

Differentiation of Dermal Nevus and Basal Cell Carcinoma Based on Optical-Super High Magnification Dermoscopy

Joanna Pogorzelska-Dyrbuś¹, Elisa Cinotti², Aimilios Lallas³

¹ “Estevita” Specialist Medical Practice, Tychy, Poland

² Dermatology Unit, Department of Medical, Surgical and Neurological Sciences, University of Siena, Siena, Italy

³ First Department of Dermatology, School of Medicine, Faculty of Health Sciences, Aristotle University, Thessaloniki, Greece

Key words: Optical super-high magnification dermoscopy, Basal cell carcinoma, Dermal nevus

Citation: Pogorzelska-Dyrbuś J, Cinotti E, Lallas A. Differentiation of Dermal Nevus and Basal Cell Carcinoma Based on Optical-Super High Magnification Dermoscopy. *Dermatol Pract Concept*. 2024;14(1):e2024094. DOI: <https://doi.org/10.5826/dpc.1401a94>

Accepted: November 20, 2023; **Published:** January 2024

Copyright: ©2024 Pogorzelska-Dyrbuś et al. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (BY-NC-4.0), <https://creativecommons.org/licenses/by-nc/4.0/>, which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding Author: Joanna Pogorzelska-Dyrbuś, MD PhD, “Estevita” Specialist Medical Practice, 43-100 Tychy, Silesia, Poland. phone: +48 32 227 96 30 e-mail: jpogorzelskadyrbus@gmail.com

Introduction

Although dermoscopy usually allows for discriminating between dermal nevi (DN) and basal cell carcinoma (BCC), the dermoscopic features might occasionally be indistinguishable [1].

Optical Super-High magnification dermoscopy (OSHMD) with magnification up to 400x may provide new differentiating structures invisible in conventional dermoscopy [2].

Case Presentation

We present the dermoscopic features of two DN and two BCC examined with the Medicam 1000 (Fotofinder System, Bad Birnbach, Germany), at standard 20x and at 400x magnification (OSHMD).

The DN were located on the abdomen of a 36-year-old man (Fig 1A-C) and the face of a 45-year-old woman (Fig 1D-F).

The first DN in standard dermoscopy displayed a blue-grey globule with branched linear vessel in the center and short linear vessels at the periphery (Fig 1A). These findings could mislead to the diagnosis of BCC. OSHMD revealed prominent stem and looped vessels, but also multiple small pale brown circular structures of the same size (Fig 1B), possibly corresponding to melanocytes in the upper part of dermal nests. In the second patient, conventional dermoscopy revealed a central light brown pigmentation and linear curved vessels distributed throughout the whole lesion (Fig 1D). OSHMD showed vessels and brown circular structures similar to the previous case (Fig 1E). In both patients, histopathology confirmed the diagnosis of DN (Fig 1C, F).

The BCCs developed in a 55-year-old woman who presented with a 5 mm firm papule on the upper lip reported to have appeared several years earlier (Fig 2A-C), and a 45-year-old woman with a pink flat papule on the lower eyelid (Fig 2D-F). In the first patient, standard dermoscopy

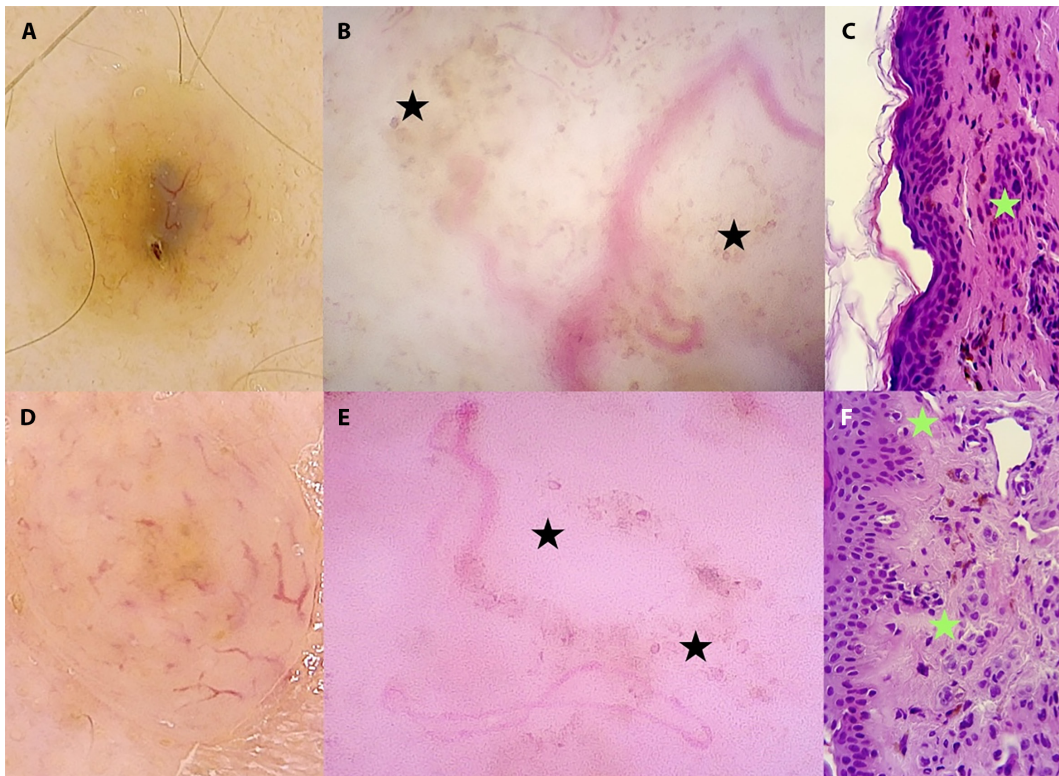


Figure 1: Standard dermoscopy (A, D) OSHMD (B, E) and histopathology of Dermal Nevi (C, F). Roundish melanocytes indicated by asterisks

Abbreviations: OSHMD – Optical Super-High Magnification Dermoscopy,

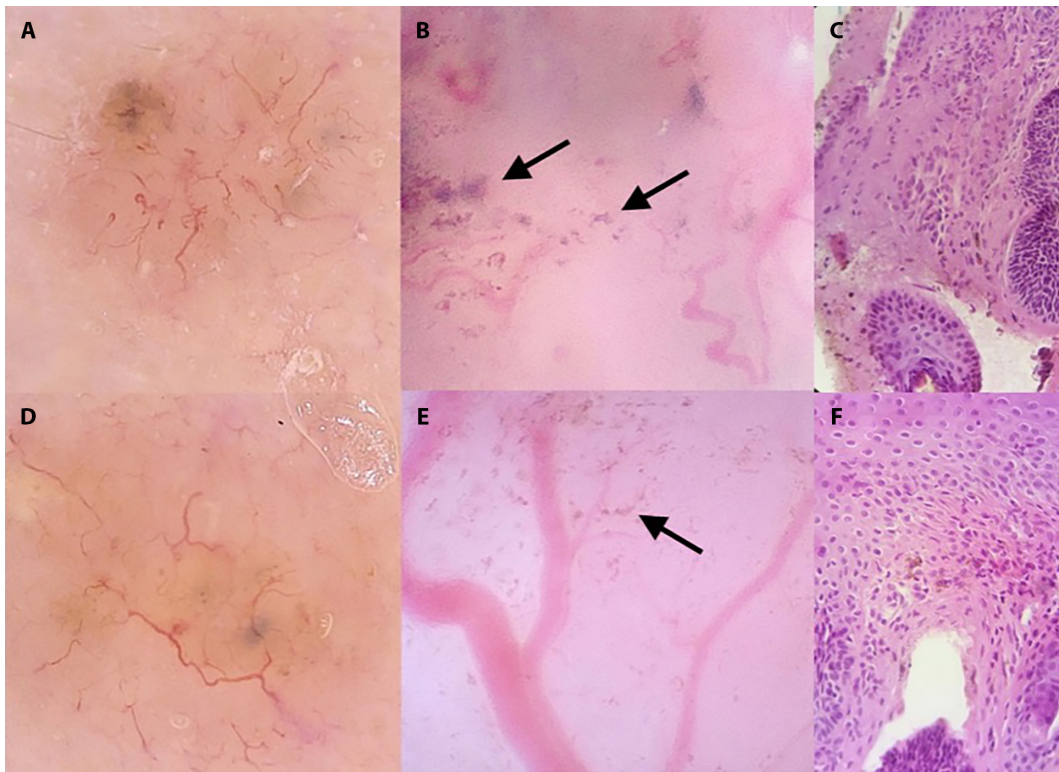


Figure 2: Standard dermoscopy (A, D) OSHMD (B, E) and histopathology of BCC (C, F). Fine pigmented structures are indicated by arrows.

Abbreviations: BCC – Basal cell carcinoma; OSHMD – Optical Super-High Magnification Dermoscopy

revealed branched vessels and brown globules located focally at the periphery (Fig 2A). OSHMD revealed aggregated fine pigmented structures, and looped vessels (Fig 2B). In the standard dermoscopy of the second patient, a grey globule and branched vessels were noticed (Fig 2D), while OSHMD revealed distinctive tree-like vessels with branches and variously shaped fine pigmented structures (Fig 2E). Histopathology of both lesions confirmed nodular BCC (Fig 2C, F).

In both DN, OSHMD revealed invisible in standard dermoscopy circular pigmented structures, uniform in size and color, with a tendency for an annular arrangement. Based on the comparison with histopathology, and according to the available literature those cells possibly correspond to melanocytes [3]. Moreover, these cells share similarities with melanocytes of dermal nevi seen under reflectance confocal microscopy (RCM), as hyper-reflective circles or roundish cells homogeneous in shape and size [4,5]. In OSHMD of BCCs, the aforementioned circular structures were absent. Fine pigmented structures observed in BCC could correspond to pigmented basaloid cells and dendritic melanocytes inside the basaloid nests visible in RCM [6]. Such structures were absent in both cases of DN. Our observations are consistent with previous data suggesting that OSHMD can reveal very fine pigmented structures corresponding to dots or globules, suggestive of BCC [2]. However, as either looped or branched vessels were present in both DN and BCC cases, the vascular pattern does not appear to be a distinctive feature of neither lesion type.

Conclusion

The OSHMD findings described herein indicate that this technique might significantly enhance the discrimination

between DN and BCC by revealing circular cells probably corresponding to typical melanocytes in the DN and the fine pigmented structures in BCC. Our findings require confirmation by studies with a larger sample.

References

1. Conforti C, Giuffrida R, Agozzino M, Cannavó PS, Dianzani C, di Meo N, Nardello C, Neagu N, Guarneri F, Zalaudek I. Basal cell carcinoma and dermal nevi of the face: comparison of localization and dermatoscopic features. *Int J Dermatol*. 2021 Aug;60(8):996-1002. doi: 10.1111/ijd.15554. Epub 2021 Apr 7. PMID: 33825193.
2. Pogorzelska-Dyrbus J, Szepietowski JC. Optical super-high magnification dermoscopy of pigmented and nonpigmented nodular basal cell carcinoma. *J Cosmet Dermatol*. 2022 Nov;21(11):6458-6460. doi: 10.1111/jocd.15082. Epub 2022 Jun 2. PMID: 35567508
3. Radi G, Rossi R, Diotallevi F, Giannoni M, Molinelli E, Paolinelli M, Ferrara G, Offidani A. The role of the optical super high magnification dermoscopy (O.S.H.M.D) in the management of melanocytic lesions. *J Eur Acad Dermatol Venereol*. 2023 Jan;37(1):e122-e124. doi: 10.1111/jdv.18533. Epub 2022 Aug 22. PMID: 35977047.
4. Cinotti E, Perrot JL, Labeille B, et al. Apport de la microscopie confocale par réflectance dans le diagnostic de *naevus* dermique palpébral [Contribution of reflectance confocal microscopy in the diagnosis of eyelid dermal nevus]. *Ann Dermatol Venereol*. 2015;142(3):226-228. doi:10.1016/j.annder.2015.01.003
5. Scope A, Benvenuto-Andrade C, Agero AL, Halpern AC, Gonzalez S, Marghoob AA. Correlation of dermatoscopic structures of melanocytic lesions to reflectance confocal microscopy. *Arch Dermatol*. 2007;143(2):176-185. doi:10.1001/archderm.143.2.176
6. Segura S, Puig S, Carrera C, Palou J, Malvehy J. Dendritic cells in pigmented basal cell carcinoma: a relevant finding by reflectance-mode confocal microscopy. *Arch Dermatol*. 2007;143(7):883-886. doi:10.1001/archderm.143.7.883