Proliferative Cutaneous Epithelioid Angiomatous Nodule

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Abstract. The cutaneous epithelioid angiomatous nodule is an uncommon benign vascular proliferation that has only recently been described. Clinically, it usually presents as a solitary, fast-growing, small reddish papulous or nodular lesion on the trunk or limbs of adults. Histopathologic study reveals a proliferation of epithelioid cells and predominantly solid, well delimited, unilobular growth in the superficial dermis. Well defined vessels are often found permeating the lesion, which also shows a certain degree of inflammatory infiltration. The cells contain abundant pink cytoplasm, often with vacuoles, and vesicular nuclei with prominent nucleoli. The morphology of these cells is relatively uniform, without atypia or pleomorphism, although mitoses are not uncommon. We report 2 new cases of cutaneous epithelioid angiomatous nodules, the first in a 28-year-old pregnant woman and the second in a 27-year-old man. In both cases, the usual characteristics of this entity were present, but with the peculiarity of a high mitotic index. We discuss the differential diagnosis of cutaneous epithelioid angiomatous nodules with other vascular proliferations that exhibit epithelioid cytology.

Key words: epithelioid, vascular neoplasm, cutaneous.

Introduction

The cutaneous epithelioid angiomatous nodule (CEAN) is a benign, probably reactive, vascular proliferation that manifests as a small, fast-growing nodular lesion located in the trunk or limbs of adult patients. The histopathology of the disease is characterized by a solid, clearly circumscribed proliferation located in the superficial dermis and composed of epithelioid cells, occasionally with vacuoles in the cytoplasm, without atypia or pleomorphism but with some degree of mitosis.

It is a rare entity and, to date, only 28 cases have been reported. It is important because it can sometimes be used in differential diagnosis with malignant epithelioid vascular proliferations. We report 2 cases of CEAN that are unusual due to the high mitotic index.
superficial dermis, demarcated by an ulcerated surface epidermal collar, covered by a serous crust (Figure 2). The proliferation consisted of epithelioid cells with vesicular nuclei and prominent nucleoli; some of the cells had vacuoles in the cytoplasm. The proliferation contained scattered endothelium-lined lumens. The cells show no marked atypia but were notable due to abundant mitosis (Figure 3). Immunostaining was positive for Ki-67 in up to 40% of the cells and tests for CD31 and CD34 were also positive. However, the cells were not stained with caldesmon, cytokeratin, or epithelial membrane antigen.

Case 2

A 27-year-old man with no relevant history visited our department with a lesion that had recently appeared on the face. The physical examination revealed an angiomatous papule that was clinically diagnosed as pyogenic granuloma. The lesion was resected and histology revealed a lesion circumscribed to the superficial dermis, surrounded by an epidermal collar, and with ulcerated surface areas covered by a squamous crust (Figure 4). The lesion showed an infiltrate of epithelioid cells with vesicular nuclei and prominent nucleoli, with abundant intracytoplasmic vacuoles. Some vascular spaces were observed between these cells (Figure 5). Histology was positive for CD31 in the epithelioid cells. As in the previous case, abundant mitosis was notable.

Discussion

CEAN was described in 2004 by Brenn and Fletcher in a study of 15 cases. Only 13 further cases have been...
Differential diagnosis of CEAN should be performed with other tumors and vascular proliferations composed of epithelioid cells. We can therefore use clinical and histopathologic criteria to differentiate it from ALHE. Clinically, ALHE typically appears on the head or neck and often presents in the form of a group of several lesions, whereas CEAN appears to predominate on the trunk and usually presents as a single lesion. Histopathology findings show that ALHE usually penetrates to the deep dermis and the hypodermis, whereas CEAN is confined to the superficial dermis. ALHE is typically multilobular, whereas CEAN is typically unilobular. Furthermore, ALHE is predominantly vasoformative, whereas CEAN is essentially a solid proliferation. Finally, in ALHE there is greater inflammation, a larger number of accompanying eosinophils, and the stroma are more abundant than in CEAN.

Bacillary angiomatosis affects predominantly, though not exclusively, immunocompromised patients, particularly patients who are seropositive for the human immunodeficiency virus. Until now, CEAN had not been linked to immunosuppression or other underlying diseases. Bacillary angiomatosis commonly occurs as multiple and even disseminated lesions, whereas most cases of CEAN present as single lesions, as has already been mentioned. Furthermore, in terms of histopathology, bacillary angiomatosis is multilobular and typically has a neutrophilic infiltrate and clumps of a purplish material (concentrations of *Bartonella* bacilli). None of these 3 histologic features is typical of CEAN.

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and does not usually contain structured vessels, which are not uncommon as a focal feature in CEAN. Cytokeratin is positive in up to 25% of cases of epithelioid hemangioendothelioma.

In conclusion, we report these cases of CEAN not only because it is a rare process, with only 28 previously reported cases, but also because they represent an unusual variety of CEAN, which we have called proliferative due to its high mitotic index. We suggest that the fact that the patient was pregnant may have favored the proliferative and, to an extent, infiltrative nature of the first case. We also believe that it is important to be aware of this variety of CEAN because it is histologically very similar to angiosarcoma.

Conflicts of Interest
The authors declare no conflicts of interest.

Table. Summary of the Main Clinical Characteristics of Cutaneous Epithelioid Angiomatous Nodules

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age, y</th>
<th>Location</th>
<th>Clinical Manifestation</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>57</td>
<td>Thorax</td>
<td>Multiple lesions</td>
</tr>
<tr>
<td>F</td>
<td>14</td>
<td>Back</td>
<td>Nevus</td>
</tr>
<tr>
<td>M</td>
<td>45</td>
<td>Behind right ear</td>
<td>Hemangioma</td>
</tr>
<tr>
<td>M</td>
<td>35</td>
<td>Left eyebrow</td>
<td>Cyst</td>
</tr>
<tr>
<td>M</td>
<td>42</td>
<td>Left shoulder</td>
<td>Angioleiomyma</td>
</tr>
<tr>
<td>M</td>
<td>55</td>
<td>Left hand</td>
<td>Reaction to foreign body</td>
</tr>
<tr>
<td>M</td>
<td>72</td>
<td>Neck</td>
<td>Cancer</td>
</tr>
<tr>
<td>F</td>
<td>20</td>
<td>Right breast</td>
<td>Single lesion</td>
</tr>
<tr>
<td>F</td>
<td>74</td>
<td>Right side of forehead</td>
<td>Epidermal cyst</td>
</tr>
<tr>
<td>M</td>
<td>39</td>
<td>Right upper eyelid</td>
<td>Inflamed vascular lesion</td>
</tr>
</tbody>
</table>

Brenn and Fletcher (2004)  
M 55 Thorax Small nodule  
F 27 Back Exophytic nodule  
F 28 Right buttock Erythematous nodule  
M 48 Back Unknown  
F 48 Finger Nodule  
M 15 Sole of foot Bluish lesion  
F 55 Right side of trunk Pruriginous papule  
F 79 Right shoulder Nodule  
M 17 Nasal cavity Reddish polyp  
F 41 Lumbar region Friable reddish polyp  
M 29 Right forearm Nodule  
F 37 Nose Reddish papule  
M 26 Thorax Bluish nodule  
M 44 Left arm Erythematous-violet papules  
F 20 Right leg Painful nodule

Fernández-Flores et al (2001)  
F 30 Fold behind right ear Bluish nodule

Zamecnik (2004)  
F 54 Unknown Nodule

Kantrow et al (2007)  
F 43 Back Pruriginous papule

Our cases  
F 28 Scapular region Reddish nodule  
M 27 Face Angiomatous papule   

Total  
15 M 14-79 13 trunk  
15 F 7 limbs  
1 head and neck  
1 unknown

Abbreviations: F, female; M, male.
References