals affected by Atopic Dermatitis: opportunities using the handheld IoT device Skinly

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**Introduction & Objectives:**

The advancement of machine learning and other artificial intelligence technologies has enabled the development of at-home skin analysis devices, revolutionizing skin diagnostics. One of these novel tools is the Skinly device, designed for the non-invasive assessment of multiple skin parameters, allowing users to assess their skin condition in real time. The system integrates advanced imaging technology with machine learning algorithms to provide comprehensive insights into various skin characteristics, including assigned facial skin age, skin evenness, skin tone, redness, porphyrin fluorescence, and hydration levels.

The tracking of self-reported Atopic Dermatitis (AD) patients within the German Skinly collective aims to understand the long-term progression of the skin condition and possibly identify patterns in a real-world setting. Additionally, the monitoring of a dermocosmetic intervention was conducted to evaluate the benefits on the skin conditions among affected individuals.

**Materials & Methods:**

The Skinly device was utilized to collect data from more than 5000 individuals in Germany aged 18 to 75 years, predominantly female, who self-report their skin conditions. Data for self-assessment of the skin status, biophysical measurements of the skin as well as geospatial information are collected over time. Additionally, an observational study of a dermocosmetic intervention was conducted from January to March 2025. Participants were instructed to use a formulation twice daily over 8 weeks. The study employed a combination of self-reported questionnaires and objective measurements obtained from the Skinly device to evaluate skin parameters during the usage phase of the product.

**Results:**

Since 2023, 4.5% of German Skinly users reported to have Atopic Dermatitis and tracked their status. In 2024, ~25% of these users reported moderate to very severe severity on average. For 124 German users, it was possible to track the general skin status for at least 12 months. This monitoring of the skin status shows a large variance from individuals whose self-reported symptoms are temporarily completely gone and then very severe again to participants who report severe AD and itching throughout the whole year.

127 Skinly users with self-reported AD took part in the dermocosmetic intervention. Participants using a moisturizing skincare product with anti-inflammatory actives report enhanced skin comfort and reduced symptoms associated with atopic dermatitis, indicating the effectiveness of a dermocosmetic intervention.

**Conclusion:**

The Skinly device represents a useful tool for documenting skin concerns, including atopic dermatitis, in a home-based setting. Collected data give us valuable insights into the subjective assessment of the skin condition and the skin physiology measurements in relation to monitored environmental conditions and self-reported lifestyle

factors over an extended period of time. Incorporating tools like Skinly in Clinical trials has the potential of providing deeper insights into the occurrence and management of atopic dermatitis.


**Abstract N°: 7854**

**Ultraviolet-Induced Dermoscopy in the Evaluation of Vulvar Lichen Sclerosus: A Novel Diagnostic Aid. A Preliminary Sudy.**

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**Introduction & Objectives:** Vulvar lichen sclerosus (VLS) is a chronic inflammatory dermatosis with distinct clinical and histopathological features. While conventional dermoscopy aids in diagnosis, the application of ultraviolet-induced fluorescence dermoscopy (UVFD) in VLS remains underexplored. Our aim is to assess the utility of UVFD in detecting characteristic features of VLS and to compare these findings with other vulvar dermatoses.

**Materials & Methods:** Thirty-two female patients (aged 28–78) with clinically and histopathologically confirmed VLS were examined using UVFD (Dermlite DL5) at the Department of Dermatology, Poznan University of Medical Sciences. High-resolution images were analyzed. Controls included patients with vulvar lichen planus, lichen simplex chronicus, morphea, and vitiligo.

**Results:** UVFD revealed prominent porcelain-white, irregular fluorescence corresponding to sclerotic zones and epidermal atrophy—features less distinguishable under conventional dermoscopy. UV illumination enhanced contrast, improving visualization of subclinical lesions and subtle surface changes.

**Conclusion:** UVFD enhances detection of diagnostic features in VLS, particularly porcelain-white areas, and may serve as a valuable non-invasive adjunct for diagnosis and monitoring in sensitive anatomical regions.


**Abstract N°: 7904**

**Smartphone-Based Store-and-Forward Teledermatology Versus Face-to-Face Consultations Diagnostic Outcomes**

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**Introduction & Objectives:**

Patient-initiated asynchronous store-and-forward (SAF) teledermatology (TD) improves the accessibility to dermatological consultation [Kim G.E. et al. 2020]. Increasing numbers of patients can use smart mobile devices to create high quality medications and send the data for consultation [Jiang S.W. et al. 2022]. Previous data show a significantly higher efficiency of face-to-face consultation compared to digital evaluation of patient-submitted images [Bastola M. et al. 2021]. Recent data show that images can be assessed with similar accuracy depending on the pigmentation of the lesion, but more data are needed to assess accuracy. We present a study evaluating the diagnostic accuracy of SAF smartphone-based TD (STD).

**Materials & Methods:**

A single-center, retrospective study was conducted from February 1, 2022, to September 30, 2024. A mobile application was developed on the Patients' Portal of the Hospital of Lithuanian University of Health Sciences Kaunas Clinics, through which patients could submit their personal data and an image of their skin rash taken using mobile technology [Liutkus J. et al. 2023]. Images were evaluated by two dermatologists, and the final diagnosis was established during a face-to-face (FTF) consultation. The study included 34 men and 49 women (n = 83) who used the STD service. Patients were divided into two groups based on the presence of pigmented or non-pigmented lesions. Sensitivity and specificity were assessed using the McNemar test, agreement of diagnosis was evaluated using the Kappa test.

**Results:**

Diagnostic agreement between FTF and STD diagnoses of pigmented lesions (PL) was very high. For the experienced dermatologist, diagnostic agreement of PL was 78%, with a sensitivity of 75% (95% CI: 55–88%) and a specificity of 98% (95% CI: 91–99%). Beginner dermatologists showed a slightly lower concordance of 76 %, with a sensitivity of 79% (95% CI: 59–90%) and a specificity of 95% (95% CI: 86–98%). The STD diagnosis of PL made by the experienced dermatologist was more accurate compared to beginner dermatologist.

Despite the lower diagnostic agreement between FTF and STD diagnosis for non-pigmented lesions (NPL) compared to PL, the level of agreement remained high. For the experienced dermatologist, diagnostic agreement of NPL was 69 %, with a sensitivity of 94% (95% CI: 74–99%) and a specificity of 86% (95% CI: 76–92%). The beginner dermatologist achieved a concordance of 70%, with a sensitivity of 84% (95% CI: 62–94%) and a specificity of 90% (95% CI: 81–95%).

**Conclusion:**

STD images can be assessed with similar diagnostic agreement to FTF depending on the pigmentation of the lesion. Pigmented lesions are evaluated more accurately than non-pigmented lesions, but more data are needed to assess the accuracy. STD diagnosis of pigmented lesions by an experienced dermatologist is more accurate compared to a beginner dermatologist.


**Abstract N°: 7918**

**Objective Skin Typing Across the Spectrum: AI-Driven Fitzpatrick Classification from Facial Imagery**

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**Introduction & Objectives:**

Accurate skin type classification is essential in dermatology and cosmetology, as skin tone plays a critical role in diagnostics, treatment, and product development. However, traditional Fitzpatrick assessment is often subjective and inconsistent, especially across diverse populations.

This study presents an automated pipeline for Fitzpatrick skin type estimation from facial images. By combining deep facial segmentation with advanced color analysis techniques, this approach aims to enhance objectivity and inclusivity, supporting improvements in clinical diagnostics and personalized skincare.

**Materials & Methods:**

This study used facial images from the Scarletred database, representing a diverse range of ethnicities and Fitzpatrick skin types. Images were acquired using Scarletred®Vision, a clinically validated and approved Software as a Medical Device (SaMD) platform operating via a smartphone app. Combined with a calibration skin patch, this setup ensures standardized lighting and color calibration, enabling consistent and accurate facial image analysis.

In the first step facial landmarks detection was used in combination with multi-class face segmentation to extract skin, hair and iris regions. Additionally, eyebrow regions were extracted as a control for hair color estimation.Color features were extracted using the CIE-LAB color space for hair, eyes, and eyebrows, while the Individual Typology Angle (ITA) map was used to estimate skin tone. To mitigate the effects of temporary erythema and oversaturation in lighter Fitzpatrick types (I–III), an additional correction was applied, improving skin color estimation.

A custom decision tree model was developed for Fitzpatrick classification, incorporating extracted color features and standard reference values, enabling objective and interpretable skin type prediction based on region-specific color patterns.

**Results:**

Using a clinically validated acquisition platform and robust processing pipeline, we achieved reliable classification across all six Fitzpatrick types. The automated pipeline successfully segmented key facial regions and extracted the dominant colors for key regions.

Visual inspection confirmed consistent region detection and effective redness correction.

The custom decision tree produced interpretable and plausible classifications based on skin, hair, and eye color inputs. The method showed robustness to variations in lighting and background, with clear differentiation between adjacent skin types.

**Conclusion:**

This study demonstrates that Fitzpatrick skin type can be automatically estimated from facial images using region-

specific segmentation and advanced color analysis.

The approach offers an objective and scalable method based on smartphone imaging, reducing bias and enhancing remote assessments in skin-related applications. It also contributes to the development of inclusive technologies and promotes equitable performance of AI tools across all skin types, advancing ethical and effective digital health solutions.


**Abstract N°: 7926**

**Misleading double syphilitic positivité :résistant syphilis or paranéoplasique Erythema Elevatum Diutinum ?**

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**Introduction**Infantile hemangioma (IH) belongs to the group of vascular tumors. When located on the face, it may lead to aesthetic or functional complications and can, in certain cases, be part of a syndromic association such as PHACES syndrome.Pretragial localization, particularly when a deep component is present, can lead to parotid or nerve-related complications. We report a case of IH associated with parotitis.

**Case Report**A 4-month-old male infant presented with a firm, elastic, warm, non-pulsatile, ulcerated, and painful swelling in the periauricular region, progressively increasing in size since 15 days of life. The lesion measured 70 mm × 50 mm. Doppler ultrasound revealed a well-defined, subcutaneous, hyperechoic preauricular lesion on the right side, measuring 73 mm in length, with moderate vascularity, as well as a slight enlargement and hyperechoic appearance of the ipsilateral parotid gland.Following ENT consultation, the diagnosis of a mixed-type ulcerated preauricular infantile hemangioma associated with reactive ipsilateral parotitis was established. In addition to local wound care and analgesic treatment (paracetamol at 15 mg/kg/day), the patient was started on oral propranolol at 3 mg/kg/day. Clinical and radiological follow-up showed favorable evolution with regression of both the hemangioma and the glandular inflammation.

**Discussion**Most IHs are localized. Topographically, they are most frequently found on the head (40%) and may present as focal or segmental lesions. Based on their depth, they are classified as superficial, deep, or mixed.The parotid gland, the largest of the major salivary glands, is pyramid-shaped with a medial apex and lateral base. It is molded against the walls of the parotid space—posteriorly by the retrostyloid region, medially by the parapharyngeal space, and anteriorly by the infratemporal fossa.Its superficial anatomical position, particularly along the vertical ramus of the mandible, makes it vulnerable to involvement in pretragial or subauricular IHs, either through direct tumor infiltration or secondary glandular inflammation. The main risks include facial nerve palsy and local, regional, or systemic infectious complications.

**Conclusion**In the presence of a pretragial or subauricular IH, parotid ultrasound is essential to rule out parotid gland involvement or a true parotitis.


**Abstract N°: 8335**

**Non-invasive imaging of the nailfold: unveiling patterns in connective tissue diseases**

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**Introduction & Objectives:**

This study focuses on imaging the nail fold of patients suffering from different connective tissue diseases with non-invasive imaging tools. Nailfold capillaroscopy is scarcely available in the field of dermatology, nail fold dermoscopy is a seemingly good alternative for screening for nailfold capillary pathologies. Distinction of the different connective tissue diseases can be time consuming and in some cases assignment to one entity is difficult. For systemic sclerosis (SS) disease activity can correlate with specific nailfold capillary changes. Dynamic optical-coherence tomography (D-OCT) has already been used for depiction of the nail fold in such patients. Examination of nailfold capillaries with line-field confocal optical coherence tomography (LC-OCT) has not been reported in the literature up to date.

The objective of this study is to investigate the nailfold of patients suffering from connective tissue diseases (SS, lupus erythematosus (LE), overlap-diseases (OD), dermatomyositis (DM)) with non-invasive imaging methods (LC-OCT, D-OCT, dermoscopy) to uncover the different patterns between these diseases.

**Materials & Methods:**

20 patients suffering from connective tissue diseases (SS, LE, OD, DM) are examined with LC-OCT, D-OCT, dermoscopy and clinical photography. Follow-up investigations are scheduled after 3 and 6 months.

**Results:**

The study is still in implementation. First results show, that dilated, elongated, tortuous and bushy capillaries of the nail fold can be depicted by non-invasive imaging techniques.

**Conclusion:**

Non-invasive imaging techniques appear to be a promising tool for diagnosing and following up patients with connective tissue diseases. Signs correlating with activity and disease specific markers could provide valuable information in the future.


**Abstract N°: 8376**

**morbihan disease: a diagnosis not to be overlooked**

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**Introduction & Objectives:**

Morbihan disease (MD), also known as lymphoedematous rosacea, is a rare condition of uncertain etiology. First described by French dermatologist Robert Degos in 1957, it presents clinically as a firm, erythematous, and chronic facial edema. The pathophysiology of MD is not fully understood, posing significant challenges in therapeutic management. This report presents a new case of a woman affected by this condition.

**Materials & Methods:**

A 64-year-old female patient with a medical history of hypertension (under treatment), latent tuberculosis infection treated with chemoprophylaxis, and follow-up for rheumatoid arthritis on methotrexate and corticosteroids, was referred for suspected mixed connective tissue disease: lupus/dermatomyositis. Clinical examination revealed a firm, painless edema associated with erythema on the cheeks, periorbital region, and forehead. The remainder of the examination was unremarkable. The patient reported photosensitivity without other accompanying signs. Dermoscopy showed an erythematous background with telangiectatic and polyhedral vessels suggestive of rosacea. Skin biopsy revealed vacuolar dermatitis with a lymphocytic infiltrate. Biological and immunological tests were normal. In the absence of signs supporting a connective tissue disease and given the clinical appearance of the lesions, the diagnosis of Morbihan disease was retained. Treatment with spironolactone was proposed.

**Results:**

Morbihan disease (MD), also known as solid persistent facial edema, lymphoedematous rosacea, or Morbihan syndrome, is a rare condition characterized by chronic, erythematous, and progressive facial edema. The exact cause of MD remains unknown, but several hypotheses have been suggested: anomalies in lymphatic drainage, presence of chronic inflammation, lymphatic obstruction. Some consider this condition a chronic form of rosacea due to histopathological similarities.

Clinically, MD is characterized by erythematous, firm, and non-compressible edema. MD primarily affects the upper two-thirds of the face, including the forehead, glabella, periorbital region, cheeks, and nose. The edema is asymptomatic, without associated pain or pruritus, but may be accompanied by other manifestations of rosacea (telangiectasias, flushing, papules, pustules), acne, or complications. Biopsy is not mandatory for diagnosis but can help exclude differential diagnoses in cases of doubt.

Therapeutic management presents a real challenge: local treatment may involve intralesional corticosteroid injections, lymphatic drainage, or compression therapy. First-line medical treatment includes isotretinoin; antibiotics such as metronidazole, minocycline, and doxycycline have variable efficacy depending on the case. Ketotifen and systemic corticosteroids may be attempted; diuretics have proven to be an interesting therapeutic option. Destructive treatment through $CO_2$ laser blepharoplasty or radiotherapy allows for the destruction of edematous tissues for complete recovery.

**Conclusion:**

Morbihan disease remains a rare condition of indeterminate nosology, presenting diagnostic and therapeutic challenges, and causing significant functional and aesthetic discomfort.


**Abstract N°: 8572**

# A Systematic Review and Meta-Analysis of Ocular and Periocular Basal Cell Carcinoma with First-Time Description of Dermoscopic and Reflectance Confocal Microscopy Features of Caruncle Basal Cell Carcinoma

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**Introduction & Objectives:**

Basal cell carcinoma (BCC) is the most common malignant skin cancer. In the ocular and periocular region, the growth of this tumour is characterized by a painless progressive extension. An early diagnosis can limit the extent of facial tissue involvement and subsequent resection resulting in better cosmetic and functional results. The aim is to provide the largest and most up-to-date overview of ocular and periocular BCCs. We also reported the first case of caruncle BCC investigated by dermoscopy and reflectance confocal microscopy (RCM).

**Materials & Methods:**

A systematic review and meta-analysis of ocular and periocular BCCs was carried out by searching PUBMED - MEDLINE up to 31 December 2023. We included articles with an English full-text and with BCCs in eyelids, medial and lateral canthus, caruncle, conjunctiva, and orbit. The following data were collected: authors, year, and title and type of publication, medical specialization, number, sex, age and comorbidities of the patients, anatomic localization of the disease, clinical and dermoscopical aspect, histological examination, and treatment.

**Results:**

We identified 731 articles to database search of which 236 articles matched our inclusion criteria. A total of 71.730 patients with ocular and periocular BCCs were included in the present study and all data collected were reported in a dataset. Most of the articles included were described by ophthalmologists (67.5%), dermatologists (11.2%) or plastic surgeons (5.6%). The proportional meta-analysis revealed different significativity and heterogeneity for each type of study included.

**Conclusion:**

BCC more frequently affected the lower eyelid. The most common BCC subtype of ocular and periocular area is the nodular form. Limited data are available concerning the application of dermoscopic and RCM in this area. RCM may be particularly useful for early diagnosis, mapping and treatment monitoring of ocular and periocular BCCs. Surgery still remains the first-choice treatment.

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**Abstract N°: 8630**

## Characterization of Basal Cell Carcinoma with Reflectance Confocal Microscopy in Different Anatomical Location

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**Introduction & Objectives:**

Basal cell carcinoma (BCC) is the most common keratinocyte tumor in the Caucasian population. The diagnosis of BCC can be difficult and confocal laser microscopy (RCM) is often used as an additional diagnostic procedure to dermoscopy. In our retrospective study, we evaluated the RCM characteristics of BCCs collected between 2020 and 2024 to delineate their features according to anatomical site. We also evaluated the same RCM features in relation to the clinical type of BCCs and the area of risk of recurrence (H,M and L areas of the body).

**Materials & Methods:**

All lesions with RCM diagnosis other than BCC, previously treated BCCs, and recurrences of BCCs were excluded. A total of 305 cases were selected, of which we evaluated clinical, dermatoscopic imaging and RCM characteristics (inflammatory infiltrate, mild keratinocyte atypia, streaming, cord-like structures, lobular nests, tumor islands, dark silhouettes, peritumoral clefting, adnexa involvement, collagen localized around nests, peripheral palisade, epidermal tumor localization, dermal tumor localization, vascular morphology, fibrosis and solar elastosis). BCCs were divided into face, trunk, upper and lower limbs. Features with $p<0.005$ were considered statistically significant.

**Results:**

Facial BCCs were mainly nodular, with a dermal localization, and in RCM, adnexa involvement was more frequently evident than the other sites. On the trunk, they had an epidermal localization, more solar elastosis and fibrosis than in the face, and cord-like structures and lobular nests were also more represented than in the limbs. BCCs of the limbs showed epidermal localization. Solar elastosis and fibrosis predominated in the upper limbs, while keratinocyte atypia and fibrosis predominated in the lower limbs. In relation to clinical type, it was found that in the superficial forms, tumor island and fibrosis are more common. In the areas at high risk of recurrence (H) collagen around the nests is more represented while fibrosis is less .

**Conclusion:**

Recognition of these specific RCM criteria allows to reach an early diagnosis of the BCC, improving therapeutic management of the patient.


**Abstract N°: 8697**

# Therapeutic Efficacy Evaluation of Imiquimod 5% Cream in Patients with Superficial Basal Cell Carcinomas by Line-Field Confocal Optical Coherence Tomography combined with Artificial Intelligence

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**Introduction & Objectives:**

Basal Cell Carcinoma represent around 80% of all keratinocytic cancers, and is the most common malignant skin cancer. Treatment options vary based on these characteristics and range from surgery, physical agents (eg. cryotherapy, laser), topical creams, radiotherapy, and chemotherapy. A 5% solution of Imiquimod is a topical treatment administered five nights a week for a total of six weeks; it is reserved for superficial BCCs in low-risk areas. Line-Field Confocal Optical Coherence Tomography (LC-OCT) is a relatively novel imaging technique which gathers real-time vertical or horizontal images of the epidermis on a cellular level, while contemporarily allowing the user a dermoscopic view of the scanned site. The aim of this study was to assess the therapeutic efficacy of Imiquimod 5% on superficial BCCs clinically, dermoscopically, and instrumentally via LC-OCT.

**Materials & Methods:**

Thirty-seven superficial basal cell carcinomas were identified in 23 patients. Clinical and dermoscopic images were assessed by experienced board-certified dermatologists. LC-OCT readings were analyzed by expert non-invasive diagnosticians as well as a built-in Artificial Intelligence (AI) software to evaluate signs of BCC persistence.

Clinical, dermoscopic images and instrumental readings were acquired for each BCC at T0, eight weeks after treatment (T1) and twelve weeks after treatment (T2) with Imiquimod 5%. Each reading was classified as either Complete Response (CR), Partial Response (PR), Persistence of Disease (PD).

**Results:**

The clinical and dermoscopic contribution was especially valuable in T2 analyses of BCCs after post-treatment inflammation had mostly subsided while LC-OCT readings provided insight into therapeutic response to topical treatment in T1. The AI software was especially useful in identified residual tumor in borderline cases. Deeper rooted and fibrotic BCCs, retrospectively identified at T0 via LC-OCT, were found to have a greater resistance to Imiquimod treatment and may perhaps benefit more from surgical excision.

**Conclusion:**

These results suggest that LC-OCT may play an important role both in diagnostic and therapeutic choices for superficial BCCs.

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**Abstract N°: 8929**

# Increasing Skin of Colour Representation in Undergraduate Dermatology Education: A 6-Year Single-Centre Longitudinal Study

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**Introduction & Objectives:**

The underrepresentation of skin of colour (SOC) dermatology in Canadian undergraduate medical curricula is well-documented and contributes to disparities in patient care. However, the impact of increasing SOC representation on learner outcomes remains largely unexplored in Canada. This single-center longitudinal study investigates how enhancing SOC representation in an undergraduate dermatology curriculum influences learner confidence, diagnostic accuracy, and attitudes, to guide future curricular reform.

**Materials & Methods:**

We performed an audit of the University of Toronto's undergraduate dermatology curriculum, assessing SOC representation from 2019 to 2025. Two independent reviewers categorized images as light skin (LS, Fitzpatrick I-III) or SOC (Fitzpatrick IV-VI), with discrepancies resolved by a third reviewer. Non-pathologic and duplicate images were excluded. First-year students completed surveys in 2019 and 2025 after a one-week dermatology block, evaluating diagnostic accuracy and confidence in diagnosing five common conditions depicted in LS and SOC. Confidence was rated on a 5-point Likert scale, and one point was awarded for each correct diagnosis. Chi-square and Fisher's exact tests assessed significance.

**Results:**

The proportion of SOC images increased from 3.7% (19/513) in 2019 to 26.4% (221/836) in 2025 ($p<0.0001$). In 2019, diagnostic accuracy for LS and SOC was similar for most conditions ($p>0.05$). However, confidence in diagnosing SOC conditions was lower overall ($p=0.0002$). By 2025, SOC diagnostic accuracy improved overall from 84.0% to 93.5% (OR 0.36 [95% CI:0.26–0.51], $p<0.0001$). Lupus showed the greatest improvement, from 50.5% to 79.7% (0.26 [0.15–0.44], $p<0.0001$). Confidence in diagnosing SOC conditions also improved overall from 57.0% to 76.8% (0.40 [0.32-0.51], $p<0.0001$). Molluscum contagiosum showed the greatest increase, from 60.4% to 92.4% (0.13 [0.065-0.24], $p<0.0001$). Yet, confidence in diagnosing lupus in SOC remained lower than LS, at 38.6% vs. 54.8% respectively ($p=0.001$).

In 2019, 51.5% (52/101) of students felt SOC was adequately represented in the curriculum, compared to 91.4% (180/197) in 2025 ($p<0.0001$). After the curriculum update, 85.7% (169/197) felt comfortable diagnosing conditions across diverse skin tones, 91.4% (180/197) reported that enhanced SOC representation increased their interest in dermatology, and 94.4% (186/197) believed SOC content sparked meaningful discussions on disparities in care. Most students endorsed near-equal representation of LS and SOC (70.1%; 138/197), modules addressing differences in presentation, management, and outcomes in SOC (69.5%; 137/197), and the integration of SOC content throughout the curriculum (69.5%; 137/197).

**Conclusion:**

Our findings demonstrate that increasing SOC representation in an undergraduate dermatology curriculum significantly improves learners' diagnostic accuracy and confidence in managing dermatological conditions in SOC, and overall satisfaction with the curriculum. This is the first study to longitudinally evaluate the impact of increased SOC representation in an undergraduate dermatology curriculum, offering critical insights for curricular reform. Our findings emphasize the need for medical schools to diversify their teaching materials to promote more comprehensive medical education and equitable dermatologic care.