Wydawnictwo UR 2020
ISSN 2544-1361 (online); ISSN 2544-2406
doi: 10.15584/ejcem.2020.4.12

http://www.ejcem.ur.edu.pl/en/
European Journal of Clinical and Experimental Medicine
Eur J Clin Exp Med 2020; 18 (4): 331–334

CASUISTIC PAPER

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Primary breast angiosarcoma – a case report

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ABSTRACT

Introduction. Angiosarcoma is a rare breast cancer that can be primary or secondary after surgery or after breast cancer radiotherapy. It is important that breast angiosarcoma belongs to tumors with a non-specific clinical and radiological picture.
Aim. The study of the biopsies contained aggressive vasomotor hyperplasia.
Description of the case. The presented case concerns the primary angiosarcoma of the right breast in a 56-year-old woman who had never had a surgical procedure before, nor radiotherapy in the area of the breast.
Conclusion. Histopathological examination supported by immunohistochemistry is a reliable and indispensable diagnostic element in the diagnosis of vascular sarcoma.
Keywords. breast biopsy, histopathological examination, immunohistochemistry

Introduction

Breast angiosarcoma occurs in two variants as secondary cancer, associated with lymphatic edema after breast cancer surgery (Stewart-Treves syndrome) or after radiotherapy for breast cancer, usually about 3-12 years after irradiation. The dose of radiation does not correlate with the development of cancer. This type of tumor usually occurs with inflammatory changes in the skin of the breast. The second type, primary, occurs without previous diseases of the breast gland as a painless fast-growing tumor, without accompanying changes on the breast skin.[1-3]

Aim

Therapy of a 56-year-old woman with the presence of an irregular 50 mm size change in the right breast.

Description of the case

In a 56-year-old woman who had no breast surgery or radiation therapy in the past, during the periodic mam-

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Participation of co-authors: A – Author of the concept and objectives of paper; B – collection of data; C – implementation of research; D – elaborate, analysis and interpretation of data; E – statistical analysis; F – preparation of a manuscript; G – working out the literature; H – obtaining funds

Received: 7.03.2020 | Accepted: 13.05.2020
Publication date: December 2020

Ostańska E, Aebisher D, Kaznowska E. *Bartusik-Aebisher D. Primary breast angiosarcoma – a case report*. Eur J Clin Exp Med. 2020;18(4):331–334. doi: 10.15584/ejcem.2020.4.12

mographic examination, asymmetric compaction in the right breast was revealed (BIRADS 4). The patient was referred for further diagnosis to the oncological clinic in the future. The completed ultrasound examination confirmed the presence of an irregular 50 mm size change. A thick-foot biocidal biosynthesis was performed to collect tissue from the change to histopathological examination. The obtained material was fixed in buffered 10% formalin, and tissue and H + E staining was performed. At the same time, in order to accurately assess the extent and size of the pathological change, a breast magnetic resonance (MRI) was performed, confirming the presence of a tumor size 55x50x46cm (BIRADS 6).

Results

In the microscopic examination, the biopsies contained aggressive vasomotor hyperplasia (Figure 1), which was confirmed by immunohistochemistry (positive reactions of endothelial markers CD31 and CD34) (Figure 2). The whole picture was complemented by a high proliferative marker Ki67 (Figure 3). Vascular sarcoma of intermediate grade (G2) was diagnosed. The patient was transferred for further treatment to the reference center.

Discussion

Angiosarcoma - a malignant tumor of vascular origin 1. Angiosarcoma of the breast is a rare malignant tumor and constitutes about 0.04% of the primary malignant tumors of this organ.[1-5]

Angiosarcoma in the breast may be secondary to surgery or radiotherapy usually after 3-12 years 1. This type occurs in older women (average age 67). The primary angiosarcoma occurs in younger women with an average age of around 40 years. A major role in the development of primary angiosarcoma is attributed to exposure to vinyl chloride, arsenic, thorium oxide, local injuries and inflammatory changes induced by foreign bodies.[2-7] Cancer is clinically present as a non-painful tumor. Sometimes with symptoms of tissue pulsation and redness of the skin. It usually does not cause the nipple to contract. Very rarely gives metastases to the lymph nodes. Usually metastasis is present in the lungs, second breast, or in the bones.[1-8] The tumor may be visualized in mammography as a homogeneous mass. In an ultrasound scan, the picture may be heterogeneous: hypoechogenic or hyperechoic. The Doppler ultrasound examination reveals a rich tumor vascularization. In the MRI examination, the extent of the tumor can be clearly visualized, especially in the secondary type after radiotherapy.[1-4] The tumor usually located deeply in the breast parenchyma. The size of the tumor usually exceeds 2 cm.[1-7] In the macroscopic image, the tumor has the appearance of a spongy congested structure or solid fibrous mass in the case of a low-differential tumor.[4] A certain diagnosis of angiosarcoma can be determined

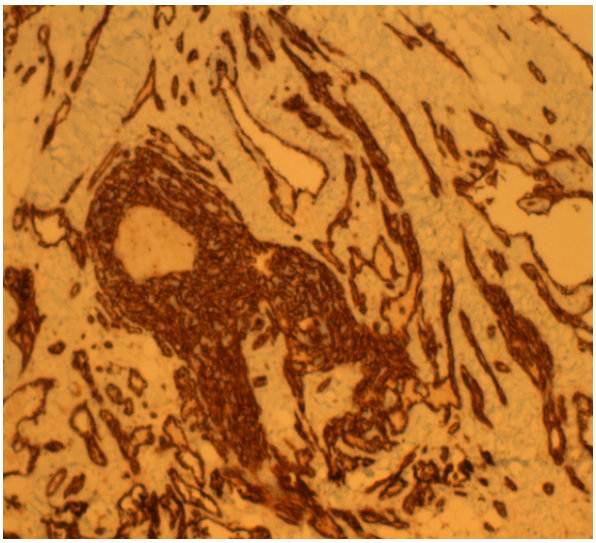

Fig. 1. Breast Angiosarcoma (H&E, 10x)

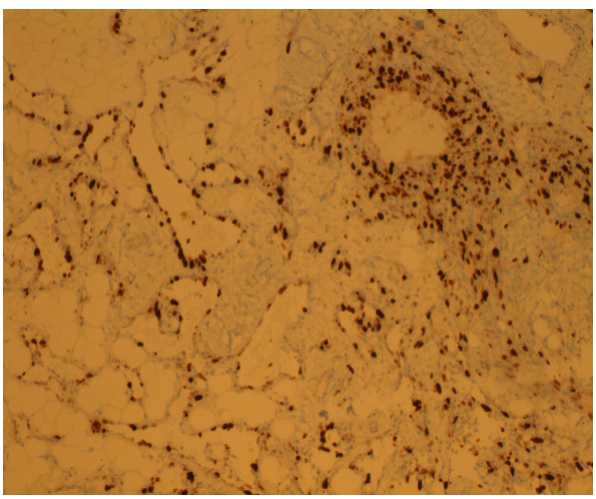

Fig. 2. Breast Angiosarcoma (CD31, 10x)

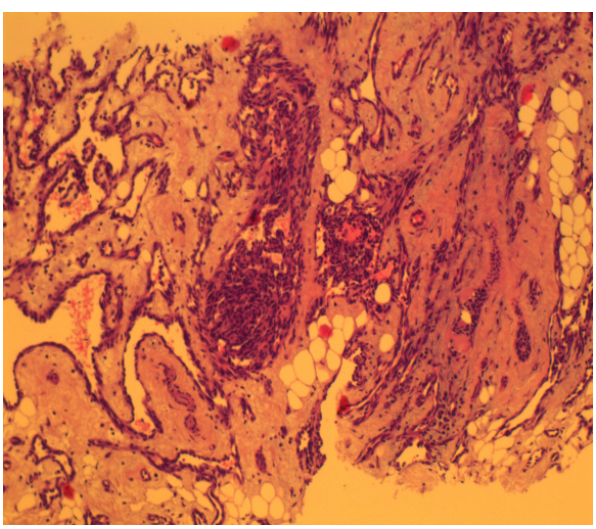

Fig. 3. Breast Angiosarcoma (Ki67, 10x)

based on histopathological and immunohistochemical examination, which exposes the vascular character of proliferation using markers to endothelial cells.

Mainly CD31 and CD34 and factor VIII. A proliferative marker Ki 67 showing a high proliferative index is also helpful. Based on the histopathological picture, three angiocarcinoma groups can be defined depending on the degree of cancer maturity. A well-differentiated cancer (G1), an intermediate-grade tumor (G2), a poorly differentiated tumor (G3). The prognosis of cancer and the form of therapy depend on the degree of differentiation.[1-8] In the treatment of cancer, the main role is played by surgical complete removal of the tumor as a result of quadrantectomy or mastectomy. Adjuvant treatment with radiotherapy and chemotherapy after surgery is usually not effective. There are, however, cases where such combined treatment gives good results and prolongs the time free from tumor recurrence.[2-8] Supplementary treatment may bring benefits in the G3 and large tumors, over 5 cm. Recently, research on vascular endothelial growth factor (VEGF) and the VEGF-R1 and VEGF-C receptor, give hope for targeted anti-angiogenic treatment.[9,10] In histopathological diagnosis it is very important to differentiate this tumor with other malignant, benign and non-neoplastic tumors. Angiosarcoma in G1 and G2 must be differentiated with angiomatosis, pseudoangimatous stromal hyperplasia (PASH) and angiomas. This is especially a challenge when we have a thick-needle biopsy material. Helpful then is the overall picture including imaging tests (benign tumors are less than 2.0 cm), histopathological and immunohistochemical.[11-30]

Conclusion

In histopathological diagnosis it is very important to differentiate this tumor with other malignant, benign and non-neoplastic tumors. Angiosarcoma in G1 and G2 must be differentiated with angiomatosis, pseudoangimatous stromal hyperplasia (PASH) and angiomas. This is especially a challenge when we have a thick-needle biopsy material. Helpful then is the overall picture including imaging tests (benign tumors are less than 2.0 cm), histopathological and immunohistochemical.

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