Published in final edited form as:

Br J Dermatol. 2019 January ; 180(1): 229–230. doi:10.1111/bjd.17241.

Clinical, dermoscopic and reflectance confocal microscopy characterization of facial basal cell carcinomas presenting as small white lesions on sun-damaged skin

K. Liopyris^{1,*}, C. Navarrete-Dechent^{1,2,*}, O. Yélamos^{1,3}, M. A. Marchetti¹, H. Rabinovitz⁴, A. A. Marghoob¹

¹Dermatology Service, Memorial Sloan Kettering Cancer Center, New York, NY, USA.

²Department of Dermatology, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile.

³Dermatology Department, Hospital Clínic, Universitat de Barcelona, Barcelona, Spain

⁴Skin Cancer Associates, Plantation, FL, USA.

Keywords

dermoscopy; dermatoscopy; basal cell carcinoma; skin cancer; reflectance confocal microscopy; cancer; diagnosis

DEAR EDITOR,

Basal cell carcinoma (BCC) can present with a spectrum of clinical and dermoscopic morphologies, making their detection challenging; if left untreated can lead to significant

-Correspondence: Ashfaq A. Marghoob, MD, Dermatology Service, Memorial Sloan Kettering Cancer Center, 800 Veterans Memorial Highway, 2nd floor, Hauppauge, New York 11788, Phone: 631-863-5150, Fax: 631-361-4694, marghooa@mskcc.org. Authorship Contributions:

(1) Acquisition, analysis and interpretation of data.

(2) Drafting and revising the article.

(3) Final approval of the version to be published.

Konstantinos Liopyris: (1), (2) and (3).

Cristián Navarrete-Dechent: (1), (2) and (3).

Oriol Yélamos: (1), (2) and (3).

Michael A. Marchetti: (1), (2) and (3).

Harold Rabinovitz: (1), (2) and (3).

Ashfaq A. Marghoob: (1), (2) and (3).

Dr(s) Liopyris, Navarrete-Dechent, Yelamos and Marghoob had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Rabinovitz and Marghoob.

Acquisition, analysis, and interpretation of data: Liopyris, Navarrete-Dechent, Yelamos and Marghoob.

Drafting of the manuscript: Liopyris, Navarrete-Dechent, Yelamos, Marchetti, Rabinovitz and Marghoob.

Critical revision of the manuscript for important intellectual content: Liopyris, Navarrete-Dechent, Yelamos, Marchetti, Rabinovitz and Marghoob.

Statistical analysis: Liopyris, Navarrete-Dechent

Obtained funding: N/A.

Administrative, technical, or material support: Marghoob.

Study supervision: Liopyris, Navarrete-Dechent, Yelamos, Marchetti, Rabinovitz and Marghoob.

*Both authors contributed equally to this article

Conflicts of interest: None.

cosmetic and/or functional morbidity.^{1–3} Dermoscopy and reflectance confocal microscopy (RCM) have been shown to aid in the diagnosis of BCC.^{3–5}

Herein, we highlight the clinical, dermoscopic, and RCM characteristics of an under-appreciated morphology of BCC presenting as inconspicuous, white facial lesions that can easily go unnoticed or mistaken for fibrous papules or other benign lesions.

This was a retrospective, single arm, study. All cases for this study originated from a de-identified database of lesions examined with both polarised and non-polarised dermoscopy, RCM and biopsied in a single dermatology practice. We included only lesions that were symmetrical, white in color, <10 mm in diameter and clinically inconspicuous for the diagnosis of BCC. One of the authors (H.R) observed that BCC can present as clinically inconspicuous, white macules or papules on the face. Accordingly, we examined the author's database which included 1266 BCC and found 45 cases meeting the inclusion criteria. Three investigators (K.L, C.N.-D. and O.Y.) reviewed the dermoscopic and RCM images. A fourth reviewer (A.A.M.) resolved disagreement when unanimity could not be achieved. All lesions were assessed for the presence of any dermoscopic or RCM, BCC specific criteria.^{5–8}

Our sample consisted of 51.1% females with a mean age of 65.2 years (SD 13.1; range 34 – 92 years). All individuals had fair skin and extensive sun-damage; 46.7% (N=21) had skin type I and 53.3% (N=24) had skin type II. Only 13.3% (n=6) were noted by the patients themselves. The differential diagnosis for these lesions included BCC, scar, sebaceous hyperplasia, desmoplastic trichoepithelioma and fibrous papule.

Regarding the location of the lesions, 22.2% (n=10) were on the forehead or temples, 22.2% (n=10) on the cheek, 35.6% (n=16) on the nose or nasolabial fold, 11.1% (n=5) on the lips, and 4.4% (n=2) on the eyelids. Eighty percent (n=36) of lesions were palpable. Mean lesion size was 3.7 mm (SD: 1.9; range 1 – 9 mm). Visualized with dermoscopy, 55.6% (n=25) were white and 42.2% (n=19) and 2.2% (n=1) had pink or blue hues, respectively. On histopathologic examination, 80% (n=36) showed a mixed nodular and superficial BCC subtype, 13.3% (n=6) were infiltrative, and 4.4% (n=2) were morpheaform. In one case, BCC subtype was not defined.

We identified that 28.9% (n=13) of the lesions under dermoscopic examination lacked the classic BCC dermoscopic criteria; 66.7% (n=30) had arborizing vessels and 35.6% (n=16) had short-fine telangiectasias. Shiny white structures were present in 55.6% (n=25) of the lesions, while 4.4% (n=2) had ulcerations/erosions on dermoscopy. Pigmented BCC criteria were a rare finding in this subset of lesions; 2.2% (n=1) had blue-gray ovoid nests, 6.7% (n=3) had blue-grey globules, 11.1% (n=5) had in-focus, blue-gray dots, while only 1 lesion (2.2%) had a leaf-like area and none of the lesions examined had spoke-wheel areas. Interestingly, 13.3% (n=6) appeared with milia-like cysts in dermoscopy.

Importantly, BCC-specific structures were found in all but one case using RCM. A consistent RCM finding in these BCCs was the presence of thickened collagen fibers in 90.7% (n=39) of cases. Additionally, 90.7% (n=39) presented with tumor islands; clefting and horizontal vessels were present in 81.4% (n=35) of cases. Finally, 58.1% (n=25) had

palisading, 41.9% (n=18) had dark silhouettes, 20.9% (n=9) had streaming and 11.6% (n=5) had cordlike structures.

In this study, we characterize an underappreciated clinical presentation of BCC that appears as inconspicuous small white macules or papules on the face. Most of these lesions lack classic dermoscopic pigmented BCC features, however arborizing vessels with a prevalence of 66.7% along with the existence of shiny white blotches and strands (present in 55.6% of the lesions) can aid towards the diagnosis.

Interestingly, 28.9% of these lesions lacked any classic BCC criteria. The addition of RCM in further evaluating facial white lesions can assist in the correct diagnosis of BCC. Only one of the 43 BCCs (2.3%), for which we had RCM images, did not present with any RCM features as described in the literature. We identified that these small white BCCs revealed a high predominance of tumor islands surrounded by thickened collagen fibers (90.7% - 39 of 43 lesions) Thus, we hypothesize that the white color seen in these lesions may be due to the abundant dermal collagen.

In conclusion, BCC should enter the differential diagnosis when evaluating small white facial lesions especially in severely photodamaged, fair-skinned individuals. Dermoscopy in combination with RCM are useful tools in identifying BCCs that present as small white macules or papules.

Financial disclosure:

- **Relations relevant to this manuscript:** None.
- **All other relationships:** All authors have no financial disclosure to declare.

Funding/Support: This study was partly funded by Cancer Center Support grant P30 CA008748 from the National Cancer Institute, NIH

Funding/Sponsor was involved?

Design and conduct of the study: No.

Collection, management, analysis and interpretation of data: No.

Preparation, review, or approval of the manuscript: No.

Decision to submit the manuscript for publication: No.

Financial Disclosure: All the other authors have no financial disclosure to declare.

References:

1. Mohan SV, Chang ALS. Advanced Basal Cell Carcinoma: Epidemiology and Therapeutic Innovations. *Curr Dermatol Rep*. 2014;3:40–45. [PubMed: 24587976]
2. Wolner ZJ, Bajaj S, Flores E, et al. Variation in dermoscopic features of basal cell carcinoma as a function of anatomic location and pigmentation status. *British Journal of Dermatology*. 9 2017:n/a–n/a. doi:10.1111/bjd.15964.
3. Ruini C, Hartmann D, Saral S, Krammer S, Ruzicka T, Braunmühl von T. The invisible basal cell carcinoma: how reflectance confocal microscopy improves the diagnostic accuracy of clinically unclear facial macules and papules. *Lasers in Medical Science*. 2016;31(8):1727–1732. [PubMed: 27492373]

4. Nelson SA, Scope A, Rishpon A, et al. Accuracy and confidence in the clinical diagnosis of basal cell cancer using dermoscopy and reflex confocal microscopy. *Int J Dermatol*. 2016;55(12):1351–1356. doi:10.1111/ijd.13361. [PubMed: 27419915]
5. Longo C, Lallas A, Kyrgidis A, et al. Classifying distinct basal cell carcinoma subtype by means of dermoscopy and reflectance confocal microscopy. *Journal of American Dermatology*. 2014;71(4): 716–724.e1. doi:10.1016/j.jaad.2014.04.067.
6. Puig S, Cecilia N, Malvehy J. Dermoscopic criteria and basal cell carcinoma. *G Ital Dermatol Venereol*. 2012;147(2):135–140. [PubMed: 22481576]
7. Longo C, Farnetani F, Ciardo S, et al. Is confocal microscopy a valuable tool in diagnosing nodular lesions? A study of 140 cases. *British Journal of Dermatology*. 2013;169(1):58–67. doi:10.1111/bjd.12259. [PubMed: 23374159]
8. Navarrete-Dechent C, Bajaj S, Marchetti MA, Rabinovitz H, Dusza SW, Marghoob AA. Association of Shiny White Blotches and Strands With Nonpigmented Basal Cell Carcinoma. *JAMA Dermatol*. 2016;152(5):546–547. doi:10.1001/jamadermatol.2015.5731. [PubMed: 26792406]

Figure 1:

Basal Cell carcinoma (BCC) presenting as white papule on the face. **A.** At physical examination, the lesion appeared as an inconspicuous white papule on the nose (black arrow) **B.** Dermoscopy reveals shiny white blotches and strands (black asterisk) and arborizing vessels (black arrow) (Polarized dermoscopy, original magnification 10X) **C.** Reflectance confocal microscopy reveals multiple tumor islands (white asterisks) with clefting (white arrow) and palisading (black arrow) surrounded by thickened collagen (black asterisk) **D.** Histopathology confirmed the diagnosis, showing multiple tumor nests (black asterisks) (H&E, 20X)