A rare tumor of the male breast “angiolipoma”
Case report and review of literature

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AIM: Angiolipoma is uncommon lesion in the breast and has clinical importance due to the potential of confusion with malignant breast lesions. To date, there is no defined diagnosis and treatment algorithm for breast angiolipomas. We aim to contribute to the literature for the diagnosis and treatment of angiolipomas with this case report and literature review.

CASE REPORT: A 29-year-old male patient presented with a newly emerged palpable mass in the right breast. Physical examination revealed a palpable mass in the lower inner quadrant of the right breast without any presence of skin changes, nipple discharge or palpable axillary lymph nodes. The lesion was found to be 3 cm in diameter and showed minimal vascularization on Doppler Ultrasound examination. Surgical excision of the lesion was performed and the lesion was diagnosed as angiolipoma.

CONCLUSION: Angiolipomas of the breast in male are rare pathological entities and must always be considered during differential diagnosis, as it can be confused clinically, radiologically and pathologically with other lesions, especially with malignant lesions

KEY WORDS: Angiolipoma, Breast, Male breast lesions

Introduction

Angiolipoma is a benign soft tissue tumor consisting of adipose tissue and blood vessels that is usually localized in the subcutaneous tissues of the trunk and extremities. These tumors, which were defined in 1960, are seen with a frequency of 5-17% and are rarely encountered in the breast [1,2]. Due to its rarity and the potential of clinical, radiological, and pathological confusion with malignant lesions, breast angiolipomas can be challenging tumors. To date, there is still scant data in the literature regarding breast angiolipomas, and only three of them are about male breast angiolipomas [3,4]. Various treatment methods including excision of the mass to mastectomy were reported in the literature, so enriching the literature with such cases will enable the prevention of unnecessary surgeries and the creation of effective diagnosis and treatment algorithms.

In this case report, we aim to contribute to the literature by presenting a case of a male breast angiolipoma treated surgically due to suspicion of malignancy.

Case Report

A 29-year-old male patient presented with a newly emerged palpable mass in the right breast. Past medical history was unremarkable and there was no history of trauma, irritation of the skin or surgery. Physical examination revealed a palpable mass in the lower inner quadrant of the right breast without any presence of skin changes, nipple discharge or palpable axillary lymph nodes.
nodes. Also, a soft and mobile palpable mass was detected on the posterior compartment of the forearm. Breast ultrasonography (US) revealed an oval and well-circumscribed homogeneously hyperechoic mass lesion of 3 cm on the widest axis, in the lower inner quadrant of the right breast, and doppler US showed minimal vascularity (Fig. 1). Surgical excision of the lesion was planned due to the vascular component of the lesion as well as patient discomfort.

The mass lesion was removed under a general anesthetic. The tumor was a maximum of 4 cm wide and well circumscribed by a thin capsule on evaluation of the gross tissue of the pathology specimen. Microscopic evaluation revealed mature adipocytes, multiple small vessels but no malignant features such as mitosis, necrosis, or nuclear atypia (Fig. 2). Based on the pathological features the mass lesion was diagnosed as angiolipoma.

**Discussion**

Lipomas, which are usually detected in the extremities, are rarely encountered in other organs in different forms. Theoretically, they can be found anywhere that contains fat tissue in the body, even in subfacial tissue, and are classified as parosteal, interosseous, visceral, intramuscular or intermuscular according to their origin. Angiolipomas, which are a specialised variant of lipomas, are usually seen in the 3rd decade of life and can be differentiated from classical lipomas by the presence of blood vessels and neuronal components in addition to fat cells. The age of diagnosis in patients with breast angiolipomas ranged from 19 to 75 years old in both sexes. To our knowledge, the patient in our case presentation is the youngest male diagnosed with angiolipoma of the breast. That is why, even in the young patient population, angiolipomas must always be taken into account as a differential diagnosis. The etiology of transformation from lipoma to angiolipoma is not clear, and it has been reported in the literature that vascular proliferation induced by minor traumas to the lipoma may cause this transformation. Contrary to this belief, our patient had no history of trauma.

In the literature, the percentage of adipose tissue to glandular tissue in the breast has been reported as up to 56%, and the fact that these tumors that originate from adipose tissue are underreported in the literature makes these cases interesting. It would be expected that tumors originating from adipose tissue would be observed more frequently in the breast due to the high proportion of fat tissue in the breast. The rarity of these tumors can be explained by the fact that they are usually smaller than 2 cm and asymptomatic, which makes them hard to diagnose.

Initial diagnostic imaging modalities are usually breast ultrasound and mammography. Angiolipomas may exhibit features of nodular density, irregular margins and even microcalcifications that lead to suspicion of cancer. The
echogenicity of angiolipomas on ultrasound is controversial as they exhibit homogeneous or mixed echogenicity. Lesions identified on mammography are usually oval hypodense masses of mixed fat and soft-tissue density with round margins. The presence of non-specific radiological features like mixed echogenicity and vascularity that can be confused with cancer as well as lack of a well-defined follow-up and treatment algorithm, make excision of the lesion inevitable for both final diagnosis and treatment in some cases. We performed total excision of the lesion because of the lesion’s vascular features. For initial diagnosis, advanced imaging modalities such as magnetic resonance imaging (MRI) or positron emission tomography–computed tomography (PET-CT) are unnecessary.

On gross examination, angiolipomas usually appear as yellowish nodules, encapsulated by a thin fibrous capsule, and vary from 2-4 cm in size. Microscopic examination reveals mature adipose tissue and a network of small vessels. Due to its benign nature, the optimal choice of treatment for an angiolipoma is simple excision or follow-up of the lesion with imaging studies. In our case, follow-up was not a choice for the patient as he insisted on surgical removal for pathological clarification in terms of benign and malignant lesions.

In conclusion, angiolipomas of the breast in male are rare pathological entities and must always be considered in differential diagnosis, in terms of benign and malignant lesions. In this case report, we reinforce the literature for future diagnostic and treatment algorithms regarding benign male breast lesions.

References