

AEDV 2023 Highlights

Con el patrocinio de:



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Iniciativa científica de:



ACADEMIA ESPAÑOLA
DE DERMATOLOGÍA
Y VENEREOLOGÍA



AEDV2023
Highlights

Diagnóstico por imagen en dermatología y dermatoscopia

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- **Elvira Moscarella: Identification of high risk patients and digital monitoring**
 - Consenso Delphi de expertos de la IDS

Table 2. List of indications for digital monitoring in patient with multiple nevi.

Indications for digital monitoring in patients with multiple nevi.
I. Patients with more than 60 melanocytic nevi.
II. Patients with a CDKN2A mutation or other rarer high-risk melanoma genetic variants.
III. Patients with more than 40 melanocytic nevi and a personal history of melanoma.
IV. Patients with more than 40 melanocytic nevi and red hair and/or a MC1R mutation
V. Patients with more than 40 melanocytic nevi and a history of organ transplantation.



Dermatology Practical & Conceptual

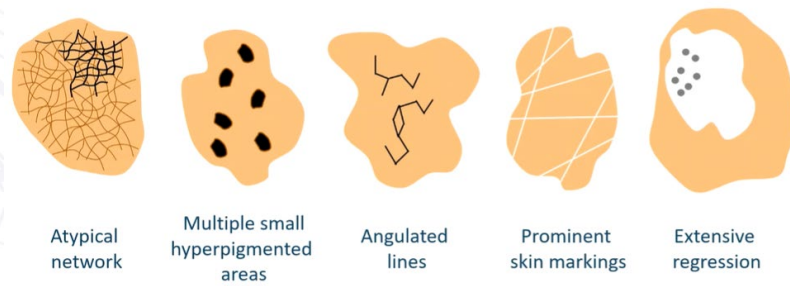
Indications for Digital Monitoring of Patients With Multiple Nevi: Recommendations from the International Dermoscopy Society

Teresa Russo¹, Vincenzo Piccolo¹, Elvira Moscarella¹, Philipp Tschandl², Harald Kittler², John Paoli³, Aimilios Lallas⁴, Ralph P. Braun⁵, Luc Thomas⁶, H. Peter Soyer⁷, Josep Malvehy⁸, Susana Puig⁸, Ashfaq Marghoob⁹, Alon Scope¹⁰, Andreas Blum¹¹, Allan C. Halpern⁹, Horacio Cabo¹², Scott Menzies¹³, Wilhelm Stolz¹⁴, Masaru Tanaka¹⁵, Harold Rabinovitz¹⁶, Rainer Hofmann-Wellenhof¹⁷, Renato Marchiori Bakos¹⁸, Iris Zalaudek¹⁹, Giovanni Pellacani²⁰, Ana Varela Veiga²¹, Laura Rosende Maceiras²¹, Cristina de las Heras-Sotos²¹, Giuseppe Argenziano¹

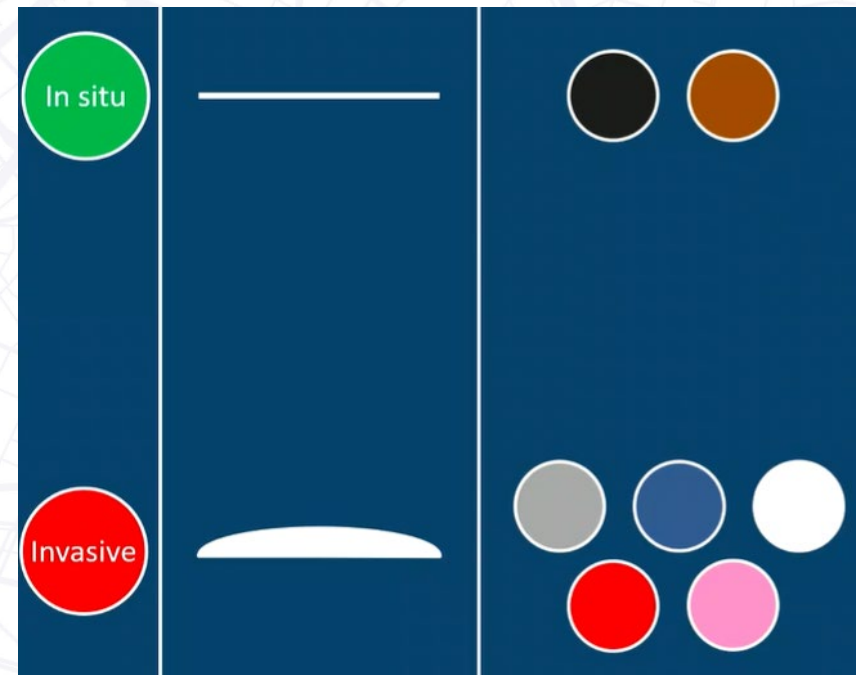
- John Paoli: **How dermoscopy can improve surgical management of melanoma**

- Plantear una única extirpación con 0.5 mm de margen quirúrgico si ALTA sospecha de MM *in situ* (no LM)
- Sin repercusión en una potencial BSGC posterior
- Actualmente fuera de guías clínicas

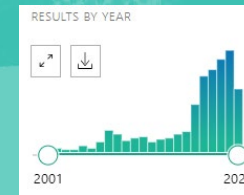
Predictors for melanoma in situ



Predictors for invasive melanoma



Dermatoscopia



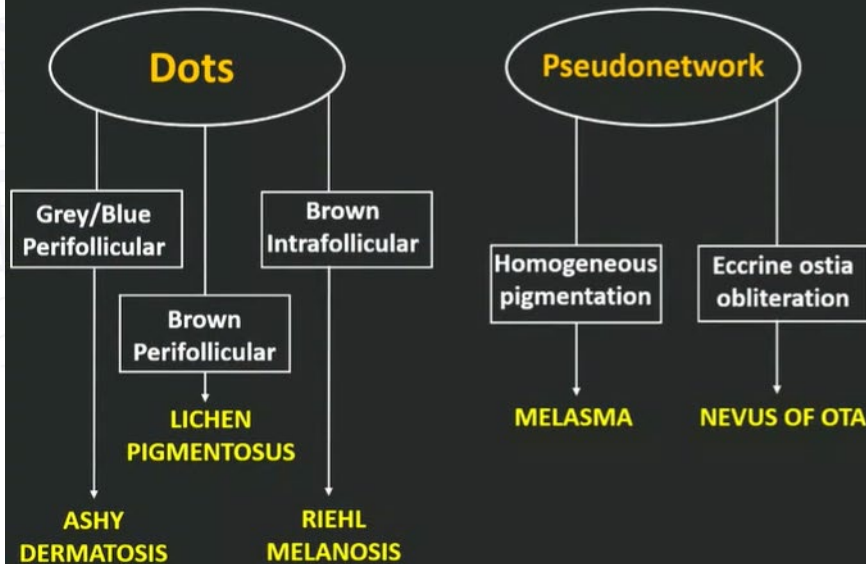
- Enzo Errichetti: **Update on dermoscopy on skin of color**
 - Dificultades diagnósticas en patología inflamatoria y también tumoral
 - Peculiaridades: fondo oscuro, labilidad del pigmento, aumento de reacciones foliculares y escleróticas

Observational Study > Eur J Dermatol. 2020 Dec 1;30(6):688-698. doi: 10.1684/ejd.2020.3928.

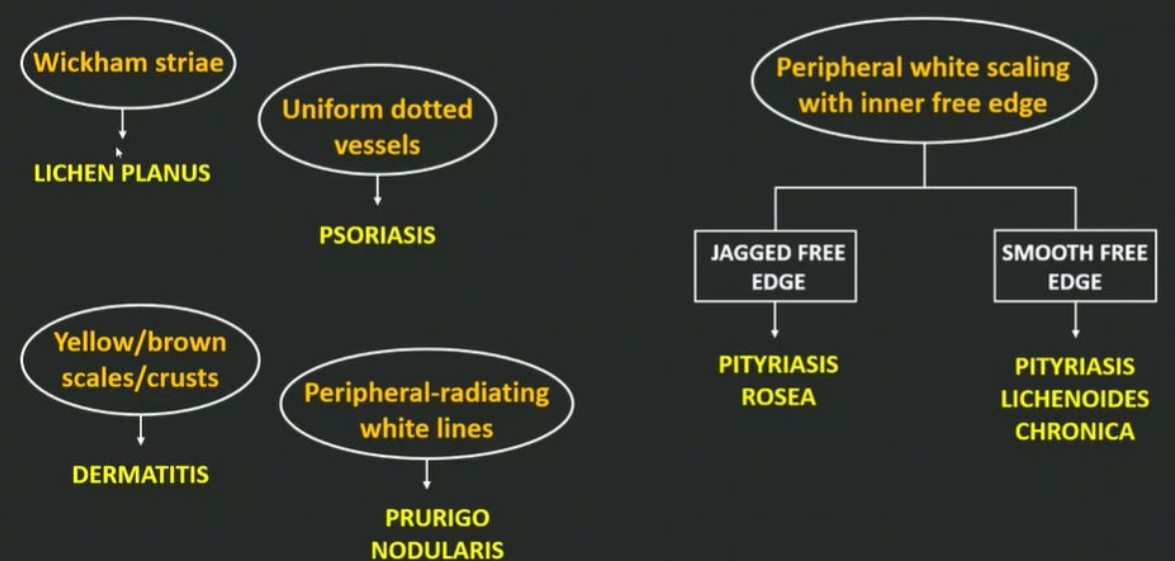
Dermoscopy in general dermatology (non-neoplastic dermatoses) of skin of colour: a comparative retrospective study by the International Dermoscopy Society

Enzo Errichetti ¹, Balachandra Suryakant Ankad ², Sidharth Sonthalia ³, Abhijeet Kumar Jha ⁴, Vinay Keshavamurthy ⁵, Athanassios Kyrgidis ⁶, Shekhar Neema ⁷, Manas Chatterjee ⁸, Feroze Kaliyadan ⁹, Sunil Dogra ⁵, Soumil Khare ¹⁰, Awatef Kelati ¹¹, Bengu Nisa Akay ¹², Horacio Cabo ¹³, Yasmeen Jabeen Bhat ¹⁴, Manal Bossella ¹⁵, Atula Gupta ¹⁶, Pragya Nair ¹⁷, Sakshi Gaikwad ², Puravoor Jayasree ¹⁸, Emilia Noemi Cohen Sabban ¹³, Giuseppe Stinco ¹, Zoe Apalla ¹⁹, Iris Zalaudek ²⁰, Aimilios Lallas ²¹

Facial pigmentary dermatoses – Dermoscopic flowchart

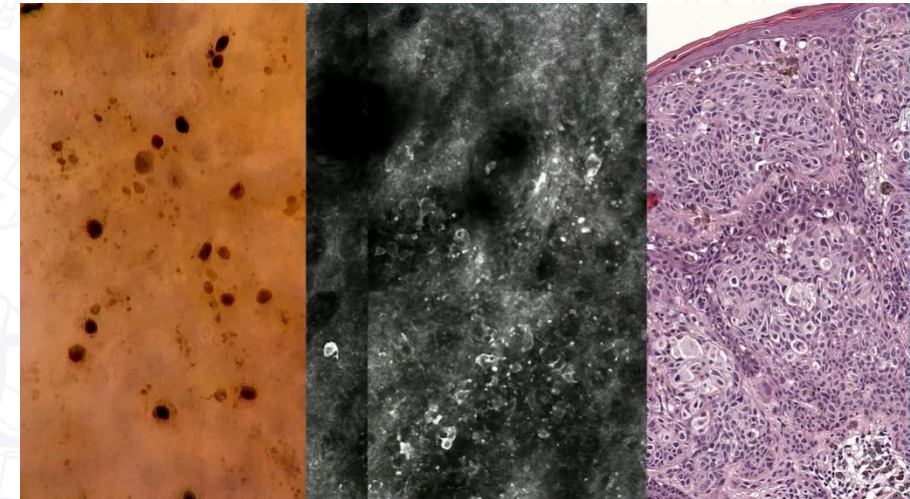


Papulosquamous dermatoses – Dermoscopic flowchart





- Stefania Guida: **Super-high magnification dermoscopy**
 - “Confoscopy”
 - Magnificación x400: resolución celular
 - Usos en cáncer cutáneo y en parasitosis (escabiosis)
 - Aplicaciones estéticas (profundidad pigmento en melasma)



Parameters

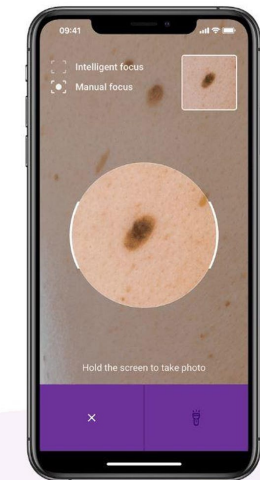
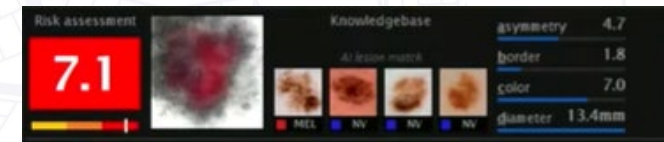
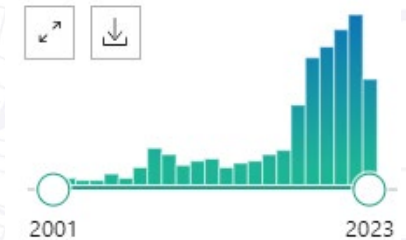
Cells	Colors	Vessels
Cell type	Colour of dots	
Keratinocytes ^a	Brown	
Roundish melanocytes ^a	Violet/blue	
Dendritic melanocytes ^a	Black	
Melanophages ^a	Roundish nests	
Cell shape	Colour of roundish nests	
Polygonal	Brown	
Roundish	Violet/blue	
Dendritic	Black	
Cells larger than keratinocytes	Colour of out-of-focus structureless areas	
Cell irregularity in shape and size	Blue	
Cell colour	Grey/brown	
Brown	Vessels	
Violet/blue	Vessel shape	
Black	Linear	
Cell in focus	Glomerular	
Cell out of focus	Arborizing	
Cell distribution	Irregular	
Scattered	Dilated inside dermal papillae	
In nests or inside the network or around dermal papillae	Hyperkeratotic roundish concentric structures	
Dots	Network with edged papillae	
	Network without edged papillae	



Cinotti E, Tognetti L, Campoli M, Liso F, Cicigoi A, Cartocci A, Rossi R, Rubegni P, Perrot JL. Super-high magnification dermoscopy can aid the differential diagnosis between melanoma and atypical naevi. Clin Exp Dermatol. 2021 Oct;46(7):1216-1222.

- Konstantinos Liopyris: **State of the art of artificial intelligence**
- Josep Malvehy: **Applications of AI in Dermatology**
- Javier Perez-Anker: **New tools for self-examination**
 - Límites de la técnica (lesiones faciales, saturación, vello, rotulador...)
 - Puede mejorar nuestra sensibilidad y especificidad, pero cometen errores
 - Papel de médicos: ¿Cómo actuar ante discordancia diagnóstica?
 - ¿Fiabilidad de apps para el diagnóstico?
 - Baja en condiciones de vida real
 - Riesgo de sesgo selección (el paciente consulta por otros motivos)
 - El autoexamen es útil pero entraña riesgos: NO sustituye la consulta medica

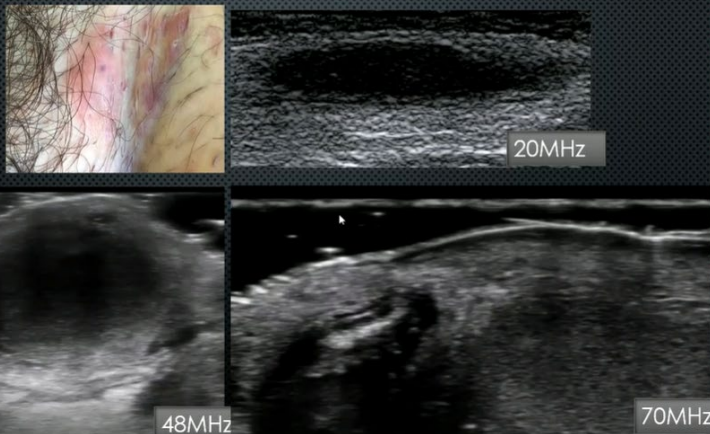
RESULTS BY YEAR



- Marco Romanelli: **Ultra-high-frequency ultrasound in hidradenitis and wound management**
 - Frecuencia 70 MHz
 - Diagnóstico precoz y evaluación al inicio
 - Toma de decisiones terapéuticas (infiltración esteroides y otras)
 - Monitorización de tratamiento
 - Mapping preQx y preláser

UHFUS and HS : High resolution

Groin:
Abscess



UHFUS and HS : Higher resolution

TOMBSTONE



UHFUS in HS: *Clinical and Sub Clinical lesions*



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² Statistical Support to Clinical Trials Department, University of Pisa, Pisa, Italy

INTRODUCTION

Psoriatic onychopathy is one of the clinical presentations of psoriasis and a well-known risk factor for the development of psoriatic arthritis. High-Frequency Ultrasound (HFUS >20 MHz) has recently been used to evaluate the nail apparatus of healthy and psoriatic subjects ^{1,2}. The aim of our study was to detect by means of Ultra-High Frequency Ultrasound (UHFUS 70-100 MHz) alterations of the nail bed and matrix in patients with psoriatic onychopathy and to monitor these parameters during the treatment with monoclonal antibody (mAb).

METHODS

We enrolled 10 patients with psoriatic onychopathy and naive to previous biologic therapies. Patients were evaluated at baseline, after 1 month, after 3 months, and after 6 months from the beginning of mAb therapy by a complete clinical assessment and US evaluation.

UHFUS examination with a 70 MHz probe was performed on the thumbnail (I), the index fingernail (II) and the nail with greater clinical impairment (W). The following measurements were analyzed: nail plate thickness (A), nail bed thickness (B), nail insertion length (C), nail matrix length (D) and nail matrix thickness (E) (**Figure 1**).

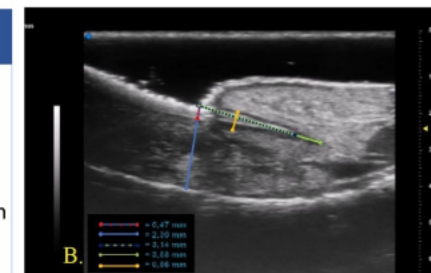
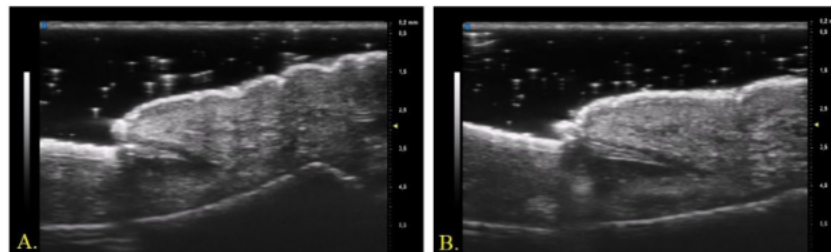


Figure.1



RESULTS

Among the various parameters analyzed, some US measures showed statistically significant decrease, even before the clinical improvement was detectable, with p-value <0.05 (t0 WA=0.52 mm vs. t2 WA=0.42 mm; t0 WB=2.8 mm vs. t2WB=2.4 mm; t0 WE=0.76 mm vs. t2 WE=0.64 mm; t0 IIA=0.49 mm vs. t2 IIA=0.39 mm) (**Figure 2**).

Figure 2. UHFUS (70 MHz) examination of nail apparatus, evaluated at baseline (A) and after 6 months of Ixekizumab (B)

CONCLUSIONS

In conclusion, UHFUS could represent a viable imaging technique for the real time evaluation and monitoring of psoriatic onychopathy, thus supporting the clinical parameters and revealing any subclinical sign of early drug response.

REFERENCES

1. Wortsman, X.; Gutierrez, M.; Saavedra, T.; Honeyman, J. The role of ultrasound in rheumatic skin and nail lesions: A multispecialist approach. Clin. Rheumatol. 2011, 30, 739–748
2. Krajewska-Włodarczyk M, Owczarczyk-Saczonek A. Usefulness of Ultrasound Examination in the Assessment of the Nail Apparatus in Psoriasis. Int J Environ Res Public Health. 2022 ;19(9):5611.



NEW HORIZONS IN DIAGNOSIS AND MANAGEMENT OF MELANOMA: THE ROLE OF ULTRA-HIGH FREQUENCY ULTRASOUND

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Introduction

Early malignant melanoma (MM) detection is crucial to improve prognosis and survival rates of the patients. The use of ultra-high frequency ultrasound (UHFUS) system can be crucial for the assessment of MM^{1,2}.

Materials and methods

Ultrasonographic images of MMs were acquired using the 70 MHz probe of Vevo[®]MD (Fujifilm, Visualsonics, Toronto, Canada), a peculiar UHFUS with a resolution of 30 μ m.

The ultrasonographic features were recorded and the maximum depth of the lesions was measured and compared with the histopathological thickness after the surgical removal.



Results:

With UHFUS is possible to evaluate the shape and to identify the margins of MMs. MMs appear as hypochoic fusiform or oval shaped inhomogeneous areas at the ultrasonographic examination, with a variable degree of vascularization³ (Fig.1). We reported an excellent agreement between the ultrasonographic thickness of the MMs and the Breslow thickness³.

Conclusion:

UHFUS can be helpful to reduce the diagnostic delay and perform a complete surgical excision of MM considering the ultrasonographic margins. This approach helps also in evaluating the presence of any satellite or in transit metastases. Moreover, in the case of suspected atypical melanocytic nevus, an ultrasonographic depth ≥ 0.8 mm indicates a high priority for elective surgery. The dermatologist can also identify with UHFUS the point of maximum depth and guide the pathologist, reducing the variability in the analysis of the histopathological Breslow thickness (Fig.2)³. UHFUS can be considered a non-invasive tool that provides essential information in the pre-operative evaluation of melanocytic lesions.

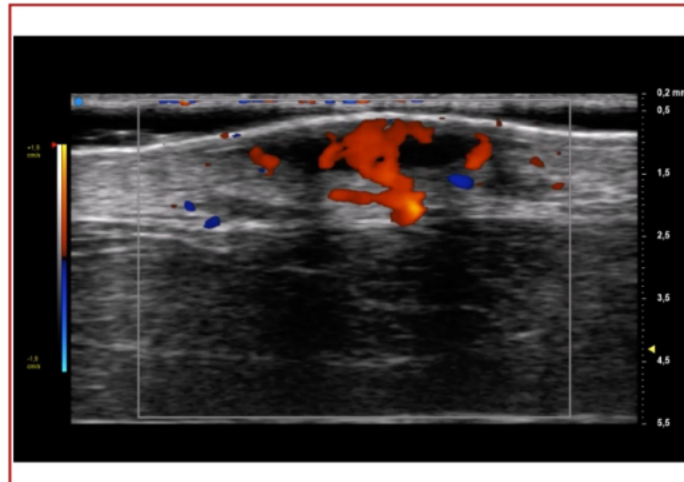


Figure 1: UHFUS shows intralesional and sublesional hypervascularity (1.9 cm/sec) of a fusiform melanoma.

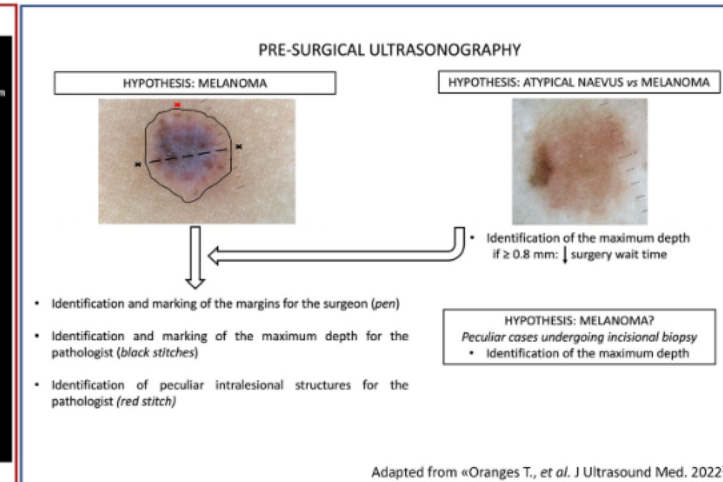


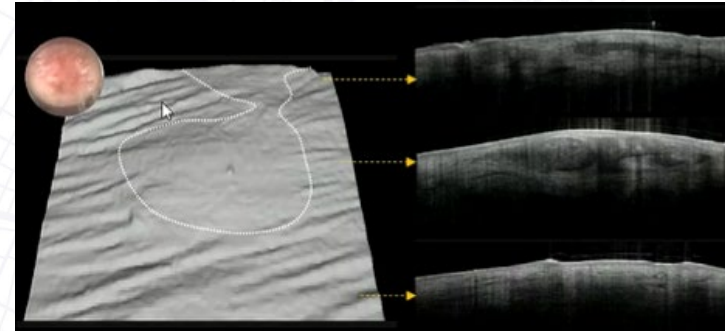
Figure 2: A proposal of an ultrasonographic-histopathological approach for cutaneous melanoma.

References

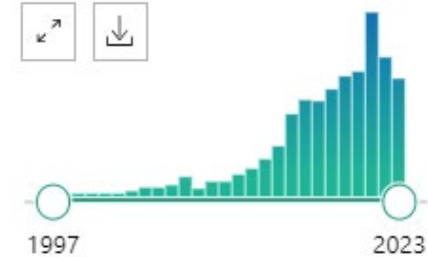
¹Reginelli A, Belfiore MP, et al. A preliminary study for quantitative assessment with HFUS (High Frequency ultrasound) of nodular skin melanoma Breslow thickness in adults before surgery: Interdisciplinary team experience. *Curr Radiopharm* 2020, 13:48-55; ²Fatta F, Oranges T., et al. Ultra-high-frequency ultrasound and machine learning approaches for the differential diagnosis of melanocytic lesions. *Exp Dermatol*. 2022, 31:94-98; ³Oranges T, Janowska A., et al. Ultra-High frequency ultrasound in melanoma management: a new combined ultrasonographic-histopathological approach. *J Ultrasound Med*. 2022, 42:99-108.

- Olivier Gaide: **Optical coherence tomography**

- 3 características:
 - PROFUNDIDAD
 - No requiere contacto (*smooth sign* en CBC)
 - Patrones vasculares (OCT dinámica)



RESULTS BY YEAR

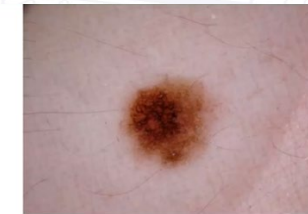


- Giovanni Pellacani: **In-vivo and exvivo confocal microscopy**

- Para definir diagnóstico
 - Similar sensibilidad a dermatoscopia, pero más específica (ahorra 47.2% extirpaciones)
- Para estudio intraoperatorio (biopsia virtual)
 - Exvivo no altera estudio histopatológico posterior



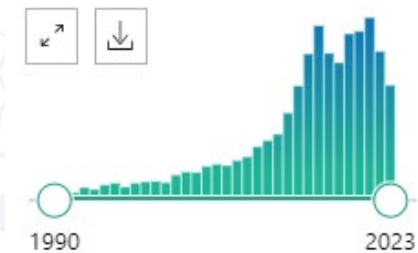
Melanoma



nevus



RESULTS BY YEAR



Evaluation of diagnostic accuracy with reflectance confocal microscopy in novice observers

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1. Department of Dermatology Hospital Universitario 12 de Octubre. 2. Department of Dermatology, Hospital Universitario Fundación Alcorcón. 3. Department of Pathology, Hospital Universitario 12 de Octubre. 4. Skin Cancer Unit, Non-invasive Diagnosis, Grupo Pedro Jaén. Madrid.

Introduction & Objectives

Reflectance confocal microscopy (RCM) is an imaging technique that allows in vivo diagnosis and is used primarily for the study of skin cancer. However, there are few specialists trained in RCM and there are few studies that evaluate the diagnostic accuracy of RCM in novice observers.

Materials & Methods:

A prospective observational study was performed at Hospital Universitario 12 de Octubre. Skin lesions with clinically/dermoscopically-equivocal diagnosis were consecutively analysed. These lesions were analyzed by a main observer (principal investigator or PI) with less than 1 year of experience in RCM, a group of 10 novice observers with no experience in the technique as well as by a group of experts with more than 5 years of experience in RCM and analyzed histopathologically by a dermatopathologist whose diagnosis was established as the gold standard. All participants (IP, group of novice observers and experts) proposed a diagnosis, and rated their confidence in this diagnosis and proposed management before and after reading RCM images. During the study, novice observers were trained in the analysis of the technique.

Results

A total of 175 lesions were analyzed, 112 of which were benign (64%), while 63 were malignant (36%).

- **Principal investigator (PI)** 117 out of 175 lesions evaluated (66.9%) were correctly assessed by clinical and dermoscopic analysis by the PI. After evaluation by RCM, a correct diagnosis was reached in 148 lesions (84.7%) ($p=0.0029$). These results had a high concordance with the results obtained by the expert group, with a kappa of 84.1% ($p<0.001$). The sensitivity and specificity for the detection of malignancy were 96.8% and 89.3% (100% and 92.3% for melanoma, respectively). Diagnostic confidence was modified from a mean value of 7 points (SD 1.19) by clinical-dermoscopic assessment, to a mean value of 9.04 (SD 0.86) after assessment by RCM ($p<0.0001$). The management proposed by PI after assessment by MCR was modified in 65 of the lesions (37% of the lesions overall).
- **Group of novice observers in RCM.** In the clinical/dermoscopic analysis, novice observers showed a 46.9% accuracy rate, which was increased using MCR up to 57.3%. This technique also increased diagnostic confidence and modify management in 28% of cases. The sensitivity and specificity for the detection of malignancy were 71.4% and 82.4% (62.4% and 87.9% for melanoma, respectively).

Conclusions

- 1.- The learning curve with RCM in novice observers shows a significant positive trend in the first months of experience with the technique.
- 2.- Diagnostic accuracy increases when using RCM, even in novice observers.
- 3.- Diagnostic confidence increases when using RCM, even in novice observers.
- 4.- The use of RCM by novice observers changes the usual management in clinical practice.

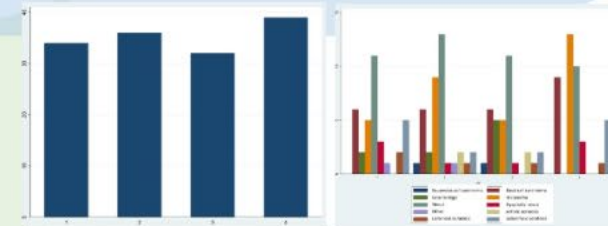


Figure 1. Evolution in the hit rate throughout 4 quartiles in the evaluations performed by MCR by PI. We can see the overall positive evolution, seeing a steady increase with the exception of the drop in the hit rate in Q3, which did not alter the significance in the positive evolution.

Figure 2. Evolution in the hit rate over the 4 quartiles in each of the histologic types studied by RCM diagnosis by PI. We can see the overall positive evolution, as well as the positive evolution in the diagnosis of melanoma and basal cell carcinoma, as well as the lower evolution in the case of nevus diagnosis.

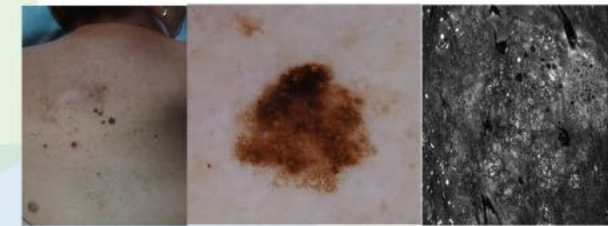


Figure 3. A 70-year-old female patient with no relevant personal or family dermatological history with a pigmented lesion in her upper back that was noticed by her GPs during a physical examination. Dermoscopy showed atypical network, inverse network and irregular globules. The lesion was characterized by dermoscopy as a malignant lesion with high confidence and was proposed to excision by IP; novice readers and expert group. After RCM evaluation, diagnosis changed to a compound nevus and management was changed to observation.



Jain M, Puljal SV, Rajadhyaksha M, Halpern AC, Gonzalez S. Evaluation of Bedside Diagnostic Accuracy, Learning Curve, and Challenges for a Novice Reflectance Confocal Microscopy Reader for Skin Cancer: Detection In Vivo. JAMA dermatology [Internet]. 2018 Aug 1 [cited 2022 Dec 10];154(8):962-5.

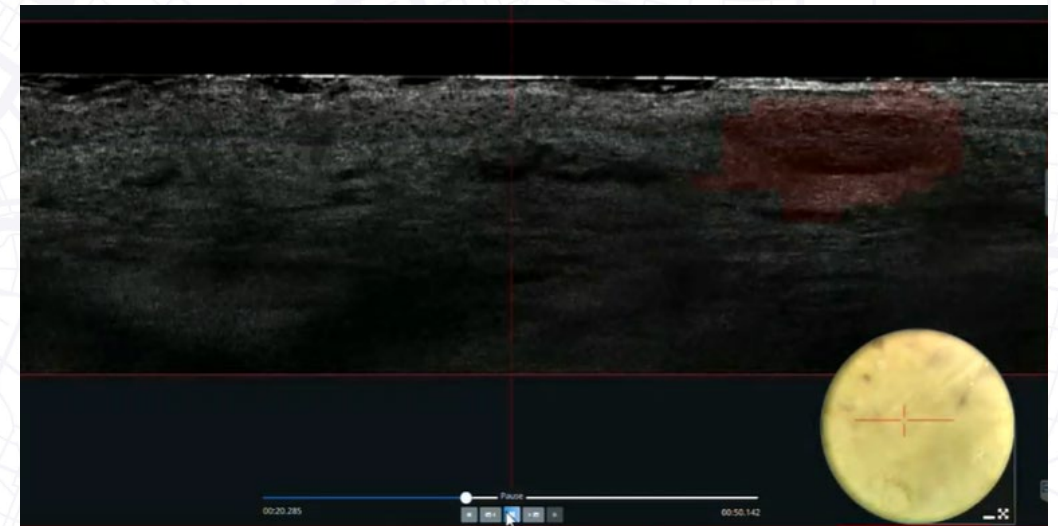
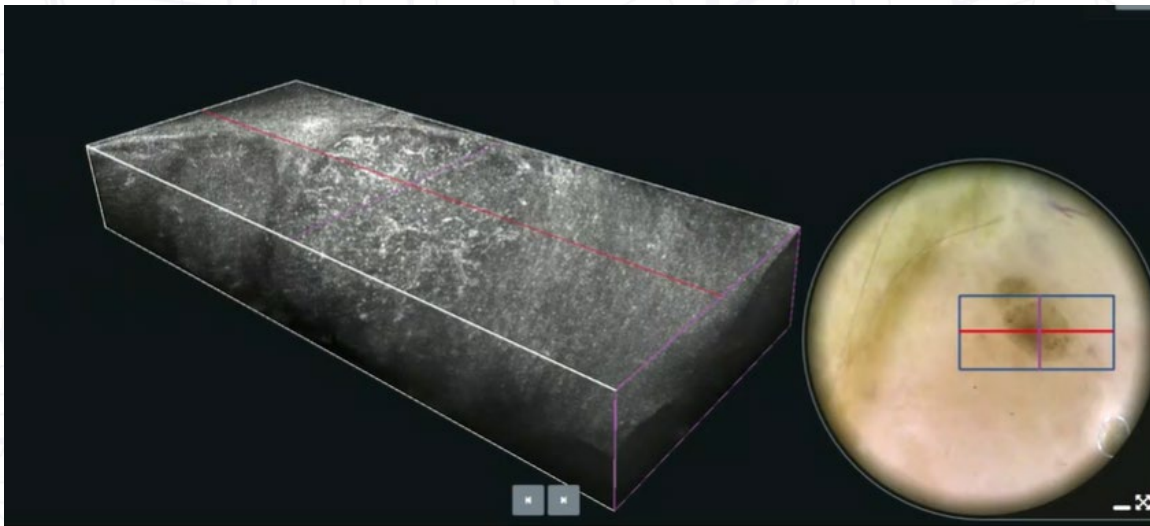
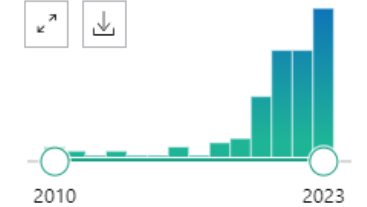
Wlamos C, Marubens E, Jain M, Chavez Bourgeois M, Puljal S V, Dussa SW, et al. Improvement of diagnostic confidence and management of equivocal skin lesions by integration of reflectance confocal microscopy in daily practice: Prospective study in 2 referral skin cancer centers. J Am Acad Dermatol [Internet]. 2020 Oct 1 [cited 2022 Dec 10];83(4):1057-63.

Pellacani G, Scope A, Gonzalez S, Gutera P, Farnetani F, Malvehy J, et al. Reflectance confocal microscopy made easy: The 4 must-know key features for the diagnosis of melanoma and non-melanoma skin cancers. J Am Acad Dermatol [Internet]. 2019 Aug 1 [cited 2022 Dec 10];81(2):520-6.

- Mariano Suppa: **Line-field confocal optical coherence tomography (LC-OCT)**
 - Combina características de RCM y OCT (penetra 500 μm y resolución 1.3x1.1 μm)
 - Imágenes horizontales y verticales permiten crear un modelo 3D
 - Integración con dermatoscopia e inteligencia artificial

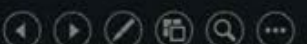
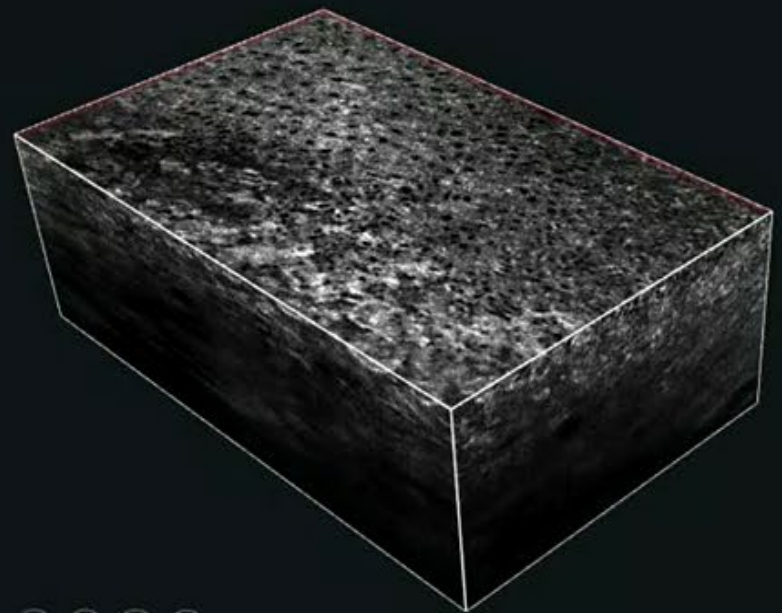
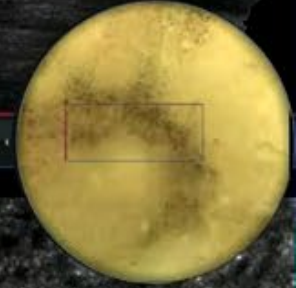
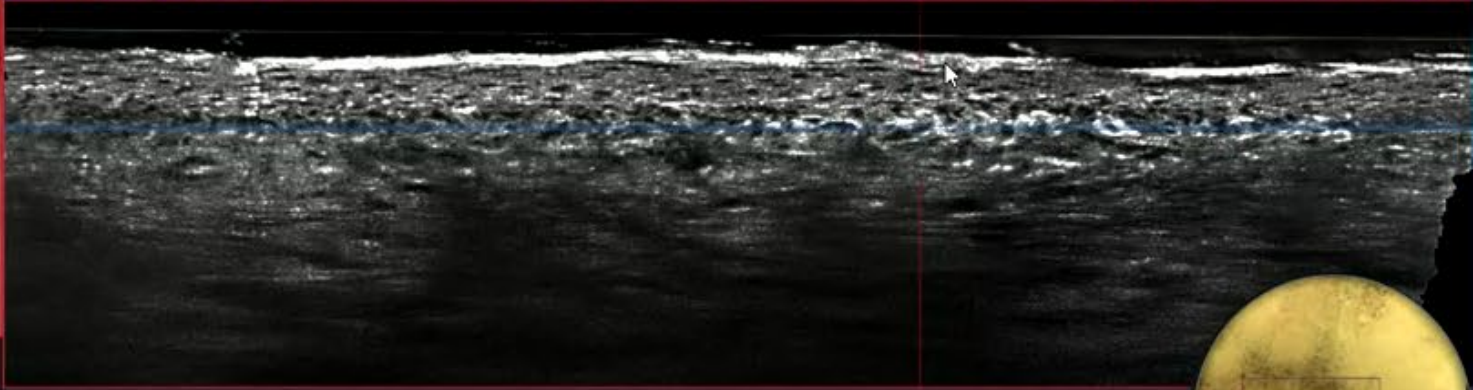
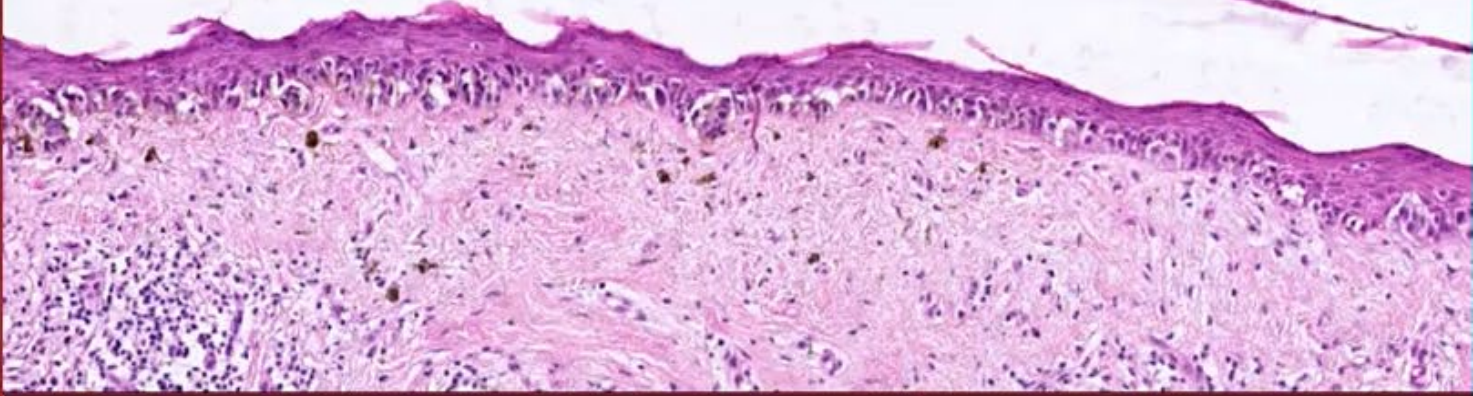
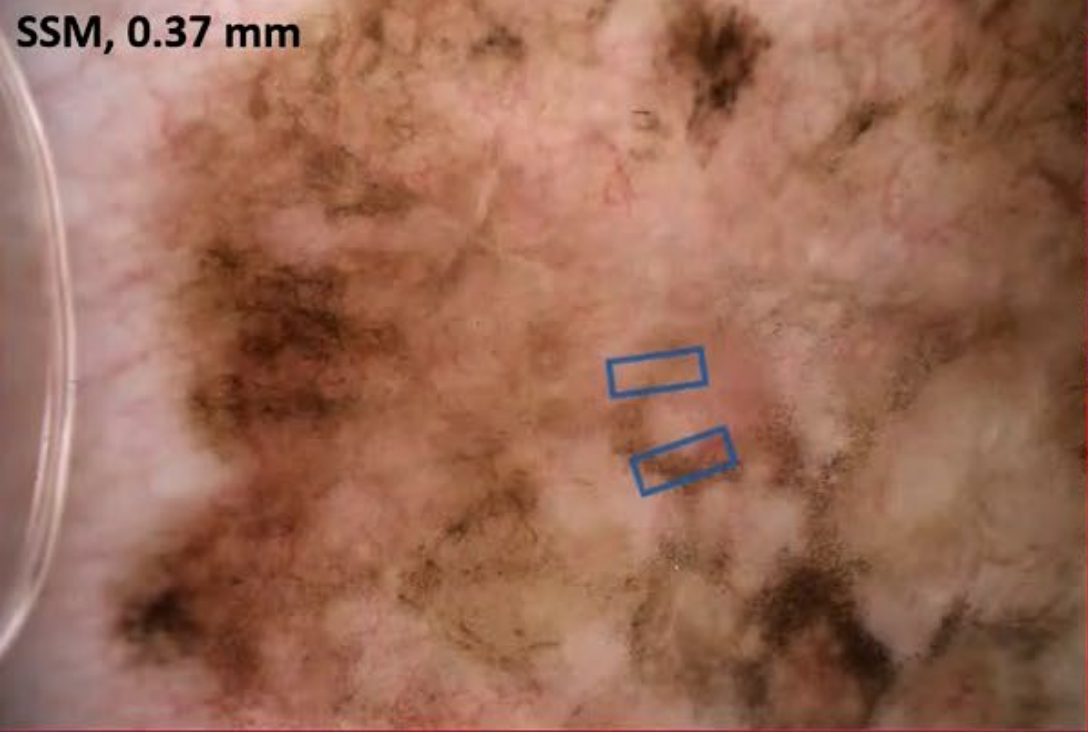


RESULTS BY YEAR



- Patrones: CBC (millefeuille) y AK/SCC (determina subtipos; PRO y atypia score sin biopsia)
- Aplicaciones:
 - Confirmación diagnóstica de lesión dudosa
 - Monitorización de tratamiento

SSM, 0.37 mm



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