

## A case of proliferative nodule arising within blue nevus

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### Abstract

Blue nevi are a heterogeneous group of lesions that can display a variety of different clinicopathological characteristics. Although attempts are made to classify each lesion into defined subtypes, there can be overlap between the subtypes. The clinical, dermoscopic and histopathologic features of a case of proliferative nodule arising within blue nevus is discussed.

Running title: Blue nevi are an heterogeneous group of melanocytic lesions blue tinctorial properties. Proliferative nodules are rare benign lesions often present at birth as a component of a large congenital melanocytic nevi, congenital or acquired nevi. We first report a case of proliferative nodule arising within blue nevus. *Clin Ter* 2022; 173 (3):214-216 doi: 10.7417/CT.2022.2420

**Key words:** Proliferative nodule, Blue nevus, Cutaneous, Dendritic pigmented melanocyte

A 14-year-old Caucasian girl presented an asymptomatic dark lesion on dorsum of left foot that had been present since pediatric age. Medical assistance was sought due to recent increase in size and emergence of nodule within the lesion. Physical examination revealed a well-demarcated dark-blue nodule surrounded by disomogeneous blue pigmentation, symmetrical and regular border, 0.7 cm maximum diameter, clinically suggestive of blue-nevus (Fig. 1 a). Dermoscopic examination of the lesion revealed a structureless, uniform pigment pattern of dark blue color and a slightly irregular surface. In absence of any other dermoscopic structures a diagnosis of blue nevus was established (Fig. 1 b).

Considering atypical features of the lesion a surgical excision was performed. The histological examination showed a proliferation of spindle shaped and dendritic pigmented melanocytes in the upper dermis associated with a nodular cluster of somewhat larger and often more pigmented epithelioid cells, without nuclear atypia, and mitotic activity (Fig 2 a,b,c,d,e,f). There are many pigmented macrophages between the epithelioid cells. No necrosis foci and mitotic activity was noted and the proliferative index, evaluated with Ki67 immunohistochemical staining for Ki67, was less than 1%. Arguably there was no connection between the two melanocytic proliferations.

Blue nevi derive their name from the characteristic blue clinical and dermoscopic coloration. Despite the most common forms of blue nevi are dendritic blue nevus (DBN) and cellular blue nevus (CBN), several subtypes have been described (1).

CBN differs from DBN for its larger size with maximal dimensions of several centimeters and by pigmented melanocytes in the dermis, grouped spindle cells containing little or none melanin that can also penetrate the subcutaneous layer as well-defined islands, intense pigmentation and growing pattern with subcutaneous infiltration. (1).

Proliferative nodules are reported within the contest of congenital melanocytic lesions (2) but not in blue nevus and they could mimic cutaneous melanoma (3). Literature reports cases of CBN -associated melanoma (4).

They often occur in older individuals, especially on the scalp (5) usually represented by a multinodular appearance with progressive growth, size >2 cm and widespread necrosis. The difference between cellular nodule and melanoma arising from nevus are lack of high-grade uniform cellular atypia, necrosis within the nodule and pagetoid spread, rarity of mitoses, evidence of maturation of the cells in the nodule and the adjacent nevus cells and no destructive expansile growth (2,4).

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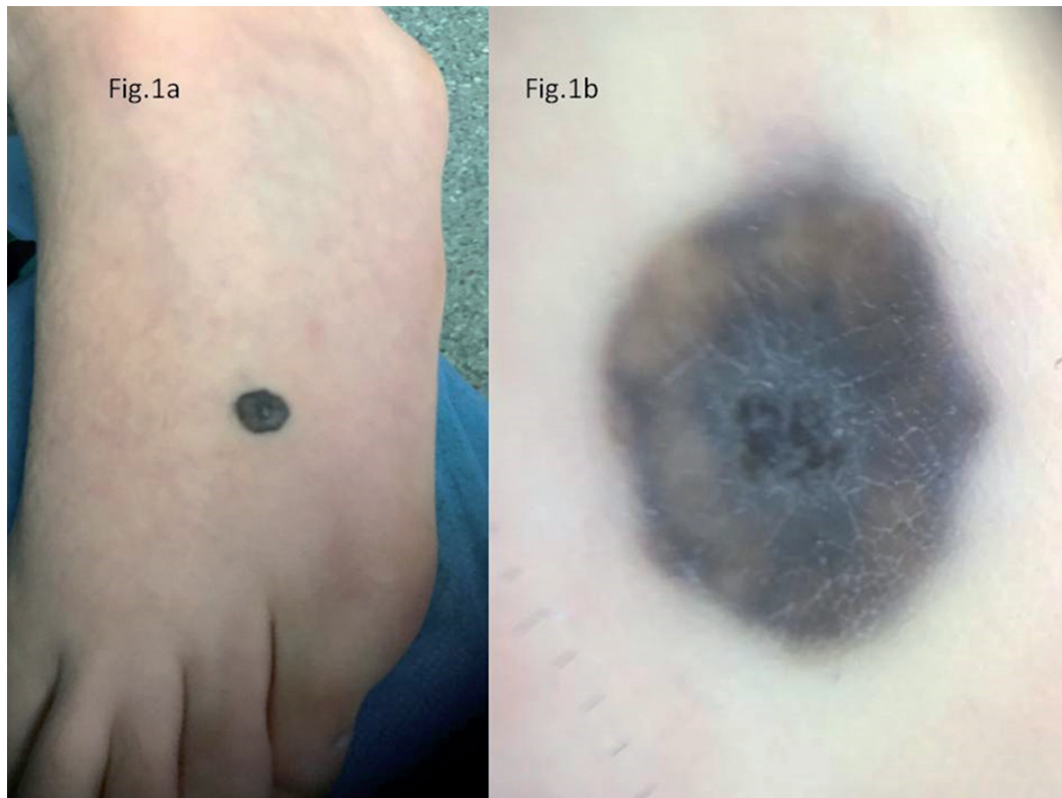


Fig. 1 a,b] (a)A well-demarcated dark-blue nodule surrounded by naevus blue (b)20 X dermoscopic examination.

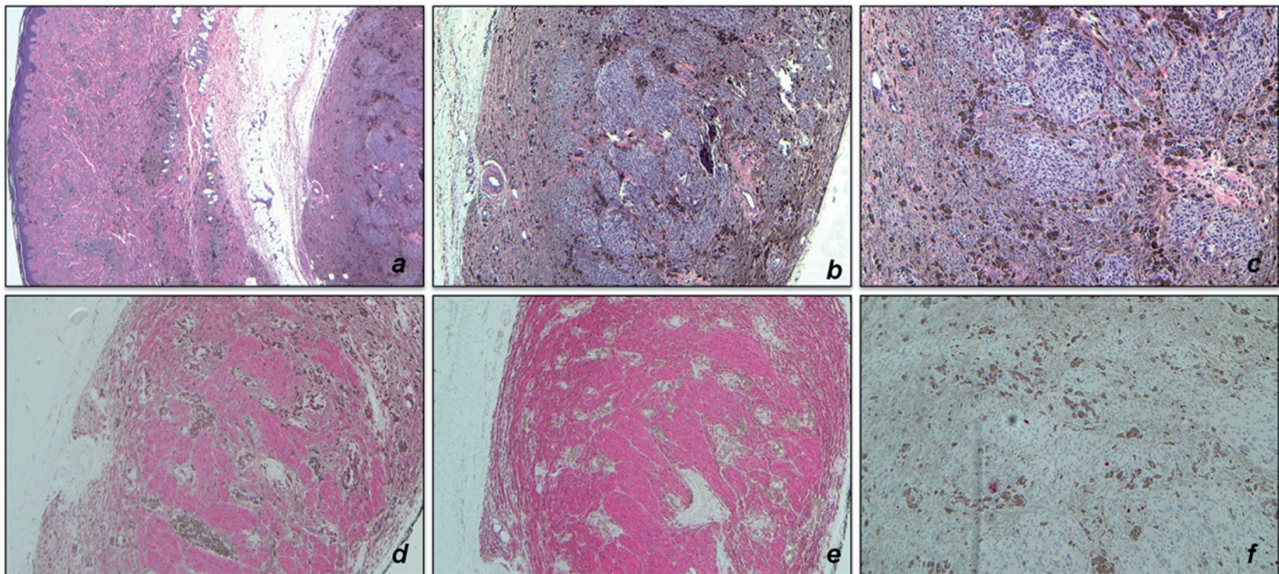


Fig. 2 a,b,c,d,e,f (a) Dendritic blue nevus in the upper dermis (left) and cellular melanocytic nodule in lower dermis. There is no connection between the two lesions (EE 2,5x). (b-c) A nodule composed of melanocytes with epithelioid cells and with "organoid" pattern in the subcutaneous fat (EE 5x), without evidence of mitoses (EE 10x). (d-e) Melanotic cells show diffuse positivity at immunohistochemical analysis for S100 protein and HMB45 (5x). (f) Proliferation Index (Ki67 MIB1) <1% (10x).

Newly emerged nodular lesions should always be excised and histologically examined (3) as in our case. Despite no cases of proliferative nodule in association with a blue nevus are reported in literature, we first report a case of a proliferative nodule arising within a blue nevus. Furthermore, our case cannot be referred neither to DBN nor to the CBN.

Two years later patient returned for clinical and dermoscopic examination and she didn't show recurrences at the level of the surgical scar nor clinically detectable lymphadenopathy. The clinical instrumental follow-up of our patient could increase our knowledge about the biological activity of this lesion.

## References

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