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CASE FOR DIAGNOSIS

A Nodule on the Breast after Radiation Therapy [[es]]Nódulo en mama tras radioterapia☆

Clinical findings

A 61-year-old woman was referred to our department due to a 3 mm violaceus papule located on the presternal area (Fig. 1A). There was neither regional lymph node enlargement nor systemic involvement. She had a history of left breast ductal carcinoma in situ in December 2014. She underwent conservative breast surgery plus ipsilateral axillary lymph node dissection. Tumor margins and lymph nodes were free of disease. She was prescribed Letrozol and a course of postoperative radiotherapy.

Histopathological findings

Histological examination showed a dome-shaped, well circumscribed, nodular lesion in the upper dermis (Fig. 1B). It was composed of a predominantly solid proliferation of large epithelioid cells with ample eosinophilic cytoplasm, enlarged vesicular nuclei and prominent nucleoli. Some of these cells showed intracytoplasmic vacuoles. There were numerous intralesional vascular channels containing erythrocytes and scattered inflammatory cells, predominantly neutrophils and eosinophils (Fig. 1C). Mitoses were sparse, and none of them atypical. Dilated vascular spaces and mild fibrosis were evident in perilesional areas. The immunohistochemical staining was positive for CD31 in the epithelioid cells, as well as in the vascular endothelial cells, CD34 and factor VIII; they were negative for cytokeratins 8, 18,19, CD30, CD68, Melan-A, S100, D2-40, c-MYC, GATA 3 and estrogen receptor. Ki-67 status was 10%.

What is your diagnosis?

DIAGNOSIS

Cutaneous Epithelioid Angiomatous Nodule

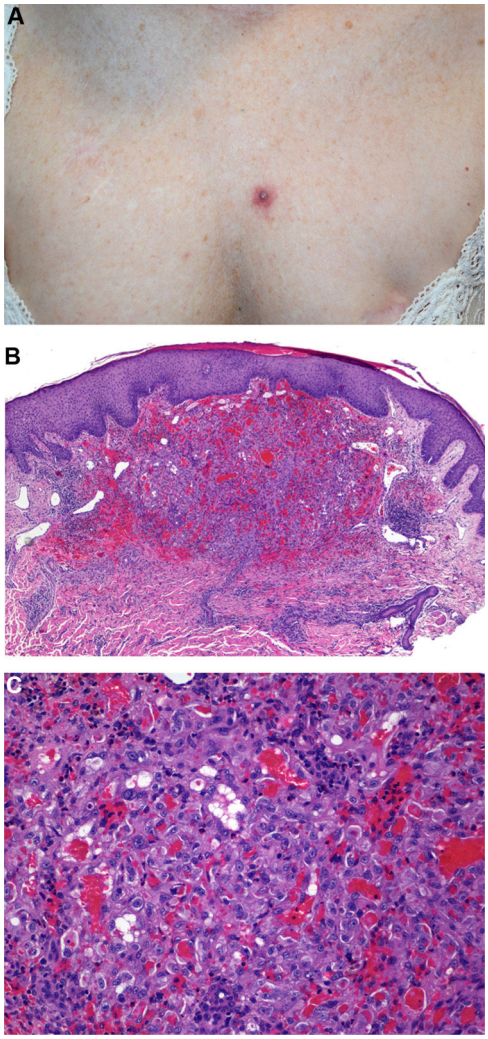

Fig. 1 B) Hematoxilina-eosina, ×20. C) Hematoxilina-eosina, ×200.

Discussion

Cutaneous Epithelioid Angiomatous Nodule (CEAN) is an uncommon benign lesion with distinctive histological features. It is characterized by a well-delimited, predominantly solid vascular proliferation in the superficial dermis. Well defined vessels are frequently found permeating the lesion,

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which also shows a certain degree of inflammatory infiltration. It is composed by large, epithelioid, endothelial cells that contain vesicular nuclei and prominent nucleoli.[1] The abundant cytoplasm consistently contains intracytoplasmic vacuoles.

It clinically presents as a small, fast-growing, small reddish papule or nodule, most frequently located on the head, neck, trunk or limbs of adults. Most cases are solitary, but multiple lesions have been documented.

The differential diagnosis includes several benign and malignant vascular neoplasms in which epithelioid cells can be seen.

In this case, due to the patient's history of breast radiotherapy and peculiar histology of the lesion, a differential diagnosis must be made with radiation-induced angiosarcoma (RIA). RIA is an uncommon complication after radiotherapy for breast cancer with an incidence of 0.05–0.3% which usually bears very poor prognosis[2]. Histologically, it is a malignant tumor that frequently shows solid component and irregular vascular channels. Despite the more aggressive clinical behavior, the epithelioid variant of angiosarcoma (EA) shares some morphologic features with CEAN. Pleomorphism of the cells and high number of mitosis, some of them atypical, are clues for the diagnosis. Positive immunohistochemical staining for CD31, CD34 and factor VIII confirms endothelial differentiation, while c-MYC positivity and a high Ki67 index (>40%) in both the solid component and the vascular channels are consistent markers of malignancy.[3]

Epithelioid hemangioendotelioma (EHE) is an intermediate malignant potential tumor, composed of nests of epithelioid endothelial cells. EHE may show significant histologic overlap with CEAN. However, EHE typically occurs as a nonvasoformative nodule composed of cords and strands of epithelioid cells embedded in a fibromyxoid stroma. The cells usually show various degrees of pleomorphism, and mitotic figures are conspicuous, including the presence of atypical ones.[4]

For some authors CEAN can be classified inside the spectrum of angiolymphoid hyperplasia with eosinophilia (ALHE), also known as epithelioid hemangioma. They appear as loosely lobed proliferations of capillary-sized vessels coated with large endothelium that shows identical characteristics of the endothelium of CEAN. An inflammatory infiltrate composed mainly of lymphocytes and eosinophils is quite characteristic, and more prominent in ALHE than in CEAN.[5]

Other differential diagnosis include amelanotic melanoma, ductal breast carcinoma, Langerhans cell histiocytosis and CD-30 positive proliferations.

To conclude, CAEN is a benign, uncommon vascular tumor with no recurrence or metastasis reported to date. Physicians should bear it in mind within the differential diagnosis of vascular tumors in the skin.

Funding sources

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