

Melanoma pitfalls: When danger lies in familiarity – a series of 5 cases of clinical mimicry of common dermatoses

Armadilhas do melanoma: Quando o perigo está na familiaridade – série de cinco casos com mimetismo clínico de dermatoses comuns

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ABSTRACT

We report 5 cases of melanoma with initial clinical presentations suggestive of common dermatoses, including seborrheic keratosis, basal cell carcinoma, Bowen disease, actinic keratosis, and solar lentigo. In 4 cases, documented dermoscopy revealed findings discordant with the initial clinical impression and prompted biopsy; in 1 case, lesion evolution and recurrent bleeding prompted excision, confirming a thick nodular melanoma. This series highlights how familiar clinical patterns may promote diagnostic anchoring and delay suspicion. Lesion evolution, patient concern, total-body skin examination, systematic dermoscopy, and a low threshold for biopsy are practical strategies for reducing biases and improving early diagnosis.

Keywords: Melanoma; Dermoscopy; Diagnostic Errors

RESUMO

Relatamos cinco casos de melanoma com apresentação clínica inicial sugestiva de dermatoses comuns, incluindo queratose seborreica, carcinoma basocelular, doença de Bowen, queratose actínica e melanose solar. Em quatro casos, a dermatoscopia documentada revelou achados discordantes da hipótese inicial e motivou biópsia; em um caso, a evolução clínica e sangramentos recorrentes indicaram excisão, confirmando melanoma nodular espesso. A série destaca como padrões familiares favorecem ancoragem diagnóstica e atraso na suspeição. História evolutiva, preocupação do paciente, exame de pele total, dermatoscopia sistemática e baixo limiar para biópsia são estratégias práticas para reduzir vieses e melhorar o diagnóstico precoce.

Palavras-chave: Melanoma; Dermoscopia; Erros de Diagnóstico

Case Report

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INTRODUCTION

Melanomas may mimic lesions commonly encountered in dermatologic practice, including basal cell carcinoma (BCC), Bowen disease, actinic keratosis (AK), seborrheic keratosis, and other benign or keratinocytic dermatoses. Such mimicry may promote cognitive biases, particularly anchoring and premature diagnostic closure, by activating familiar clinical patterns and reducing the perception of risk.¹⁻³

Dermoscopy improves diagnostic accuracy for melanoma detection compared with clinical examination alone and, in practice, may serve as a strategy to interrupt intuitive pattern recognition when the initial clinical impression is discordant with the morphologic findings.⁴

In settings where dermoscopy is unavailable or has not been documented, the history of lesion evolution — corresponding to the “E” criterion of the ABCDE rule — should lower the threshold for biopsy, particularly in the presence of growth, changes in color or surface, symptoms, or bleeding.⁴⁻⁷ In addition, total-body skin examination may increase the detection of skin cancer even in patients presenting with a focal complaint, thereby reducing “tunnel vision” in the outpatient setting. Patient concern may also support clinical decision-making when the assessment is inconclusive.^{9,10}

This case series is presented for its educational value and immediate applicability to routine dermatologic practice, illustrating 5 seemingly common presentations that concealed melanoma.

CASE SERIES

This retrospective series included 5 cases treated with surgical excision. For each case, the anatomic site, clinical course, clinical pattern, dermoscopic findings, and histopathologic findings were described.

Case 1: A 70-year-old patient with Fitzpatrick skin phototype II presented with multiple homogeneous brown macules resembling solar lentigines or pigmented AK, with no lesion generally standing out from the others. Dermoscopy of the left temporal region revealed features of melanocytic atypia, raising suspicion and prompting diagnostic biopsy. Histopathology confirmed lentigo maligna (Figure 1).

Case 2: A 60-year-old patient with Fitzpatrick skin phototype III presented with a lesion on the left thigh that had been present for more than 5 years, with frequent bleeding secondary to manipulation. Examination revealed a large verrucous lesion clinically consistent with seborrheic keratosis; dermoscopy was not documented. Excision was indicated because of the lesion's size, growth over time, and the patient's informed preference. Histopathology confirmed nodular melanoma with a nevoid pattern and a Breslow thickness of 4 mm. The absence of documented dermoscopy in this case was deliberately retained in the analysis as part of the phenomenon under investigation, reinforcing the need for a low tolerance for diagnostic uncertainty when evaluating evolving lesions (Figure 2).

Case 3: A 62-year-old patient with Fitzpatrick skin phototype III presented with a mildly scaly erythematous lesion on the left upper extremity that had appeared 6 months earlier, with an initial clinical appearance suggestive of Bowen disease or superficial BCC. Documented dermoscopy revealed vascular patterns (polymorphous vessels and structureless areas) inconsistent with an isolated keratosis, prompting diagnostic biopsy. Histopathology confirmed superficial spreading melanoma *in situ* (Figure 3).

Case 4: A 48-year-old patient with Fitzpatrick skin phototype II presented with an erythematous, pearly nodule in the left preauricular region that had developed several months earlier and was clinically consistent with BCC. Dermoscopy was documented and raised suspicion for a melanocytic/atypical lesion, prompting excisional rather than incisional biopsy, as would have

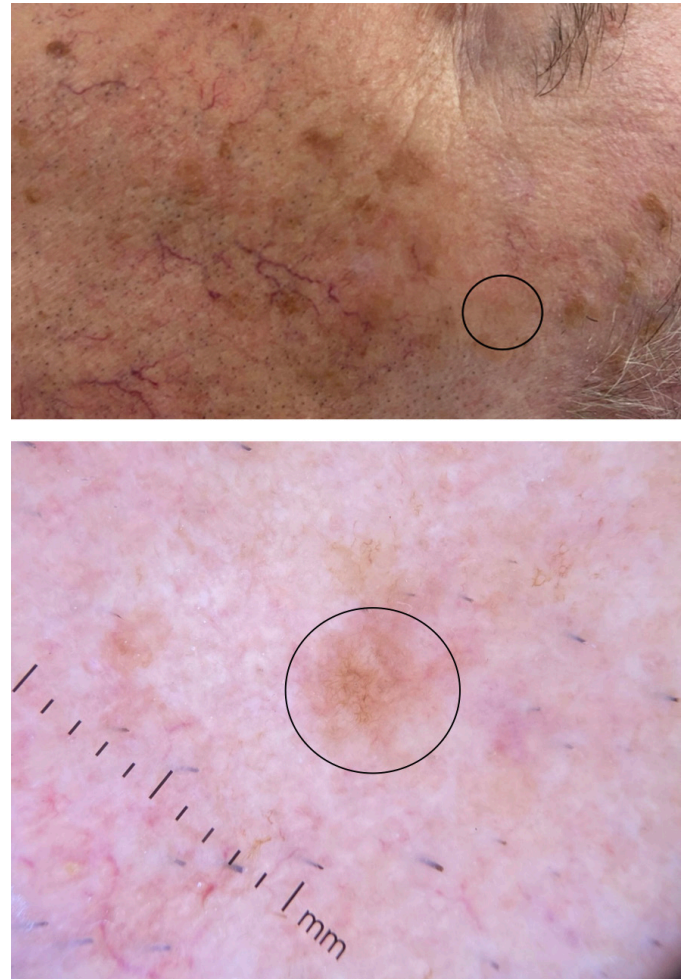


FIGURE 1. Pigmented macule in the left temporal region. Dermoscopy shows asymmetric follicular pigmentation and linear projections emerging from follicular openings. The black circle highlights asymmetric follicular pigmentation and rhomboidal structures.

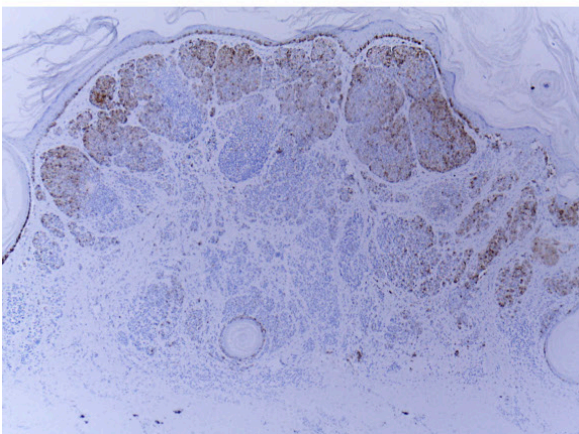
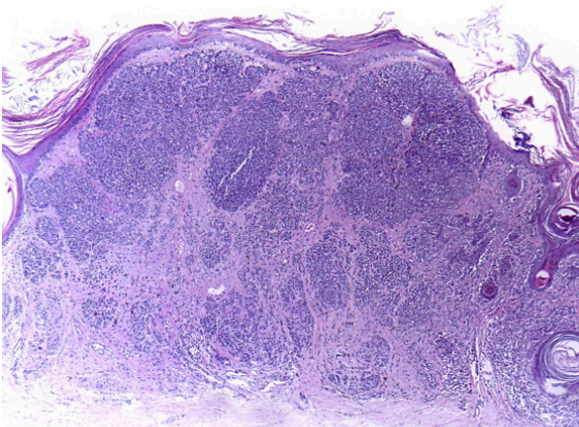


FIGURE 2. A 3-cm hyperkeratotic verrucous lesion on the left thigh. Histopathology shows a melanocytic proliferation with a papillomatous growth pattern among pseudohorn cysts, hyperkeratosis, well-demarcated borders, and an exophytic appearance. Atypical epithelioid melanocytes are located at the dermoepidermal junction, while the lesional cells decrease in size in the dermis, mimicking the maturation with depth observed in melanocytic nevi. Immunohistochemical staining for HMB-45 ($\times 40$) demonstrates maturation with depth mimicking a melanocytic nevus.

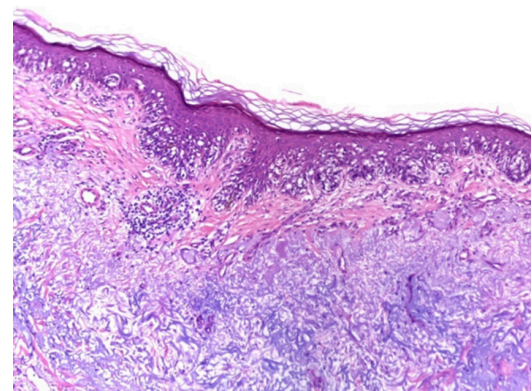
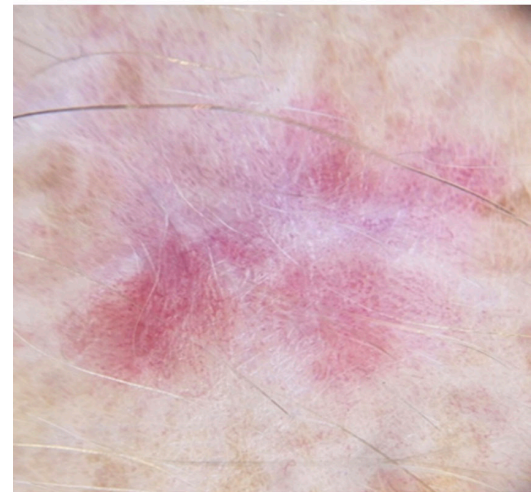


FIGURE 3. Mildly scaly erythematous plaque measuring approximately 1.5 cm on the left forearm (black circle). Dermoscopy shows shiny white structures and an atypical vascular pattern. Histopathology shows an atypical melanocytic proliferation predominantly involving the junction, with lentiginous growth along the basal layer and architectural disorder (asymmetric/heterogeneous distribution), with foci suggestive of pagetoid spread (isolated suprabasal melanocytes).

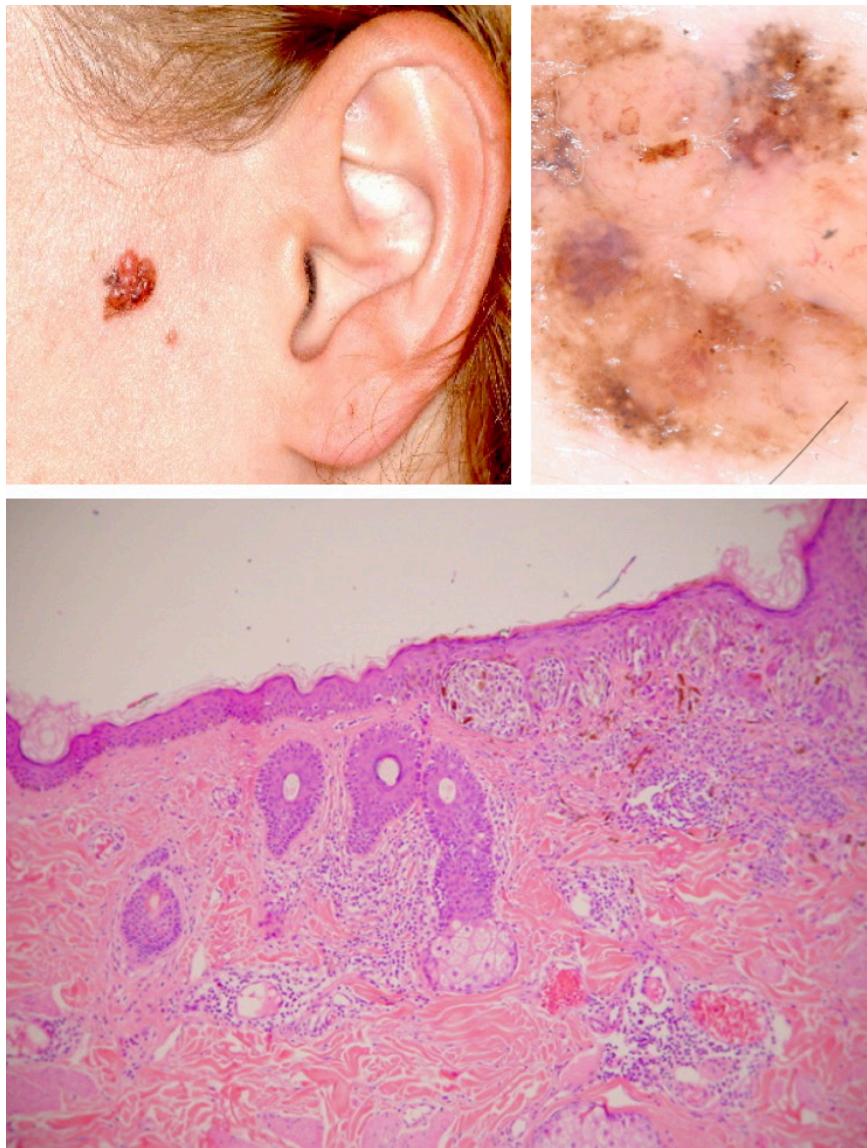


FIGURE 4. Erythematous papule measuring approximately 1 cm in the left preauricular region, with a pearly appearance. Dermoscopy shows atypical globules and network, a blue-white veil, and a milky-pink background. Histopathology shows a dense, nodular/expansile, asymmetric, and poorly circumscribed cellular proliferation involving predominantly the superficial and mid dermis, composed of atypical cells arranged in poorly defined sheets/nests, with scant or absent melanin pigment (consistent with a hypomelanotic pattern).

been performed for suspected BCC. Histopathology confirmed hypomelanotic nodular melanoma with a Breslow thickness of 2.3 mm (Figure 4).

Case 5: A 68-year-old patient with Fitzpatrick skin phototype II presented with an erythematous keratotic lesion on the right forearm, with an initial clinical appearance suggestive of Bowen disease or AK. Documented dermoscopy revealed vascular patterns inconsistent with this diagnosis, prompting diagnostic biopsy. Histopathology confirmed superficial spreading melanoma *in situ* (Figure 5).

DISCUSSION

The 5 cases presented illustrate a common diagnostic mechanism: clinical presentations sufficiently familiar to promote anchoring on far more prevalent diagnoses, despite ultimately representing melanoma. Although melanomas mimicking nonmelanocytic lesions account for only approximately 1.4% of cases at tertiary referral centers, their clinical relevance is disproportionate because these presentations are associated with greater Breslow thickness, a higher frequency of micrometastases, and greater sentinel lymph node positivity, reflecting the diagnostic delay inherent in clinical mimicry.¹

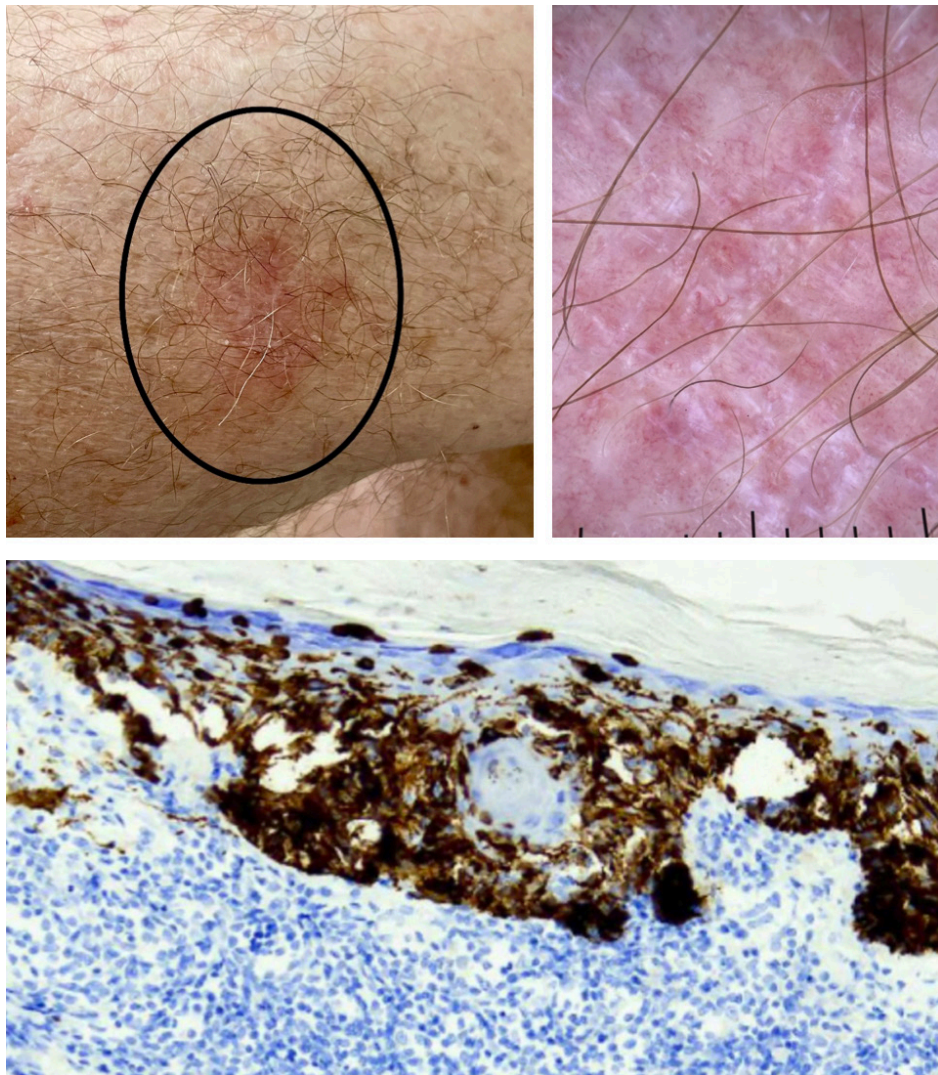


FIGURE 5. Mildly scaly erythematous plaque measuring approximately 1.2 cm on the left arm. Dermoscopy shows an erythematous background, shiny white structures, and atypical vessels. Histopathology confirmed the diagnosis of lentigo maligna melanoma in situ.

Rather than simply lacking signs of malignancy, these presentations exploit cognitive shortcuts inherent in diagnostic reasoning, particularly intuitive pattern recognition, thereby promoting biases such as anchoring and premature diagnostic closure. Although these mechanisms are fundamental to everyday medical practice, they become vulnerable when malignant lesions reproduce features typical of far more prevalent dermatoses, increasing the risk of diagnostic delay.^{2,3}

Case 2 exemplifies this phenomenon. A verrucous lesion clinically consistent with seborrheic keratosis proved to be nodular melanoma with a Breslow thickness of 4 mm. In this context, the absence of documented dermoscopy highlights an important limitation of the initial assessment and reinforces that evolving lesions, even when apparently benign, should lower — rather than raise — the threshold for biopsy.

Dermoscopy represents one of the main strategies for mitigating this process of diagnostic anchoring. By replacing the initial clinical impression with a systematic assessment of morphologic criteria, dermoscopy reduces exclusive reliance on intuitive pattern recognition and significantly improves diagnostic accuracy. A systematic review including more than 23,000 lesions demonstrated a significant increase in sensitivity and specificity for melanoma diagnosis when dermoscopy was added to clinical examination, simultaneously reducing missed melanomas and unnecessary excisions.⁴ In the present series, this benefit was evident in 4 of the 5 cases, in which documented dermoscopy altered the initial diagnostic impression by revealing structures incompatible with Bowen disease, AK, or BCC.

In addition to improving diagnostic accuracy, dermoscopy assists in identifying particularly challenging melanoma variants.

Melanomas mimicking seborrheic keratosis frequently exhibit structural asymmetry, atypical vessels, and absence of classic keratotic criteria, whereas amelanotic or hypomelanotic melanomas may display a pink background associated with polymorphous vessels, mimicking BCC, keratinocytic tumors, or inflammatory dermatoses.^{5,6} These findings reinforce that dermoscopy should be used not only to confirm the initial clinical impression but, more importantly, to identify features that contradict it.

However, dermoscopy does not replace clinical history. Lesion evolution, represented by the “E” criterion of the ABCDE rule, was incorporated into the clinical assessment criteria for melanoma specifically to account for changes in size, shape, color, surface, or symptoms, including bleeding and tenderness.⁷ Case 2 illustrates this principle: despite the absence of documented dermoscopy, progressive growth and recurrent episodes of bleeding prompted excision, allowing the definitive diagnosis to be established.

Diagnostic delay results from the interaction of patient- and physician-related factors. Several patients delay seeking medical attention after noticing changes in a lesion, while empirical treatments, low clinical suspicion, and delayed referral may also contribute to diagnosis at more advanced stages.⁸ In this setting, patient concern should be considered an additional clinical finding, especially when associated with evolving lesions or atypical features.⁹

Another relevant aspect underscored by this series is the importance of total-body skin examination. In addition to redu-

cing so-called “tunnel vision” focused exclusively on the presenting complaint, this practice increases the detection of additional skin cancers, including melanomas unrelated to the initial reason for consultation, representing a simple, high-impact strategy in dermatologic practice.¹⁰

The cases presented highlight 3 practical recommendations for routine dermatologic practice: (1) systematically incorporate and document dermoscopy, particularly for apparently commonplace lesions that are atypical or evolving; (2) maintain a low threshold for biopsy when there is discordance among the clinical impression, lesion evolution, and dermoscopic findings; and (3) systematically integrate lesion evolution, patient concern, and total-body skin examination into diagnostic reasoning.

The principal challenge posed by melanoma mimics is not the absence of signs of malignancy, but their ability to reproduce clinical patterns that are highly familiar to dermatologists. Familiarity, therefore, should not reduce diagnostic vigilance; rather, it should prompt more careful evaluation of evolving lesions or those with discordant findings. Integrating the clinical history, documented dermoscopy, total-body skin examination, and a low threshold for histopathologic confirmation provides a practical strategy for reducing cognitive biases, minimizing diagnostic delays, and improving melanoma prognosis. ●

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