

# Blue Nevus with a Dermoscopic Appearance of Peripheral Streaks with Branches

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## Key Words

Blue nevus · Dermoscopy · Peripheral streaks · Differential diagnosis · Spitz nevus · Malignant melanoma

## Abstract

Blue nevi are dermal dendritic melanocytic proliferations presenting as papules, nodules or plaques of blue, blue-gray or blue-brown color. Dermoscopic appearance commonly shows global patterns as homogeneous mono/dichromatic pigmentation and multichromatic pigmentation. Here, we report the case of a blue nevus with the dermoscopic feature of peripheral streaks with branches. With histopathologic deep sections, we confirmed that dermal dendritic melanocytes were distributed in the direction of the streaks. We emphasize that streaks are a rare but important sign of blue nevi.

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## Introduction

Blue nevi are benign dermal dendritic melanocytic proliferations presenting as papules, nodules or plaques of blue, blue-gray or blue-brown color. The dermoscopic appearance of blue nevi commonly shows global patterns as homogeneous mono/dichromatic pigmentation and multichromatic pigmentation [1]. Here, we report the case of a 46-year-old Japanese woman with a blue nevus with peripheral streaks with branches.

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## Case Report

A 46-year-old Japanese woman came to us with an asymptomatic pigmented plaque on her left arm. The patient did not remember its onset. She was otherwise healthy. A physical examination revealed an asymptomatic blue-blackish plaque 2 mm in size on the left upper extremity (fig. 1a). Dermoscopy showed a central homogeneous dark blue-black pigmentation and peripheral blue-brownish streaks with branches (arrow) (fig. 1b). We performed a whole excision as biopsy, because we suspected the plaque to be a malignant melanoma. The specimen from the central lesion showed spindle cells with melanin pigments in the upper dermis, but not in the epidermis (fig. 1c). A deep section of the peripheral lesion identified focally aggregated and isolated spindle cells with melanin pigments in the upper dermis (fig. 1d, e).

With the deep sections, we confirmed that the dermal dendritic melanocytes were distributed in the direction of the streaks. Using dermoscopy, we confirmed peripheral branching streaks and diagnosed the blue-blackish plaque as blue nevus with histopathologic assessment.

## Discussion

The clinical differential diagnosis of blue nevi usually includes nodular melanomas, cutaneous metastases of melanomas, pigmented basal cell carcinomas and Spitz nevi [1]. The dermoscopic melanoma-specific criteria include a combination of atypical pigment network, irregular dots/globules, irregular streaks, irregular pigmentation, regression structures, blue-whitish veil, and irregular vascular pattern [2]. Dermoscopic features in Spitz nevi mainly include starburst, globular, atypical and/or multicomponent patterns [3]. The typical starburst pattern is characterized by numerous streaks distributed regularly at the periphery [3].

Di Cesare et al. [1] summarized the dermatologic features in 95 cases of blue nevi. They showed global patterns as homogeneous mono/dichromatic pigmentation (84.2%) and multichromatic pigmentation (15.8%), and local patterns as whitish scar-like areas (21.0%), dots/globules (20.0%), vascular pattern (12.6%), peripheral streaks (4.2%), and network-like pattern (1.1%). Shiga et al. [4] described a case of blue nevus with peripheral streaks. The lesion reported by Shiga et al. [4] showed homogeneous blue pigmentation with many irregular streaks, but branching appearance was absent.

Recently, Yonei et al. [5] reported a case of common blue nevus with satellite lesions. Their case required a differential diagnosis from melanoma due to several 1- to 2-mm guttate macular satellite lesions [5]. They suggested that blue nevus should be considered as a differential diagnosis when a locally disseminating malignant melanoma is suspected [5].

The dermoscopic features of peripheral streaks with branches were coincident with the distribution of focally aggregated and isolated spindle cells with melanin pigments in the upper dermis. The precise pathogenesis of blue nevi is still unclear, but it is speculated that they may arise from dermal melanocytes derived from the neural crest in the fetus [6]. We speculate that the peripheral streaks with branches in the blue nevus may reflect a focal proliferative direction after localization of dermal melanocytes.

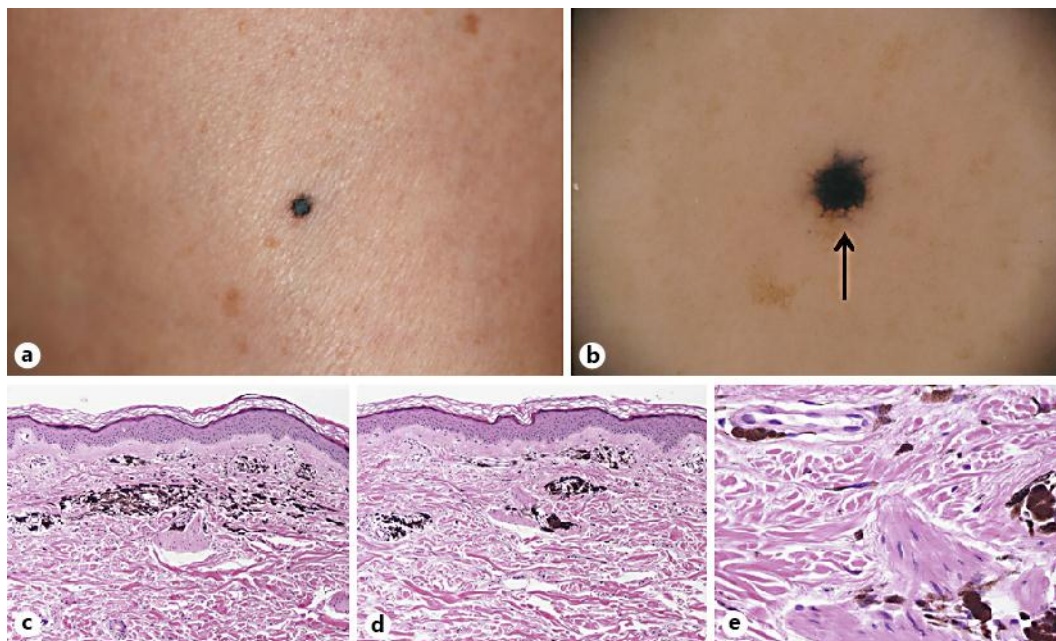
In summary, we reported a case of blue nevus with the dermoscopic feature of peripheral streaks with branches. We emphasize that streaks are a rare but important sign of blue nevi for the differential diagnosis of Spitz nevi and malignant melanomas.

### Disclosure Statement

The authors report that they have no conflicts of interest.

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**Fig. 1.** **a** Clinical appearance of an asymptomatic blue-blackish plaque 2 mm in size on the left upper extremity. **b** Dermoscopy showed a homogeneous dark blue-black pigmentation at the center and peripheral blue-brownish streaks with branches (arrow) at the periphery. **c** The histopathologic specimen from the central lesion showed spindle cells with melanin pigments in the upper dermis, but not in the epidermis (hematoxylin and eosin stain, original magnification  $\times 100$ ). **d, e** The histopathologic specimen from the peripheral lesion showed focally aggregated and isolated spindle cells with melanin pigments in the upper dermis [hematoxylin and eosin stain, original magnification,  $\times 100$  (**d**),  $\times 400$  (**e**)]. With the deep sections, we confirmed that the dermal dendritic melanocytes were distributed in the direction of the streaks.