Becker Nevus Syndrome

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Abstract. Becker nevus is a hyperpigmented hamartoma with an irregular outline and often hairy. It is normally found on the shoulders and chest, although it can appear in other areas. Becker nevus is sometimes associated with other muscular, skeletal, or cutaneous abnormalities such as ipsilateral breast hypoplasia or scoliosis. This characteristic phenotype of Becker nevus associated with unilateral breast hypoplasia or other abnormalities is referred to as Becker nevus syndrome. Although the lesions usually become apparent during adolescence, they are present from birth and represent part of the spectrum of so-called epidermal nevus syndromes. We present 4 cases of Becker nevus syndrome in which Becker nevus was associated with ipsilateral breast hypoplasia and, less consistently, other abnormalities.

Key words: Becker nevus, Becker nevus syndrome, breast hypoplasia, epidermal nevus.

Introduction

Becker nevus, also called Becker melanosis or pigmented hairy epidermal nevus, is a benign cutaneous hamartoma that develops as a light or dark brown macule with well-defined but irregular borders and can present hypertrichosis.1 Although the most common sites are the scapular region or the chest, Becker nevus can appear on any part of the body.2 Histologically it is characterized by moderate acanthosis with elongation of the rete ridges and a variable degree of hyperkeratosis. The basal layer of the epidermis is hyperpigmented, although there is no increase in the number of melanocytes. Melanophages are present in the dermis and there is an increase in the number of arrector pili muscles, making differentiation from smooth muscle hamartoma sometimes impossible.3,4

Becker nevus is androgen dependent and, in consequence, although it is congenital, it is not uncommon for it to become more pronounced during adolescence, particularly in males.4-6 It is occasionally associated with other abnormalities, such as hypoplasia of the ipsilateral breast and the presence of muscle, skeletal, or cutaneous abnormalities. The presence of any of these abnormalities associated with Becker nevus defines a characteristic phenotype called Becker nevus syndrome.7 These abnormalities usually but not invariably appear on the same side of the body.5,7

We present 4 patients with Becker nevus and associated abnormalities within the spectrum of what is usually found in Becker nevus syndrome.
Case Descriptions

Case 1

A 13-year-old boy presented a lesion that appeared spontaneously at 3 years of age; the lesion was situated over the right scapular region and extended onto the right shoulder and arm. It had a hairy surface and was associated with hypoplasia of the ipsilateral breast. The patient also presented clinical and radiological signs of scoliosis (Figure 1).

Case 2

A 12-year-old boy presented a brown lesion on the anterior aspect of the chest that had been present since 6 months of age. The lesion had a hairy surface and biopsy confirmed the diagnosis of Becker nevus. Ipsilateral breast hypoplasia was detected on examination (Figure 2). Clinical and radiological examination did not reveal scoliosis. The patient also had 3 café-au-lait spots on the back.

Case 3

The patient was a 12-year-old boy with a past medical history of hydronephrosis secondary to bilateral ureteral stenosis who consulted for an asymptomatic brown patch situated on the right side of the chest that had appeared spontaneously over the previous 2 or 3 years. Biopsy was compatible with a diagnosis of Becker nevus. Examination revealed thinning of the right pectoralis muscle over which the nevus was situated. The patient did not present scoliosis or other skeletal abnormalities.

Case 4

The patient was a 12-year-old boy who consulted for an asymptomatic brown patch on the right side of the chest that had appeared when he was 8 years of age. On examination, a nonhairy brown patch with irregular borders was observed. The pectoralis muscle over which the lesion was situated was thinner than the contralateral muscle. The patient had clinical signs of moderate scoliosis.

The findings of these cases are summarized in Table 1.

Table 1. Case Descriptions

<table>
<thead>
<tr>
<th>Case</th>
<th>Sex</th>
<th>Age at Appearance</th>
<th>Localization</th>
<th>Hypertrichosis</th>
<th>Ipsilateral Breast Hypoplasia</th>
<th>Other Findings</th>
<th>Family History</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>3 years</td>
<td>Scapular, shoulder, right arm</td>
<td>Yes</td>
<td>Yes</td>
<td>Scoliosis</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>6 months</td>
<td>Left hemithorax</td>
<td>Yes</td>
<td>Yes</td>
<td>Café-au-lait spots</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>9-10 years</td>
<td>Right hemithorax</td>
<td>No</td>
<td>Yes</td>
<td>Bilateral ureteral stenosis</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>8 years</td>
<td>Right hemithorax</td>
<td>No</td>
<td>Yes</td>
<td>Scoliosis</td>
<td>No</td>
</tr>
</tbody>
</table>
is probably due to mutations occurring earlier than those responsible for isolated Becker nevus.

Becker nevus syndrome affects males and females in equal proportions, whereas it has been reported that the male to female ratio in Becker nevus is 2 to 1; this could be related to the dependence of the lesion on androgens. The discrepancy might also be explained by the more clinically pronounced breast hypoplasia in females than in males.²,³,₁² Our 4 cases were sporadic and all of them occurred in males. No further abnormalities other than those described were subsequently detected in any of the 4 cases after a follow-up of between 1 and 12 years. Finally, given that the appearance of Becker nevus-associated abnormalities in this syndrome can be relatively subtle, it is likely that many cases have passed undetected, and that the syndrome is more common than may be thought from the limited number of cases published.

Conflicts of Interest
The authors declare no conflicts of interest.

References