PORTUGUESE JOURNAL OF PEDIATRICS

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CASE REPORT

Multiple and giant Becker's nevus. Case report

Celina Couto[1], Filipa Sutre[1], José Onofre[1], Maria João Silva[2], and Aldina Lopes[1]*

[1]*Pediatrics Department;* [2]*Dermatology Department. Hospital de Santarém, Santarém, Portugal*

Abstract

Introduction: Becker's nevus is a rare condition presenting benign skin lesions characterized by skin hyperpigmentation. **Case report:** We present an atypical case of a 17-year-old male adolescent with lumbosacral scoliosis, right breast hypoplasia, and three large hyperpigmented macules, with irregular extension between the bilateral scapular region and the knees bilaterally, with associated hypertrichosis. The histological analysis confirmed the diagnosis of Becker's nevus, and a watchful waiting approach was adopted. The association of Becker's nevus, unilateral breast hypoplasia, and scoliosis falls within the spectrum of Becker's nevus syndrome. **Discussion:** Given the atypical nature of this presentation, this case report holds significant relevance.

Keywords: Case report. Adolescent. Hyperpigmentation. Hypertrichosis. Nevus.

Nevo de Becker múltiplo e gigante. Relato de caso

Resumo

Introdução: Os nevos de Becker são lesões cutâneas raras e benignas, que cursam com hiperpigmentação da pele. **Relato de caso:** Apresentamos um caso atípico de um adolescente de 17 anos, do sexo masculino com escoliose lombo-sagrada, hipoplasia mamaria direita e três máculas hiperpigmentadas de grandes dimensões, com extensão irregular entre a região escapular bilateral e os joelhos bilateralmente, com hipertricose associada. A análise histológica confirmou o diagnóstico de nevo de Becker, e foi adotada uma atitude expectante. A associação de nevo de Becker, hipoplasia mamária unilateral e escoliose enquadra-se na síndrome do nevo de Becker. **Discussão:** Dada a natureza atípica da apresentação da doença, este relato do caso possui relevância significativa.

Palavras-chave: Caso clínico. Adolescente. Hiperpigmentação. Hipertricose. Nevo.

Keypoints

What is known

- Becker's nevus is a rare condition presenting benign skin lesions characterized by hyperpigmentation.
- The typical presentation of Becker's nevus consists of unilateral macular lesions.
- These lesions typically manifest during adolescence and are more prevalent in males.

What is new

- There are few reports of giant, bilateral Becker's nevi in the pediatric age group.
- A case of Becker's nevus syndrome characterized by multiple, giant, bilateral Becker's nevi, unilateral breast hypoplasia, and lumbosacral scoliosis.

***Correspondence:**
Celina Couto
E-mail: cfscouto@gmail.com

Received: 13-02-2024
Accepted: 22-01-2025
https://pjp.spp.pt

Available online: 27-03-2025
Port J Pediatr. 2026;57(1):44-47
DOI: 10.24875/PJP.24000019

Introduction

Becker's nevus is a rare, benign condition presenting hyperpigmented skin lesions, more frequently identified from the first two decades of life and rarely present at birth[1,2]. The exact pathophysiology is still poorly understood, but it has been suggested that androgenic stimulation plays a role[3].

The lesions, usually unilateral, are characterized by hyperpigmented macules with irregular borders, associated with hypertrichosis. They grow gradually and usually present as a single lesion with an irregular contour or as multiple macules arranged along a single border[1]. Becker's nevi are initially light in color and become progressively hyperpigmented with exposure to sunlight[4]. Hypertrichosis usually appears during puberty, after the development of hyperpigmentation[4].

The condition is primarily isolated and unilateral, but concomitant ipsilateral anomalies such as other skin lesions, musculoskeletal changes, and breast hypoplasia were detected in 5% of cases and few cases of giant, multiple Becker's nevi have been reported[1].

The Becker's nevus syndrome or hairy epidermal nevus syndrome was described for the first time by Happle in 1995, as an association of Becker's nevi with unilateral breast hypoplasia and muscle, skin and/or skeletal abnormalities[5,6].

We present a rare clinical case of Becker nevus syndrome in an adolescent with multiple, giant, bilateral Becker's nevi, unilateral breast hypoplasia, and lumbosacral scoliosis.

Case report

A 17-year-old male adolescent with a history of lumbosacral scoliosis (Cobb angle > 10), who was diagnosed at the age of 11 and managed conservatively, presented with flat, asymptomatic, brownish lesions characterized by irregular borders (Fig. 1). These lesions first appeared at the age of 15 and exhibited a progressive darkening and increase in size. Cutaneous examination revealed tree hyperpigmented macules with irregular edges. The first macule was located bilaterally in the scapular region, displaying a symmetrical distribution that extended to the shoulders, forearms, and upper chest on both sides. Hypertrichosis was notably present, predominantly on the left shoulder (Fig. 2). The second macule extended from the entire right abdomen and right lumbosacral region to the level of the knees on both sides, with hypertrichosis evident solely in the left lower limb. The third macule was the smallest of the three; it was unilateral and limited to the left lumbar region.

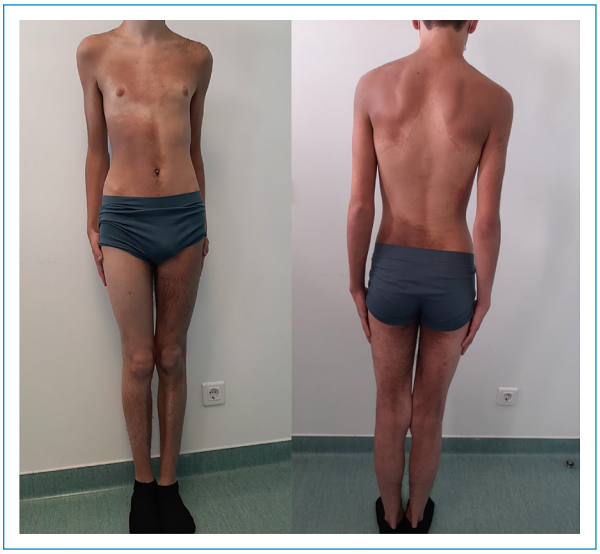

Figure 1. Multiple giant Becker's nevi and scoliosis.

A previous history of trauma, burns, or habitual medication was also excluded, and there was no family history of dermatological pathology. In addition to lumbosacral scoliosis and right breast hypoplasia (Fig. 2), no other changes were detected in the systemic physical assessment.

The histopathological examination of the skin biopsy taken from the second lesion on the abdomen and the left thigh revealed findings of epidermal acanthosis and elongation of the epidermal ridges, accompanied by hyperpigmentation of the basal layer. Notably, there was no evidence of melanocyte proliferation. The dermis exhibited smooth muscle tissue proliferation, while the hypodermis showed no distinctive features.

Based on the clinical history, skin examination, and histopathological evaluation, the adolescent was diagnosed with Becker nevus syndrome, characterized by multiple giant Becker's nevi, right breast hypoplasia, and lumbosacral scoliosis. It was proposed that the patient should be followed up in a dermatology consultation, adopting an expectant approach.

Discussion

Becker's nevi are hyperpigmented epidermal lesions with an approximate prevalence of 0.5%. They can manifest in various sizes and may present as isolated (typical presentation) or multiple lesions (as in this case)[7]. They can also exhibit varying degrees of hypertrichosis and other skin changes like acne[8]. In some cases, non-cutaneous abnormalities may be associated[7,8].

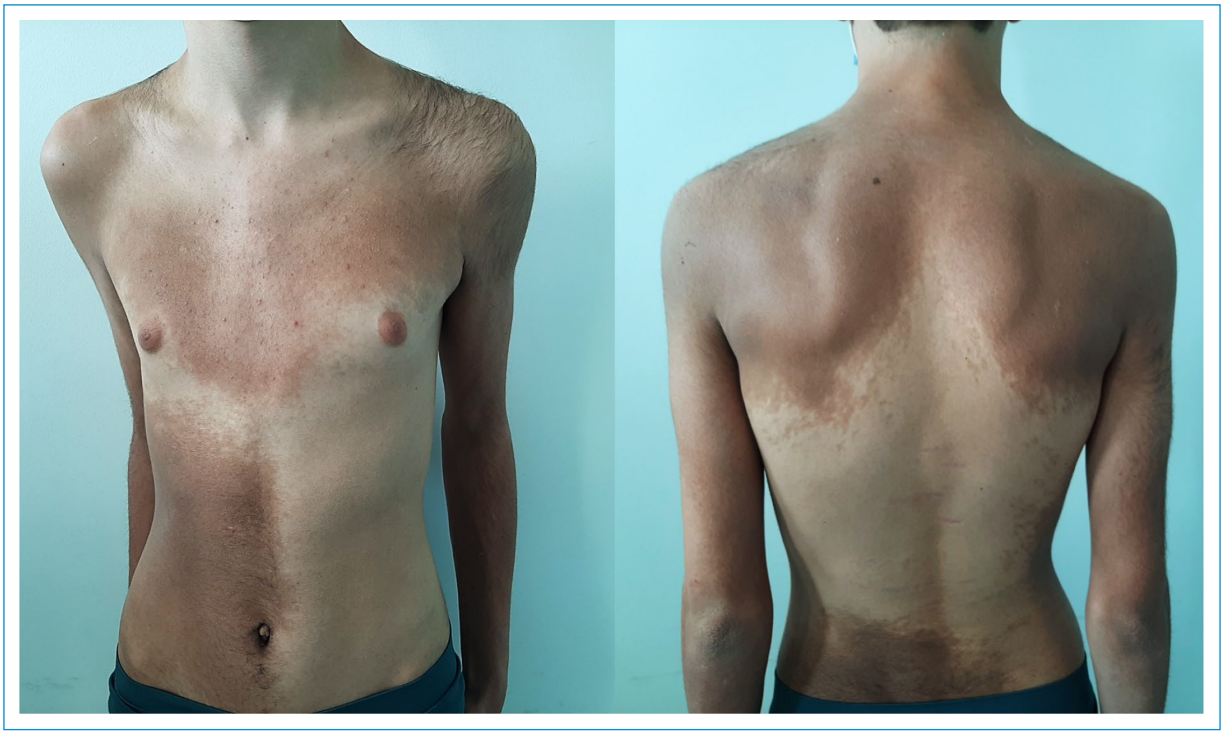

Figure 2. Hypertrichosis on both shoulders, predominantly on the left, and right breast hypoplasia.

Typically, they present as unilateral macular lesions with well-delimited borders and a geographic shape[8].

They are more prevalent in men (5:1 male-to-female ratio), with androgen stimulation believed to play a role in their pathophysiology[3,9]. This is supported by the clinical characteristics often associated with androgens, such as acne, acanthosis, and hypertrichosis. Notably, Becker's nevus tends to exhibit less hypertrichosis and hyperpigmentation when present in women[9,10]. A significantly higher expression of androgen receptors was also observed in the epidermis of Becker's nevi[10].

It has also been suggested that postzygotic mutations in beta-actin are associated with Becker's nevi[2].

Becker's nevi can simulate and make a differential diagnosis with other hyperpigmented lesions such as Albright's syndrome or congenital melanocytic nevi. The presence of hypertrichosis can make the diagnosis less challenging, but histological examination remains essential[3].

Although no standard treatment has been defined, therapy with pigment-specific lasers for cosmetic purposes can be considered[11,12].

For the diagnosis of Becker nevus syndrome or hairy epidermal nevus syndrome, the presence of Becker's nevus is fundamental in characterizing the syndrome. However, its association with breast hypoplasia or other skin, muscle, and/or skeletal disorders is also necessary. Typically, these disorders affect the same side of the body, although they may be bilateral. It is important to note that breast hypogenesis, scoliosis, or any other findings alone are insufficient to establish a diagnosis of the syndrome[5,6].

Our patient presented with lumbosacral scoliosis and right breast hypoplasia associated with the presence of multiple, giant, bilateral Becker's nevi. Given the unusual nature of this presentation within a rare disease and the scarcity of published cases in the pediatric age group, it is crucial to share related clinical cases for broader awareness.

Author contributions

C. Couto: Acquisition and interpretation of patient data and the literature; Writing of the article; Critical revision of the article for important intellectual content. F. Sutre: Acquisition and interpretation of patient data and the literature; Writing of the article. J. Onofre: Acquisition and interpretation of patient data and the literature; Critical revision of the article for important intellectual content; Final approval of the version to be published. M. João Silva: Acquisition and interpretation of patient data and literature; Critical revision of the article for important intellectual content; Final approval of the version to be published. A. Lopes: Critical revision of the article for important intellectual content; Final approval of the version to be published.

Funding

None.

Conflicts of interest

The authors declare no conflicts of interest in drafting this paper.

Ethical considerations

Protection of humans and animals. The authors declare that no experiments involving humans or animals were conducted for this research.

Confidentiality, informed consent, and ethical approval. The authors have followed their institution's confidentiality protocols, obtained informed consent from patients, and received approval from the Ethics Committee. The SAGER guidelines were followed according to the nature of the study.

Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing of this manuscript.

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