Subungual Acral Lentiginous Melanoma of the Fifth Toe

Dimitri Luz Felipe da Silva^a Jaqueline Machado Toribio^a Maria Leticia Cintra^b
Renata Ferreira Magalhaes^a Emerson Henrique Padoveze^a

^aDermatology, University of Campinas, Campinas, Brazil; ^bPathology, University of Campinas, Campinas, Brazil

Established Facts

- Most common sites for subungual melanoma are first hand finger and hallux.
- Functional surgery is well established for cases of subungual nail melanoma in situ and minimally invasive melanoma (Breslow <0.05 mm).

Novel Insights

- There is no consensus to the approach of invasive subungual nail melanoma.
- En bloc excision for subungual nail melanoma can be an option for excisional biopsy.

Keywords

Melanoma · Nail apparatus amputation · Dermatoscopy · Surgery in dermatological practice

for an extensive lesion. The patient is followed up in an outpatient clinic setting without lymph node or distance metastasis.

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Abstract

Acral lentiginous melanoma is rare in Caucasians, but it is the most common among individuals with a higher phototype, such as Blacks and Asians. It is usually presented under the palmoplantar and/or nail region. Subungual melanoma is an acral lentiginous melanoma subtype in which the initial diagnostic approach does not have a consensus. We report a case of a woman with tumoral melanocytic lesion on the fifth toenail, of insidious growth, where the amputation of the nail apparatus technique was used as an excisional biopsy

Introduction

Subungual nail melanoma (SUM) is an acral lentiginous melanoma subtype, whose incidence among the total cases of melanoma ranges from 0.7 to 3.5% [1]. It mainly affects patients from the fifth decade of life [1] but can also be observed in children [2]. Trauma appears to be a predisposing factor and the hallux is the most common site of this neoplasm [3]. Striated melanonychia is

Fig. 1. Fifth right toe with tumoral melanocytic lesion on the whole nail bed.

Fig. 2. Nail plate dermoscopy showing Hutchinson sign, blue-white veil, and multiple brown dots.

the initial presentation, and presence of ulceration, Hutchinson's sign, or plaque dystrophy highly suggest the diagnosis [2], which should be confirmed by the gold standard: histopathology. There are some techniques for the biopsy of the nail matrix, such as lateral longitudinal excision, paramedian excision, 3-mm punch, tangential excision, or en bloc excision of the nail [3].

Case Report/Case Presentation

The patient was a female patient, 49 years old, phototype V, with a history of finger injury 2 years ago. Dermatological examination of the fifth right toe showed absence of nail plate and presence of a blackened macule affecting the whole bed, hyponychium, and proximal nail fold (Fig. 1). Dermoscopy showed absence of nail plate as well as presence of bluish veil in the center of the lesion and pseudopods (Fig. 2). Because the clinical examination was highly suggestive of melanoma, we opted for en bloc excision of the nail apparatus. The margins were marked using the dermoscopy. Anesthesia was made through bilateral distal digital nerve block with lidocaine 2% without vasoconstrictor, and continuous suture was used for hemostatic purposes.

The anatomopathological examination concluded that it was an ulcerated acral lentiginous melanoma with Clark IV and Breslow 1.3 mm extension, presenting 2 mitoses per field and perineural invasion, with poor margins (Fig. 3). The case was discussed together with the oncology surgery team, where sentinel node screening and finger disarticulation were indicated. The metastasis search performed with the laboratory and imaging exams was negative and the material from amputation did not present bone involvement. The patient was followed up at the melanoma outpatient clinic for 1 year without recurrence of disease. The patient has given her written informed consent to publish her case and images.

Discussion/Conclusion

SUM often originates in the matrix and may involve the periungual region, nail bed, and hyponychium. The most affected fingers are the first hand finger and hallux, followed by the second and third toes [4]. Involvement of the fifth pod dactyl is rare. Other clinical signs suggesting nail melanoma are proximal enlargement of melanonychia and ungual dystrophy [5]. The growth of melanoma tends to be slow and the nail plate makes the early detection of this neoplasia difficult for changing the light reflectance. In our case, in spite of the patient informing that her lesion presented a recent evolution, we consider that this condition must have been ignored or underestimated, since growth and aggressiveness of this magnitude in such a short time is very rare. Early diagnosis of nail melanoma is still a challenge. Its clinical

Fig. 3. Melanoma infiltrating the whole papillar dermis and part of the reticular dermis. Hematoxilin and eosin, 40×.

presentation may be suggestive, but it is not pathognomonic, since striated melanonychia can also be observed in benign conditions resulting from melanocytic activation, such as hypermelanosis, or melanocytic proliferation, such as lentigo or nevus [4]. In those cases, intraoperative dermoscopy delivers high sensitivity and specificity on the examination of pigmented lesions, since it is done directly in the matrix, after plaque removal [6].

For those cases of longitudinal melanonychia in which biopsy is indicated, there are some techniques, such as matrix punch biopsy, matrix shave (tangential) biopsy, lateral longitudinal excision, midline/paramedian excision, or en bloc excision of all nail tissues [7].

In our case, in front of an anxious patient with a lesion really suggestive of SUM by the ABCDF rule [8] (A: age 49, phototype V; B: black-colored bands of width thicker than 3 mm; C: change of nail morphology; D: one finger affected by the pigment; E: extension of the pigment to the hyponychium and proximal ungual fold), we opted for en bloc excision of all nail tissue. This technique allows the pathologist to analyze the whole material. Ohn et al. [9] reported a case where the diagnosis of SUM was done only by en bloc excision of the lesion, previously biopsied by lateral longitudinal excision.

Due to the difficulty in the early diagnosis, nail melanoma has a reserved prognosis and low survival rate when

compared to other forms of melanoma. This often makes the recommended treatment more aggressive. Currently, the use of functional surgery, i.e., preserving the distal phalanx, is well established for cases of in situ and minimally invasive melanoma (Breslow <0.05 mm); however, in the case of thicker tumors, this conduct is still controversial [5]. Therefore, the conduct of the distal phalanx amputation was taken in conjunction with the team of oncologic surgery, and no bone invasion was found in the amputated material.

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Statement of Ethics

The subject has given her written informed consent to publish her case (including publication of images).

Disclosure Statement

The authors have no conflicts of interest relevant to this publication to declare.

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Author Contributions

Dimitri Luz Felipe da Silva: substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; and drafting the work or revising it critically for important intellectual content; and final approval of the version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Jaqueline Machado Toribio: substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; and drafting the work or revising it critically for important intellectual content. Maria Leticia Cintra: drafting the work or revising it critically for important intellectual content; and final approval of the version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Renata Ferreira Magalhaes: drafting the work or revising it critically for important intellectual content; and final

approval of the version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Emerson Henrique Padoveze: substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for

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