Title
A diagnostic challenge: inflamed and pigmented seborrheic keratosis. Clinical, dermoscopic, and histopathological correlation

Journal
Dermatology Online Journal, 25(3)

Authors
Mansur, Ayse Tulin
Yildiz, Semsi

Publication Date
2019

DOI
10.5070/D3253043363

A diagnostic challenge: inflamed and pigmented seborrheic keratosis. Clinical, dermoscopic, and histopathological correlation

Ayse Tulin Mansur[1] MD, Semsi Yildiz[2] MD

Affiliations:[1]Baskent University Istanbul Hospital Dermatology Clinic, Istanbul, Turkey, [2]Baskent University Istanbul Hospital Pathology Department, Istanbul, Turkey

Corresponding Author: Ayse Tulin Mansur MD, Sırmaperde sokak, Gurur sitesi, C Blok, No 13, Altunizade, 34662, Istanbul, Turkey, Tel: 90-5352072411, Email: tulinmansur@gmail.com

Abstract

Pigmented and irritated types of seborrheic keratosis (SK) can be confused with melanoma, basal cell carcinoma, or pigmented actinic keratosis. Dermoscopic examination may give many clues for the diagnosis of SK, but in equivocal cases the accurate diagnosis can only be made by microscopic features. Herein, we report a striking, isolated pigmented and inflamed SK, located on the waist in an elderly man. Although the duration of the lesion was not clear, a recent change in color was reported. The striking dark pigmentation and lack of visible characteristic features for SK led us to consider other pigmented lesions, mainly melanoma, which it closely resembled. Dermoscopic examination was inconclusive with subtle clues for SK, such as brown-gray dots, small brownish clods, a few curved short lines, and few small pinkish round structures. Histopathological and immunohistochemical examinations revealed an inflamed and pigmented SK. In conclusion, pigmented and inflamed SK does not usually tend to show typical dermoscopic features of SK and may mimic other pigmented lesions, including melanoma. All skin lesions that cannot be classified as clearly benign should undergo biopsy.

Keywords: clinical feature; dermoscopy; diagnosis; histopathology; misdiagnosis; pigmented lesions; seborrheic keratosis

Introduction

Seborrheic keratosis (SK) is a benign and common epidermal lesion, which has several subtypes and variable morphology [1, 2]. It can mimic malignancy clinically and may pose diagnostic difficulties. Most particularly pigmented and inflamed types of SK can be confused with melanoma, basal cell carcinoma, or pigmented actinic keratosis [3].

Herein, we report an elderly man with a challenging pigmented lesion and emphasize the diagnostic importance of dermoscopic and histopathological examinations in distinguishing between SK and its mimics.

Case Synopsis

A-71-year-old man complained of a dark mole on his waist. He could not recall the exact duration of this lesion, but his wife had noticed a recent change in its color. His medical history was uneventful, without chronic and excessive sun exposure.

Dermatologic examination showed a deeply hyperpigmented, oval plaque, measuring 1×1.5cm. (**Figure 1A**). The plaque was asymmetrical in terms of color and shape. The right pole showed a pinkish area and there was a brownish hue on the left pole. There were some parallel vertical folds on the left portion. The lesion was isolated with no surrounding

similar lesions or prominent features of solar damage.

Dermoscopic examination revealed a chaotic, multi-colored (gray, brown, black, and pink) plaque with central superficial ulceration. The right pole showed a structureless, homogenous pinkish-white area with a few small pinkish round structures. The left pole showed brown-gray dots, small brownish clods, and a few curved short lines. There were no black-brown clods, but shiny small white clods were scattered peripherally (**Figure 1B**). Owing to atypical clinical and dermoscopic findings and a lack of precise history, we performed total excision with a differential diagnosis of melanoma, pigmented Bowen disease, pigmented basal cell carcinoma, and melanoacanthoma.

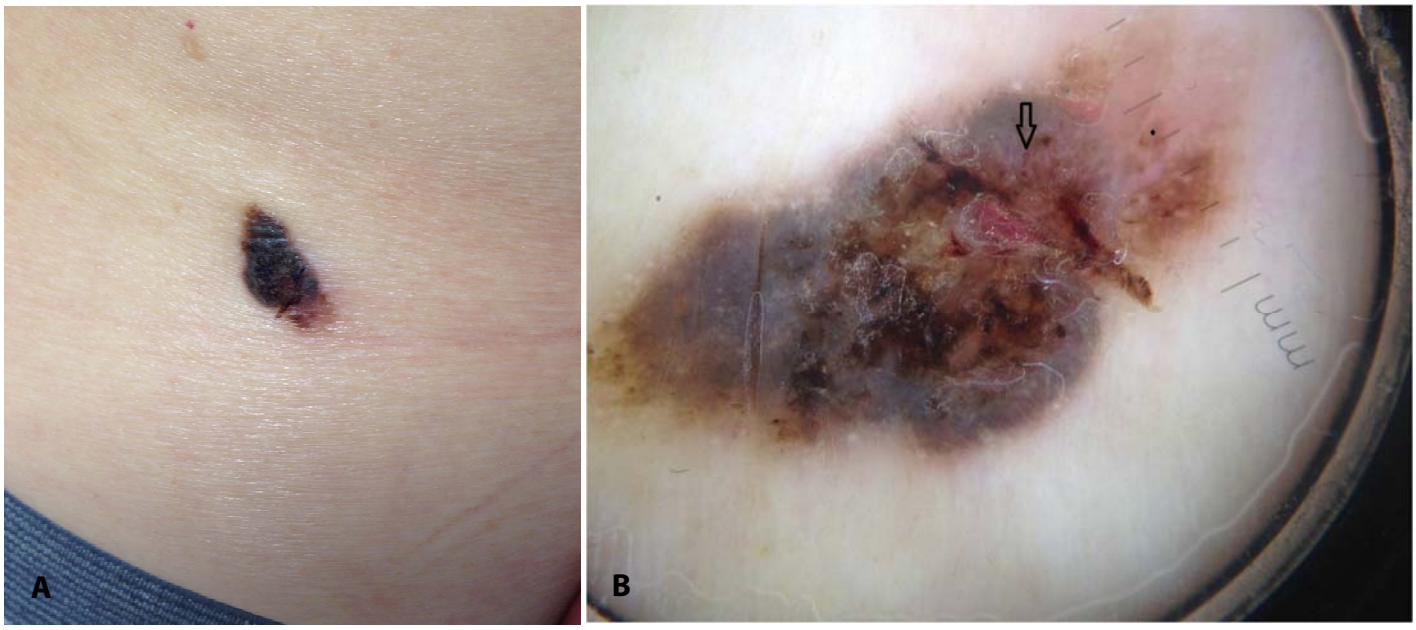

Figure 1. ***A)*** *Clinical picture of the pigmented plaque.* ***B)*** *Dermoscopic features of the lesion.* ***Arrow****: a pinkish round structure.*

Histopathologic examination revealed ortho- and parakeratosis, acanthosis, and papillomatosis, showing irregular extensions to the dermis, rare dysplasia, and mitotic figures not reaching to the upper layers of the epidermis. In addition, there were scattered pseudohorn cysts, numerous squamous eddies, increased pigmentation in the basal cell layer, dilated dermal capillaries, dermal melanophages, and inflammatory infiltration (**Figure 2**).

Immunohistochemical analysis showed diffuse and strong staining with keratin (**Figure 3A**). Epidermal Langerhans cells and dermal melanophages were positive for S100 and HMB 45, whereas the lesional cells were negative (**Figure 3B, C**). Based on the histopathologic and immunohistochemical findings a pigmented and inflamed seborrheic keratosis (ISK) was diagnosed.

Case Discussion

Seborrheic keratosis (SK) is a common and benign epidermal proliferation, mostly seen on the skin of the trunk, extremities, head, and neck of elderly people. It generally appears as a brownish, round or oval, sharply demarcated, exophytic, verrucous, or keratotsic plaque, ranging in size from a few to many mm [1, 2].

With this classical "stuck-on" appearance, SK is generally readily identified without the need for a biopsy. However, when the lesion has an unusual clinical picture or has become inflamed it may be difficult to differentiate SK from several benign or malignant lesions, such as melanocytic nevus, melanoma, basal cell carcinoma, and squamous cell carcinoma [1, 3]. Likewise, in our case atypical clinical findings prompted us to consider pigmented lesions other than SK.

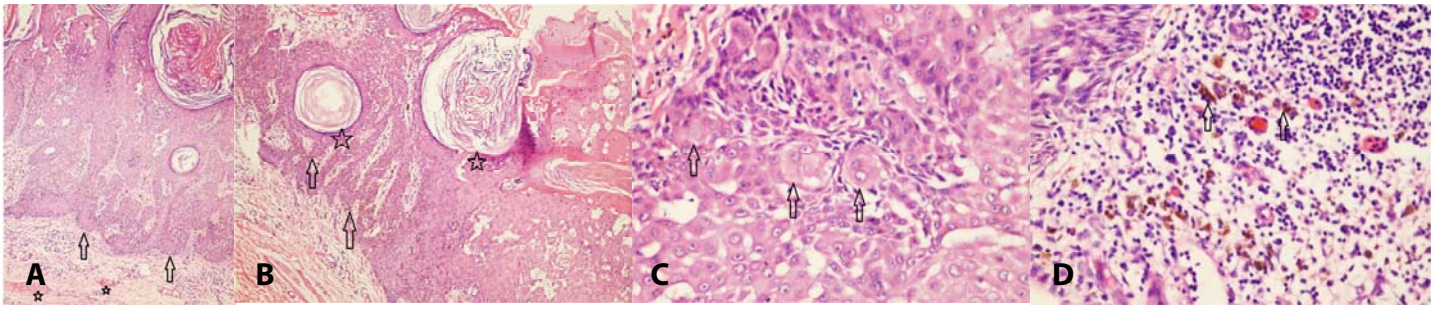

Figure 2. *Histopathologic features.* ***A)*** *Arrows: areas of downward proliferation breaking through the horizontal demarcation, asterisks: dermal dilated vessels. H&E, 100×.* ***B)*** *Arrows: increased basal pigmentation, asterisks: pseudohorn cysts. H&E, 150×.* ***C)*** *Arrows: squamous eddies. H&E, 400×.* ***D)*** *Arrows: increased melanin in dermal macrophages. H&E, 200×.*

Seborrheic keratosis is usually divided into six distinctive histopathologic subtypes: acanthotic, adenoid, hyperkeratotic, clonal, irritated, and melanoacanthoma. All of these subtypes have three common features: hyperkeratosis, acanthosis, and papillomatosis. The overview of the histologic sections of SK show that the base of the lesion lies roughly on a horizontal axis between the two lateral lesional edges surrounded by normal tissue [1, 2].

The main microscopic characteristics of the ISK are whorled aggregations of eosinophilic, flattened squamous epithelial cells (squamous eddies) similar to an onion-peel, and areas of downward proliferation breaking through the horizontal demarcation, in contrast to non-inflamed types. On the other hand, some cellular atypia may be encountered in ISK [4]. Our case showed all the above-mentioned features. Although in some cases ISK manifests a predominantly lymphocytic dermal lichenoid infiltrate, inflammation may be mild, even absent. The presented case showed a moderate inflammation, mostly located around the vessels of the upper dermis. A study by Kitamura et al. showed that ISK manifests a high degree of acanthosis and relatively abundant dilated vessels in the upper dermis [4]. The microscopic findings of the presented case were compatible with this report.

Pigmentation can be seen in any variant of SK, but is mostly associated with the acanthotic and reticulated subtypes, in which the melanin pigment is present mainly within basal keratinocytes. Melanoacanthoma is traditionally considered to be a heavily pigmented variant of SK. However, it does not simply exhibit an increase of melanin pigment in the keratinocytes, but shows an increase of large, highly dendritic melanocytes with abundant melanin, not restricted to the basal layer and intermingled with keratinocytes [3, 5]. Our case demonstrated pigment increase without a proliferation of melanocytes, indicating a pigmented SK instead of melanoacanthoma.

In atypical cases as ours', dermoscopy usually helps to confirm the clinical diagnosis of SK. Most cases of SK exhibit the typical dermoscopic features of thick

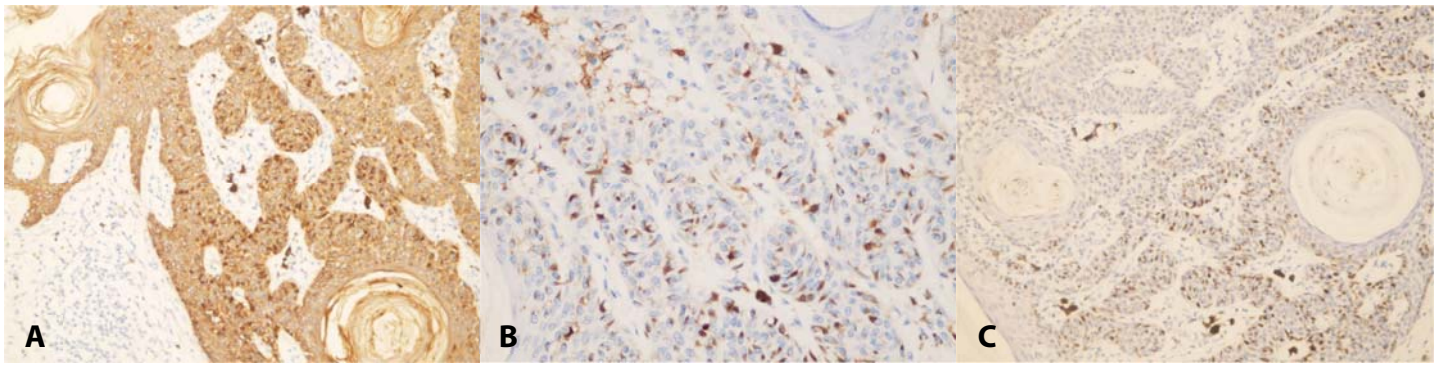

Figure 3. ***A)*** *Diffuse and strong staining with keratin, 400×.* ***B)***, ***C)*** *S100 and HMB45, respectively, only melanocytes and Langerhans cells were stained, 400×.*

lines (fissures and ridges), loop (hairpin) vessels with white halo, black to brown clods (comedo-like openings), and white clods (milia-like cysts), [2, 3-6].

However, dermoscopically 'false-positive' and 'false-negative' SKs do exist. Some histopathological types of SK including melanoacanthoma, inflamed, clonal, and regressive types are among the most frequent benign lesions, which may show dermatoscopic characteristics mimicking malignancy [7]. It has been reported that the most useful clues to recognize ISK are regularly distributed white perivascular halos, which in our case were not evident [8]. Previously reported dermoscopic features of melanoacanthoma include a starburst pattern, and melanoma-specific criteria such as blue-white veil, atypical dots, granularity, and polymorphous vessels, in addition to features characteristic for SK [5]. Therefore, these can be dermoscopically challenging, but the presence of other SK features usually allows the correct diagnosis

Kitamura et al. showed that the dermoscopic findings of ISK tend to have low frequency of brown and white clods and show small pinkish round structures on a whitish background. The authors suggested that these latter features might be specific for ISK and they interpreted them as a histopathological reflection of dilated vessels and surrounding acanthosis of tumor cells [4].

Our case did not show the classical brown-black clods, loop vessels, and distinctive thick lines. A few white shiny clods, and remnants of thick lines in one pole may have been subtle clues for SK. Although the lesion had a striking dark color, the dermoscopic features were not in accordance with those of melanoacanthoma. Our patient had also pinkish structures similar to ones defined by Kitamura et al. [4].

Conclusion

Pigmented and inflamed variants do not usually tend to show typical dermoscopic features of SK and may mimic other pigmented lesions, including melanoma. All skin lesions that cannot be classified as clearly benign should undergo biopsy.

Potential conflicts of interest

The authors declare no conflicts of interests.

References

1. Roh NK, Hahn HJ, Lee YW, Choe YB, Ahn KJ. Clinical and Histopathological Investigation of Seborrheic Keratosis. *Ann Dermatol*. 2016;28(2):152-8. [PMID: 27081260].
2. Alapatt GF, Sukumar D, Bhat MR. A Clinicopathological and Dermoscopic Correlation of Seborrheic Keratosis. *Indian J Dermatol*. 2016;61(6):622-627. [PMID: 27904179].
3. de Giorgi V, Massi D, Salvini C, Mannone F, Carli P. Pigmented seborrheic keratoses of the vulva clinically mimicking a malignant melanoma: a clinical, dermoscopic-pathologic case study. *Clin Exp Dermatol*. 2005;30(1):17-9. [PMID: 15663494].
4. Kitamura S, Hata H, Imafuku K, Fujita Y, Shimizu H. Dermoscopic findings of irritated seborrheic keratosis. *J Eur Acad Dermatol Venereol*. 2016;30(10):e94-e96. [PMID: 26446359].
5. Chung E, Marghoob AA, Carrera C, Marchetti MA. Clinical and Dermoscopic Features of Cutaneous Melanoacanthoma. *JAMA Dermatol*. 2015;151(10):1129-30. [PMID: 26083708].
6. Minagawa A. Dermoscopy-pathology relationship in seborrheic keratosis. *J Dermatol*. 2017;44(5):518-524. [PMID: 28447350].
7. Papageorgiou V, Apalla Z, Sotiriou E, et al. The limitations of dermoscopy: false-positive and false-negative tumours. *J Eur Acad Dermatol Venereol*. 2018 ;32(6):879-888. [PMID: 29314288].
8. Carrera C, Segura S, Aguilera P, et al. Dermoscopic Clues for Diagnosing Melanomas That Resemble Seborrheic Keratosis. *JAMA Dermatol*. 2017;153(6):544-551. [PMID: 28355453].