Giant Bilateral Becker Nevus: A Rare Presentation

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Abstract: A 14-year-old boy had giant confluent brown patches that were bilaterally distributed on his back, chest, and upper arms, and partially covered by dark coarse hairs. A clinical diagnosis of Becker nevus was made and confirmed histopathologically. We report this patient for the rarity of presentation. Different clinical features of Becker nevi, associated findings, differential diagnoses, and treatment options are discussed.

First described as “concurrent melanosis and hypertrichosis in the distribution of the nevus unius lateralis” by the late Dr. S.W. Becker in 1949 (1), Becker nevus is considered as a cutaneous hamartoma that characteristically manifests itself as a unilateral, localized, hyperpigmented patch covered more or less by terminal hairs (2,3) Also known as Becker melanosis and pigmented hairy epidermal nevus, it most often involves a limited area on the upper trunk of young adolescent men (4,5). Multiple, ipsilateral giant, and bilateral Becker nevi have been reported separately (6–8); however, the patient reported herein has a very rare form of this condition.

CASE REPORT

Clinical Features

A 14-year-old Iranian boy was admitted to the Center for Research and Training in Skin Diseases and Leprosy, Tehran, in February 2005 for evaluation of widespread dark patches on his skin. From the age of 8 years, the patient noted a change in the color of the skin overlying his left anterior chest. During the following 3 years the lesions progressively extended to involve large areas of his skin. The patient also mentioned the gradual appearance of dark coarse hairs on some parts of the lesions during the last 3 years. Except for some transient episodes of pruritus during exertion, the lesions were asymptomatic. His past medical history was nonsignificant, and his family had no history of similar disorders.

The patient was a cooperative young man in perfect health. The cutaneous examination disclosed widespread tan to brown patches in a roughly symmetrical distribution on the skin of his anterior chest, upper abdomen, back, and both upper arms, with some extension to the forearms (Fig. 1). The total involved surface area was estimated to be around 3870 cm². Terminal hairs were observed on the areas of hyperpigmentation. The hair growth was most obvious on the right anterior chest. A general physical examination was performed and did not reveal any problems. A clinical diagnosis of an unusual form of Becker nevus was made and a skin biopsy was performed.

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Histopathology

An incisional biopsy specimen was obtained from the affected tissue of the left upper back. Hematoxylin–eosin staining was performed. Light microscopic examination showed slight acanthosis, regular elongation of the rete ridges, hyperkeratosis, and hyperpigmentation of the basal layer cells. Hair structures appeared to be increased in number (Fig. 2).

DISCUSSION

Definition

Becker nevus is a cutaneous hamartoma or organoid nevus that characteristically manifests itself as a localized, unilateral hyperpigmented patch on the upper chest, scapular region, or proximal upper extremities of young men. In more than half of those affected the lesion is covered by coarse dark hairs (9,10). Although the lesions may have various shapes, they consistently have a geographic or blocklike configuration in an irregular fashion; a linear pattern has rarely been reported (11).

Epidemiology

According to a study of 19,302 men aged 17–26 years, the prevalence of Becker nevus is estimated to be around 0.5% in this age group (12). Most authors believe that isolated Becker nevus occurs more frequently in men than in women, with a 2:1 ratio. A recent study (13), however, suggested that the true sex ratio may in fact be 1:1, because Becker nevus tends to be less conspicuous in women (14).

This nevus can occur in all races. It usually appears around puberty and in 75% of instances it has appeared before the age of 15 years (9). Although in its classic form it is considered to be an acquired disorder, the occurrence of congenital Becker nevus has been reported (15–18).

Figure 2. Left: Acanthosis, elongation of the rete ridges, and some follicular plugs (hematoxylin–eosin stain, ×100). Right: Acanthosis, elongation of the rete ridges, and some follicular plugs as well as a relative increase in basal layer keratinocyte pigmentation (hematoxylin–eosin stain, ×250).
Familial occurrence of Becker nevus has also been documented (18–21).

Etiology
A paradominant inheritance has been suggested by Dr. Happle (22). Some evidence exists that abnormal androgen metabolism may play a role in the pathogenesis of Becker nevus (3,23,24). A history of severe sunburn at the site of lesion is obtained in around 25% of patients (9). Although not proved, an association with BCG vaccination has been suggested (25).

Dermoscopic Features
Network, focal hypopigmentation, skin furrow hypopigmentation, hair follicles, perifollicular hypopigmentation, and vessels were the main dermoscopic features of Becker nevus (26).

Clinical Features
The characteristic form of the disease has been described. Panizzon et al had classified Becker nevi according to their clinical presentation into melanotic, hypertrichotic, and mixed types (27). An occult type has been suggested in patients with a diagnosis of notalgia paresthetica in which a mild folliculitis develops (28) but this is not accepted by all experts. Becker nevus has been reported to occur on atypical sites such as the hands or feet (9,29–31). It may additionally be accompanied by some other cutaneous and extra-cutaneous involvements. Happle and Koopman (13) reviewed 23 cases and proposed the new term “Becker’s nevus syndrome” for a simultaneous occurrence of Becker nevus and unilateral breast hypoplasia or other cutaneous, muscular, or skeletal defects. All of these anomalies tend to show a regional correspondence to the nevus and are mostly ipsilateral (14,31). Extensive, multiple, and bilateral lesions have been reported (6–8,32).

Associations
It is very well documented that Becker nevus can be associated with several clinical conditions (33,34). Some of these associations are listed in Table 1.

TABLE 1. Conditions Associated with Becker Nevus

<table>
<thead>
<tr>
<th>Condition</th>
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<tbody>
<tr>
<td>Acanthosis nigricans (35)</td>
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<tr>
<td>Accessory scrotum (36)</td>
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<tr>
<td>Acneiform eruption (37–40)</td>
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<tr>
<td>Bowen’s disease (41)</td>
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<tr>
<td>Breast hypoplasia (40,42–45)</td>
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<tr>
<td>Chest abnormalities (40,42)</td>
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<tr>
<td>Congenital adrenal hyperplasia (46)</td>
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<tr>
<td>Connective tissue nevus (47)</td>
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<tr>
<td>Epidermal nevus (48)</td>
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<tr>
<td>Extramammary fatty tissue hypoplasia (49)</td>
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<tr>
<td>Fibrous dysplasia (50)</td>
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<tr>
<td>Lichen planus (51)</td>
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<tr>
<td>Limb asymmetry (52)</td>
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<tr>
<td>Lipoatrophy (49)</td>
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<tr>
<td>Localized cranial defects (53)</td>
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<tr>
<td>Localized scleroderma (54)</td>
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<tr>
<td>Lymphangiomata (55)</td>
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<tr>
<td>Malignant melanoma (56)</td>
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<tr>
<td>Multiple leiomyoma cutis (57)</td>
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<tr>
<td>Odontomaxillary dysplasia (58)</td>
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<tr>
<td>Perforating granulomatous folliculitis (38)</td>
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<tr>
<td>Pectus excavatum (59)</td>
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<tr>
<td>Polythelia (supernumerary nipples) (60)</td>
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<tr>
<td>Port-wine stain (61)</td>
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<td>Scoliosis (39)</td>
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<tr>
<td>Smooth muscle hamartoma (62,63)</td>
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<td>Spina bifida (39)</td>
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<td>Spinal epidural lipomatosis (64)</td>
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<td>Unilateral dermatal superficial telangiectasia (65)</td>
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</table>

Differential Diagnosis
Clinical differential diagnoses include congenital melanocytic nevi, hyperpigmented lesions of Albright syndrome, smooth muscle hamartoma, café-au-lait macules, and progressive cribriform and zosteriform hyperpigmentation (2,9,66).

Treatment Options
It is generally accepted that Becker nevus has no effective treatment (9). However, many patients seek therapy to improve their condition. Although reassurance may be all that is needed for a limited lesion on a covered area, lesions on exposed areas may need an intervention. Traditional surgical excision usually is unsuccessful and may result in unacceptable scars. Lasers have been used for improving the pigmentary component as well as for reducing the associated hypertrichosis and have been variably successful for some patients (67). In a recent study, one-pass Er:YAG laser had better results than three treatment sessions with the Nd:YAG laser (68).

CONCLUSIONS
Our patient had giant and bilateral Becker nevus, a relatively common cutaneous hamartoma. Although in its characteristic form it is considered as a benign lesion, in many instances the lesion can cause cosmetic problems. It must also be remembered that it may be associated with a wide spectrum of clinical entities, some of which can be potential threats to the patient’s health. In order to detect any associated condition, detailed history taking and careful physical examination are recommended.
REFERENCES


