A Case of Linear Atrophoderma of Moulin

N López, MA Gallardo, M Mendiola, R Bosch, and E Herrera
Departamento de Dermatología, Hospital Universitario Virgen de la Victoria, Málaga, Spain

To the Editor:
Linear atrophoderma of Moulin is characterized by slightly atrophic hyperpigmented patches that follow Blaschko lines. Only a few cases have been reported since the condition was first described by Moulin et al1 in 1992 and most of these have been isolated cases. Moreover, not all of them coincide with the original description. We report the case of a patient with typical clinical and histologic findings.

A 17-year-old male patient presented with hyperpigmented lesions on the right upper arm. The lesions, which had appeared 12 months earlier, occurred as multiple brown macules that formed a distinctive S-shaped curve along the affected arm. Since their onset, they had spread slowly and progressively, grown in number and size, darkened, and acquired a slightly atrophic texture (Figure 1). There were no subjective or objective symptoms, related events, or inflammatory reactions in the affected area. The 2 skin biopsies performed revealed only localized hyperpigmentation in the basal layer of the epidermis (Figure 2).

The results of the other tests performed (complete blood count, coagulation, liver and kidney function, antinuclear antibodies, protein profile, erythrocyte sedimentation rate, chest radiograph, and serological tests for Borrelia) were all normal. No specific treatment was prescribed and, with the exception of the darkening of the atrophic patches, the condition remained unchanged during the first 6 months of follow-up. Four years later, the lesions seem to be stable and there have been no evident changes.

Linear atrophoderma of Moulin is a rare skin condition featuring lesions that follow Blaschko lines.1,2 In our review of the literature, we found 22 publications describing the condition (Table). Because several of the clinical and histologic features described do not adhere strictly to the original description provided by Moulin et al,3 the true number of cases may actually be smaller.

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Cases Reported as Linear Atrophoderma of Moulin

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Patients</th>
<th>Sex</th>
<th>Age at Onset</th>
<th>Lesion Site</th>
<th>Histologic Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moulin et al1 1992</td>
<td>1</td>
<td>M</td>
<td>8</td>
<td>Left part of trunk</td>
<td>Hyperpigmentation of basal epidermis</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>7</td>
<td>Right part of trunk</td>
<td>Hyperpigmentation of basal epidermis</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>15</td>
<td>Right part of trunk</td>
<td>Hyperpigmentation of basal epidermis</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>20</td>
<td>Left part of trunk</td>
<td>Biopsy not performed</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>6</td>
<td>Left part of trunk and left arm</td>
<td>Biopsy not performed</td>
<td></td>
</tr>
<tr>
<td>Baumann et al2 1994</td>
<td>6</td>
<td>M</td>
<td>22</td>
<td>Right part of trunk and right arm</td>
<td>Ballooning in basal epidermis, perivascular lymphocytic infiltrate, and increased collagen in the dermis.</td>
</tr>
<tr>
<td>Larregue et al 1995</td>
<td>7</td>
<td>M</td>
<td>15</td>
<td>Left part of trunk</td>
<td>Increased collagen in dermis</td>
</tr>
<tr>
<td>Wollenberg et al 1996</td>
<td>8</td>
<td>F</td>
<td>11</td>
<td>Right arm</td>
<td>Epidermal atrophy, perivascular lymphocytic infiltrate, and increased collagen in the dermis.</td>
</tr>
<tr>
<td>Artola et al 1996</td>
<td>9</td>
<td>F</td>
<td>9</td>
<td>Left part of trunk</td>
<td>Acanthosis and hyperpigmentation of basal epidermis, perivascular lymphocytic infiltrate, and increased collagen in the dermis.</td>
</tr>
<tr>
<td>Cecchi et al 1997</td>
<td>10</td>
<td>F</td>
<td>12</td>
<td>Right part of back and right arm</td>
<td>Localized hyperpigmentation of basal epidermis</td>
</tr>
<tr>
<td>Browne et al 2000</td>
<td>11</td>
<td>M</td>
<td>13</td>
<td>Limbs and trunk, bilateral</td>
<td>Acanthosis, hypogranulosis, and parakeratosis with perivascular lymphocytic infiltrate in the dermis.</td>
</tr>
<tr>
<td>Rompel et al 2000</td>
<td>12</td>
<td>F</td>
<td>14</td>
<td>Right part of trunk and right buttock</td>
<td>Hyperpigmentation in basal epidermis, Civatte bodies, perivascular lymphocytic infiltrate, and increased collagen.</td>
</tr>
<tr>
<td>Martin et al 2002</td>
<td>13</td>
<td>M</td>
<td>9</td>
<td>Left part of trunk</td>
<td>Perivascular lymphocytic infiltrate and increased collagen</td>
</tr>
<tr>
<td>Miteva et al 2002</td>
<td>14</td>
<td>F</td>
<td>16</td>
<td>Right part of face, right arm and leg</td>
<td>Psoriasiform epidermal hyperplasia, perivascular lymphocytic infiltrate, and increased collagen in the dermis.</td>
</tr>
<tr>
<td>Danarti et al 2003</td>
<td>15</td>
<td>F</td>
<td>14</td>
<td>Left part of trunk and left arm</td>
<td>Perivascular lymphocytic infiltrate</td>
</tr>
<tr>
<td>16</td>
<td>F</td>
<td>24</td>
<td>Left part of trunk and left arm</td>
<td>Biopsy not performed</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>F</td>
<td>38</td>
<td>Left thigh</td>
<td>Unremarkable epidermis and dermis</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>F</td>
<td>15</td>
<td>Left buttock and left iliac crest</td>
<td>Biopsy not performed</td>
<td></td>
</tr>
<tr>
<td>Utikal et al 2003</td>
<td>19</td>
<td>M</td>
<td>23</td>
<td>Limbs and trunk, bilateral involvement</td>
<td>Perivascular lymphocytic infiltrate and edema in dermis</td>
</tr>
<tr>
<td>20</td>
<td>F</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miteva et al 2005</td>
<td>21</td>
<td>M</td>
<td>9</td>
<td>Left part of trunk and left arm</td>
<td>Hyperkeratosis, irregular acanthosis, hyperpigmentation of basal epidermis, and increased collagen in dermis.</td>
</tr>
<tr>
<td>Atasoy et al 2006</td>
<td>22</td>
<td>M</td>
<td>16</td>
<td>Right part of trunk and right arm</td>
<td>Epidermal atrophy, perivascular lymphocytic infiltrate, and fragmented collagen fibers</td>
</tr>
<tr>
<td>Present case 2007</td>
<td>23</td>
<td>M</td>
<td>16</td>
<td>Right upper arm</td>
<td>Localized hyperpigmentation of basal epidermis</td>
</tr>
</tbody>
</table>

Abbreviations: F, female; M, male.
conditions described were separate clinical entities rather than atypical variants of linear atrophoderma of Moulin, which is in itself a rare condition. Perhaps the authors were describing childhood-onset cases of linear nevoid atrophoderma with telangiectasias in patients without an associated hormonal disorder. Atasoy et al recently observed leuconychia in a patient with symptoms consistent with linear atrophoderma of Moulin.

The main differences between the cases reported to date are related to histologic findings. The most common finding is a perivascular lymphocytic inflammatory infiltrate in the superficial dermis combined with abnormal collagen fibers. Because perivascular lymphocytic infiltrates and abnormal collagen fibers are more characteristic of atrophoderma of Pasini and Pierini than of linear atrophoderma of Moulin, Ang et al proposed naming this condition Blaschko-linear atrophoderma of Pasini and Pierini. Histologic changes in the epidermis—in particular atrophy, acanthosis, parakeratosis, and hyperkeratosis—have also been reported, although not as frequently. It is very probable that those cases were actually describing nevi, linear inflammatory epidermal nevi, lichen striatus, or nevoid hypermelanosis.

In conclusion, based on the clinical and histologic findings documented by several authors describing what they considered to be linear atrophoderma of Moulin, we believe that the prevalence of the condition may be overestimated as several of these authors reported histologic findings that are compatible with other clinical entities.

References