

Acne arising on a facial Becker nevus following the lines of Blaschko*

Marina Zoéga Hayashida¹
 Milvia Maria Simões e Silva Enokihara²
 Renato Shintani Hikawa¹
 Silmara da Costa Pereira Cestari¹

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Dear Editor,

Becker nevus (BN) is characterized by a unilateral lesion consisting of hypermelanosis and hypertrichosis. It develops on the upper torso, shoulders, or arms, especially of male adolescents. Most cases are acquired, and the time of onset varies from infancy to adulthood. Although the etiology of this nevus is not yet known, an association with the expression of androgen receptors is proposed.¹ Due to an unusual presentation, we report the case of a young adult patient with acne arising on a facial BN following the lines of Blaschko.

A 28-year-old male patient complained of a linear, hyperpigmented lesion on the forehead and nose since the age of 15 years. Three years after the onset, the patient repeatedly presented with pustules and nodules only on the right side of the nose, which led to the development of a scar area on the site.

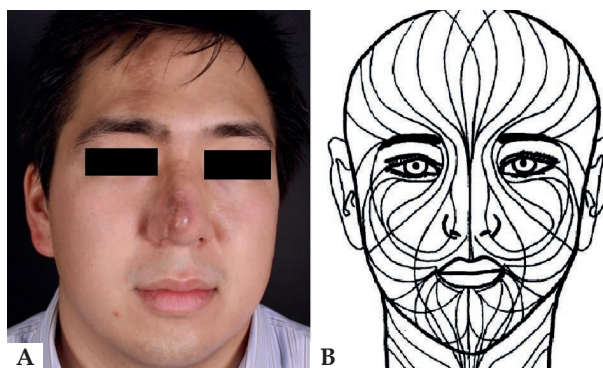
Physical examination revealed a linear, hyperpigmented, and brownish macula on the forehead and right side of the nose, with dark terminal hairs. We also observed a scarring area on the same side of the nose, completely sparing the left side and the right nasal wing (Figure 1). Interestingly, the macula closely followed one of the lines of Blaschko on the face (Figure 2).

A histopathological study revealed acanthosis and hyperpigmentation of the basal layer in the epidermis (Figure 3). In some areas, the dermis showed smooth muscle hyperplasia, confirming the diagnosis of BN (Figure 3).

BN is a cutaneous hamartoma characterized by a generally large hyperpigmented and unilateral area, with irregular borders and dark terminal hairs in about 50% of cases. Although the sites of predilection are shoulders, anterior aspect of the thorax, and scapu-



FIGURE 1: Linear, brown and hyperpigmented macula extending from the forehead to the right side of the nose, with terminal hairs and fibrosis area on the same side, completely sparing the left side and the right nasal wing



Source: Happle R, *et al.*, 2001.⁵

FIGURE 2: A. Linear, hyperpigmented, and brownish macula on the forehead and right side of the nose, precisely following one of the Blaschko lines. B. Scheme representing the lines of Blaschko of the face

lar region, any other area of the body can be affected.

Anatomopathological examinations of BN reveal alterations of the epidermis characterized by acanthosis with regular lengthening of interpapillary ridges. In some cases, papillomatosis is also found. Hyperpigmentation of basal layer cells are observed, and melanophages can be found in the papillary dermis. The number and size of piloerector muscles are increased, often resulting in an indistinguishable aspect from smooth muscle hamartoma (SMH).

Acne rarely appears in a segmental manner, usually occurring in cases of mosaicism such as nevus comedonicus, Happle-Tinschert syndrome, and Alpert syndrome. It is also usually associated with epidermal nevi, such as BN. A review of 375 cases demonstrated that most patients ($n = 349$) were affected by nevus comedonicus, all following the lines of Blaschko.² In relation to the association with BN, only 10 cases were described, all in the thoracic region with a block-like configuration, none of them following the lines of Blaschko.²

The first description of acne in a BN patient was reported in

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* Work performed at Escola Paulista de Medicina - Universidade Federal de São Paulo (UNIFESP) - São Paulo (SP), Brazil

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¹ Department of Dermatology of the Escola Paulista de Medicina at Universidade Federal de São Paulo (UNIFESP) - São Paulo (SP), Brazil

² Department of Pathology of the Escola Paulista de Medicina at Universidade Federal de São Paulo (UNIFESP) - São Paulo (SP), Brazil

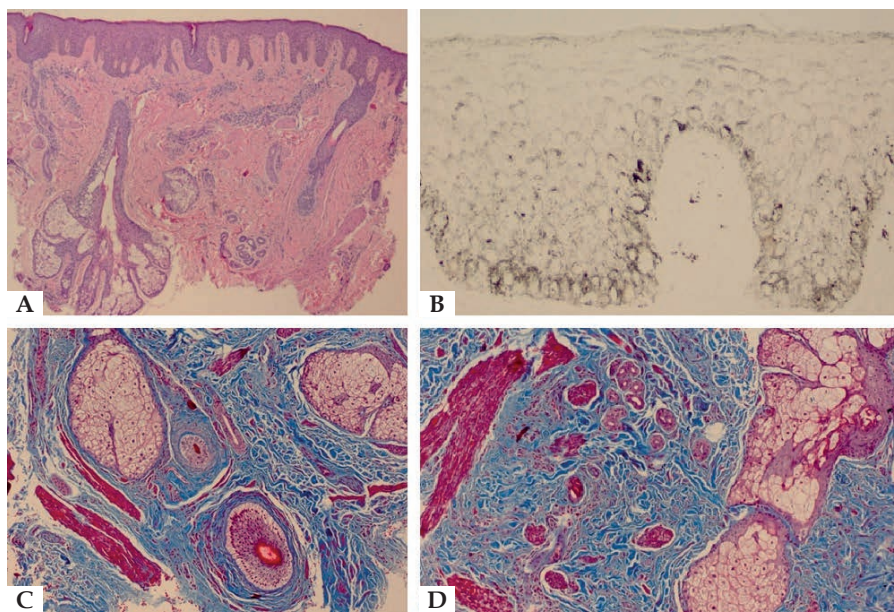


FIGURE 3:

A and B. The epidermis shows acanthosis with interpapillary ridges elongation and hypermelanose, more evident in Fontana-Masson (**A:** Hematoxylin & eosin, X40, **B:** Fontana-Masson, 400x). **C and D.** The dermis shows smooth muscle hyperplasia (Masson's trichrome stain, X400)

1978, by Burgreen and Ackerman. The association may be secondary to the overexpression of androgen receptors in these nevi. Facts that corroborate this hypothesis – besides the occurrence of acneiform eruption – include more prominent BN symptoms after puberty (which are visible in male patients), frequent association with pityriasis versicolor, association with breast hypoplasia in female patients with a thoracic lesion, and hypoplastic breast augmentation associated with a BN after the use of spironolactone.

In 1976, Jackson provided a detailed analysis of the lines of Blaschko and listed some diseases that could be distributed along these lines, which included BN.³ However, in 1994, Bologna *et al.* removed BN from this list because, although BN often respects the midline, it had always been observed with a block-like configuration.⁴ Happle and Assim evaluated 186 linear skin defects on the head and neck and then published precise diagrams of the lines of Blaschko of these sites.⁵ In an interesting way, our patient presented with a lesion following exactly one of the lines described by Happle, contradicting the results found by Bologna.⁴

Although there were some reports in the literature on the association between acne and BN, all lesions were described in the extrafacial area and showed a block-like pattern. We reported the first case in the literature of association of acne with the BN affecting the face following a line of Blaschko. Our findings may encourage further studies to better understand the *etiopathology* of BN. □

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MAILING ADDRESS:

Renato Shintani Hikawa
Av. Borges Lagoa, 508
Vila Clementino
04038-000 São Paulo, SP – Brazil
E-mail: renato71@gmail.com

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