

Spitz nevus on the sole of the foot presenting with transepidermal elimination

Hiromi Kobayashi¹, Kyosuke Oishi¹, Miho Miyake¹, Chihiro Nishijima¹, Atsuhiko Kawashima², Hiroto Kobayashi³, Makoto Inaoki¹

1 Department of Dermatology, National Hospital Organization Kanazawa Medical Center, Kanazawa, Japan

2 Department of Laboratory Medicine, National Hospital Organization Kanazawa Medical Center, Kanazawa, Japan

3 Kobayashi Dermatological Clinic, Kanazawa, Japan

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Corresponding author: Makoto Inaoki, M.D., Department of Dermatology, National Hospital Organization Kanazawa Medical Center, 1-1 Shimoishibiki-machi, Kanazawa, Ishikawa 920-8650, Japan. Tel. 81.76.262.4161; Fax. 81.76.222.2758. E-mail: inaoki-m@kinbyou.hosp.go.jp

ABSTRACT A 10-year-old Japanese girl presented with a rhomboid-shaped brown macule, 4x3 mm in size, on the sole of the right foot. Dermoscopic examination revealed a number of black dots and globules on the ridges of the skin, marking an area of symmetrical brown pigmentation. On the periphery, a streak-like arrangement of black dots/globules on the brown pigmentation was observed along the ridges, simulating a “starburst” pattern. The lesion was excised and histological examination showed a symmetrical wedge-shaped compound melanocytic lesion that consisted of junctional and intradermal nests of a mixture of large spindle and epithelioid cells. None of the cells were atypical, and maturation of the cells with increasing depth was observed. From these findings, a diagnosis of Spitz nevus was made. Transepidermal elimination of nevus cell nests was observed and there were small groups of degenerated melanin-laden cells in the cornified layer. Masson Fontana stain revealed fine melanin deposits in the nevus cells of the junctional and intradermal nests, as well as heavy melanin deposits in the small groups of degenerated cells in the cornified layer. The distribution of melanin may contribute to a unique dermoscopic finding in this case.

Case presentation

A 10-year-old Japanese girl presented with an 8-month history of pigmented lesion on the sole of the right foot. Examination showed a rhomboid-shaped brown macule with keratotic scale, 4x3 mm in size, on the lateral center side of the sole (Figure 1). Dermoscopic examination revealed that a number of

black dots and globules were evenly distributed on the ridges of the skin, marking an area of symmetrical brown pigmentation (Figure 2). On the periphery, a streak-like arrangement of black dots/globules on the brown pigmentation was observed along the ridges, simulating a “starburst” pattern.

The lesion was excised under the diagnosis of atypical melanocytic nevus. Histological examination showed epider-



Figure 1. Clinical image. There is a brown macule on the lateral side of the sole of the right foot. [Copyright: ©2014 Kobayashi et al.]

mal hyperplasia and a symmetrical, wedge-shaped compound melanocytic lesion (Figure 3A). Junctional and intradermal nests were well circumscribed, and consisted of a mixture of large spindle and epithelioid cells. None of the nevus cells were atypical, and maturation of the cells with increasing depth was observed (Figure 3B). Upward epidermal spread of a single nevus cell or small groups of cells was absent. From these findings a diagnosis of Spitz nevus was made. Transepidermal elimination of nevus cell nests was seen and there were small groups of degenerated melanin-laden cells in the cornified layer (Figure 3C). The nevus cells, including the degenerated cells in the cornified layer, were S-100 protein positive. Masson Fontana stain revealed fine melanin deposits in the nevus cells of the junctional and intradermal nests, as well as heavy melanin deposits in the small groups of degenerated cells in the cornified layer (Figure 3D).

Conclusion

Spitz nevus, also known as spindle and epithelioid cell nevus, is found primarily on the lower extremities, followed by the trunk and upper extremities. A report on Japanese patients demonstrated that Spitz nevus on glabrous skin represents 2% of all Spitz nevi [1]. Thus, little is known about the dermoscopic findings of Spitz nevus on the plantar aspect due to its rarity.

Dermoscopic examination of a pigmented Spitz nevus on the sole of the foot by Hatta et al. [2] revealed a central black astructural area, large peripheral blue-black globules, and streaks along the ridges of the skin marking simulating starburst pattern [2]. The dermoscopic finding in the present case of black dots and globules on the ridges in the peripheral area is similar to the finding of that previous published case [2]. However, the number of black dots and globules in the area of diffuse brown pigmentation in the present case are very different from the dermoscopic finding of that previous case [2].

In the present case, fine melanin deposits in the junctional and intradermal nests may correspond to the dermoscopic

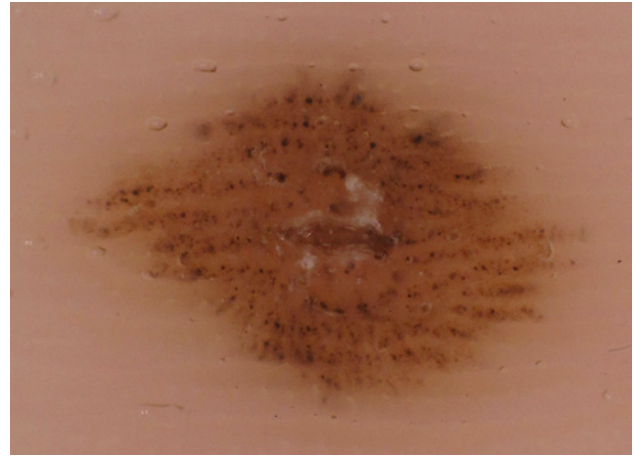


Figure 2. Dermoscopy shows a number of black dots and globules on the ridges of the skin, marking an area of symmetrical brown pigmentation. On the periphery, a streak-like arrangement of black dots/globules on the brown pigmentation simulate a starburst pattern. [Copyright: ©2014 Kobayashi et al.]

finding of brown pigmentation, and heavy melanin deposits in the groups of degenerated cells in the cornified layer may correspond to the black dots on dermoscopy. These two components of melanin deposits constitute the dermoscopic pattern found in the present case. The small groups of degenerated melanin-laden cells in the cornified layer may come from the junctional nevus cell nests through transepidermal elimination. Transepidermal elimination is infrequently observed in Spitz nevus [3,4], but this phenomenon may provide a unique pattern on dermoscopy, as seen in the present case.

Involution as the natural evolution of Spitz nevi on the face, extremities, and trunk has been reported [5]. In the regression of pigmented skin lesions such as melanoma, fibrosis, melanosis, and numerous telangiectasis are histopathologically observed [6], but the combination of these features is not found in Spitz nevi. The mechanism of involution of Spitz nevi remains unclear. However, the transepidermal elimination observed in the present case may be related to this mechanism.

Dermoscopy is a useful tool for differentiating early melanomas from benign melanocytic nevi on acral volar skin. Parallel ridge pattern is a highly specific dermoscopic pattern of malignant melanoma, including melanoma in situ on acral volar skin [7]. An irregular diffuse pigmentation pattern is also highly specific to malignant melanoma on acral volar skin [7]. In contrast, a parallel furrow pattern is the most prevalent pattern in melanocytic nevi on acral volar skin [7].

In the present case as well as in the case of Hatta et al. [2], dermoscopic examination showed dominant pigmentation on the ridges. Thus, pigmented Spitz nevus on the sole of the foot may be a differential diagnosis of malignant melanocytic lesion. However, dermoscopic patterns of the present case, including the equal and symmetrical distribution of black dots and globules in the area of the brown pigmentation, are

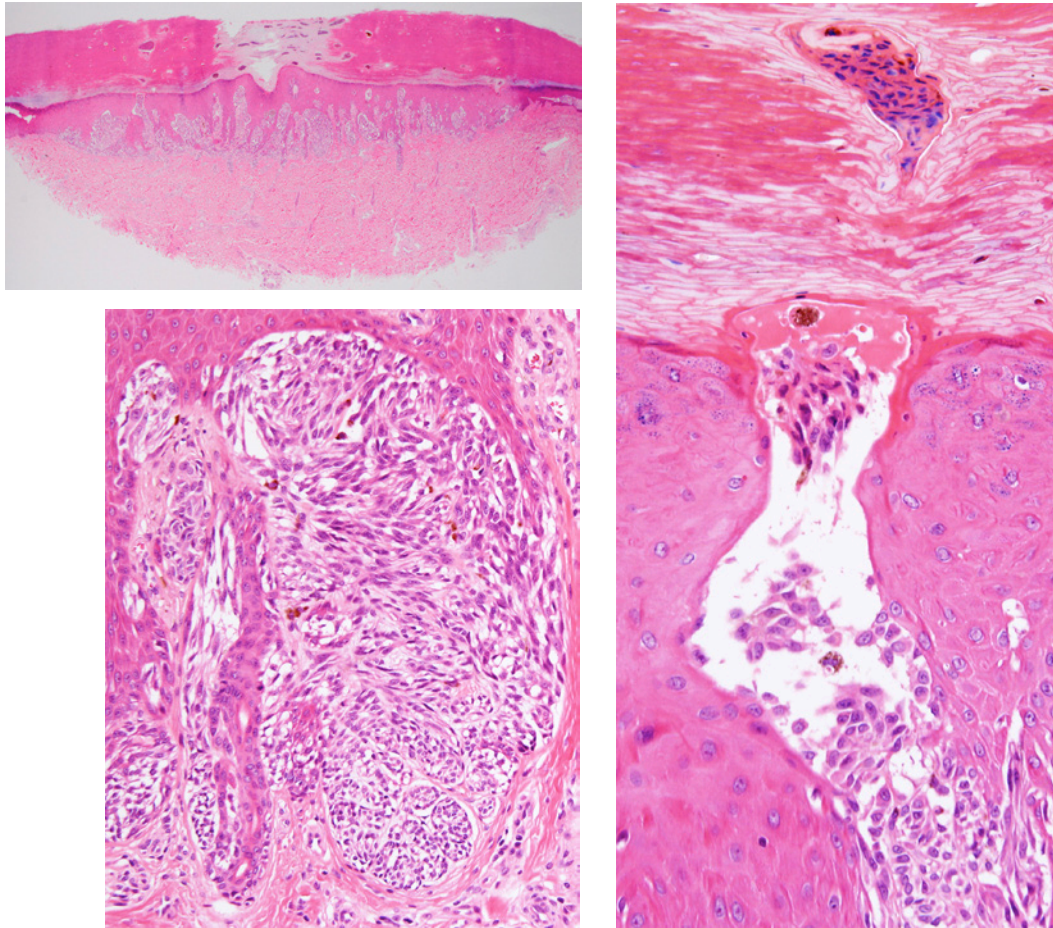


Figure 3. Histopathological features: (A) Epidermal hyperplasia and a symmetrical, wedge-shaped compound melanocytic lesion are seen (hematoxylin & eosin, 2x). (B) The junctional and intradermal nests by an eccrine duct consist of a mixture of large spindle and epithelioid cells, but none of them was atypical. Maturation of the cells with increasing

depth is observed (hematoxylin & eosin, 100x). (C) A transepidermal elimination of nevus cell nests and a small group of degenerated melanin-laden cells over the elimination in the cornified layer are seen (hematoxylin & eosin, 150x). (D) Fine melanin deposits in the nevus cells of the junctional and intradermal nests, as well as heavy melanin deposits in the small groups of degenerated nevus cells in the cornified layer, are seen (Masson Fontana, 4x). [Copyright: ©2014 Kobayashi et al.]

different from the patterns of malignant melanoma on acral volar skin. The dermoscopic pattern of the present case may be novel, and this report may help in the diagnosis of melanocytic lesions on acral volar skin.

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