Bilateral angiosarcoma of the breast detected by magnetic resonance imaging during pregnancy

Abstract Angiosarcoma of the breast is an aggressive malignancy of endothelial origin with a tendency for local-regional recurrence. The involvement of angiosarcomas in the bilateral breasts has rarely been documented. Of note, due to its rarity and typically unclear clinical findings upon examination, the diagnosis of a contralateral lesion can be difficult, particularly in women during pregnancy. Here we present a rare case of bilateral angiosarcoma of the breast during pregnancy. A 32-year-old woman was referred to our unit with complaints of progressive swelling of the left breast, with tenderness. Magnetic resonance imaging showed a small, circumscribed high-intensity area in the contralateral breast, with pattern similar to that of the lesion found in the left breast. The contralateral lesion revealed only equivocal findings with the other diagnostic modalities. Diagnosed as angiosarcoma preoperatively, excision of the bilateral tumors was performed. Histological findings of the removed bilateral tumors were compatible with high-grade angiosarcoma of the breast.

Key words Angiosarcoma · Breast · Pregnancy · Bilateral · Magnetic resonance imaging

Introduction

Angiosarcoma is a rare neoplastic disease of the breast usually presenting with an aggressive clinical manifestation. This rare disease occasionally arises in young women, even during pregnancy. The incidence of angiosarcoma of the bilateral breasts has been reported occasionally. However, because of equivocal findings upon clinical examination, small-sized lesions can easily be missed. It is particularly challenging to acquire a precise diagnosis for women during lactation or pregnancy. Here we report a case of angiosarcoma affecting the bilateral breasts in a pregnant woman, which was successfully detected using preoperative magnetic resonance imaging (MRI), enabling us to perform the optimal treatment strategy (surgical resection), such as excisional biopsy of the contralateral breast lesion, and subsequent adjuvant chemotherapy.

Case report

At 18 weeks of gestation, a pregnant 32-year-old woman, who seemed to be healthy otherwise, presented with progressive pain and swelling of her left breast and was referred to our care. Twenty-four months before, she had delivered a healthy baby; she had breast-fed the baby for 18 months. Two months after she had stopped breast feeding, she felt the onset of progressive swelling in her left breast, accompanied by moderate pain. Before she came to our hospital, her left breast lesion had been diagnosed as stagnation mastitis and she had undergone breast squeezing and icing therapy at another clinic. But her clinical symptoms were not relieved. Upon examination on arrival at our care unit, her left breast lesion was 15 × 14 cm in size and was associated with a diffuse dark-bluish color and dilation of the superficial veins (Fig. 1). The lesion in her left breast was tender, soft, and elastic upon palpation, without evidence of any discharge from the nipple. Further careful physical examination revealed an equivocal contralateral breast nodule that was 4 × 3.5 cm in size, with no swelling of the bilateral axilla lymph nodes or supraclavicular area. Ultrasonography of the bilateral lesions revealed ill-defined homogeneously low-echoic tumors. To evaluate the large lesion in her left breast, MRI was performed, revealing a low-intensity lesion on the T1 weighted image. A round and
Fig. 1. Physical examination revealed an elastic, soft 15-cm-diameter mass in the left breast.

Fig. 2. A T2-weighted magnetic resonance imaging (MRI) showed a nearly homogeneous high-intensity tumor in the left breast. B Horizontal view of the T2-weighted image of the bilateral breasts revealed a small round nodule (arrow) in the right breast, with an intensity pattern similar to that of the main tumor in the left breast (arrowheads).

Fig. 3. Immunohistological evaluation of the needle biopsy specimen revealed that both tumors were composed of cells that were diffusely positive for CD31, CD34, and vimentin, whereas the tumors were negative for cytokeratin, CAM5.2, and AE1+AE3 (×40).

Fig. 4. Macroscopic observation of the cut surface of the left breast tumor showed a homogeneous dark-red tumor.