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

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## A rare tumor of the male breast “angioliipoma”. Case report and review of literature

**AIM:** Angioliipoma 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 angioliipomas. We aim to contribute to the literature for the diagnosis and treatment of angioliipomas 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 angioliipoma.

**CONCLUSION:** Angioliipomas 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:** Angioliipoma, Breast, Male breast lesions

### Introduction

Angioliipoma 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<sup>1,2</sup>. Due to its rarity and the potential of clinical, radiological, and pathological confusion with malignant lesions, breast angioliipomas can be challenging tumors. To date, there is still scant data in the lit-

erature regarding breast angioliipomas, and only three of them are about male breast angioliipomas<sup>3,4</sup>. 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 angioliipoma 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

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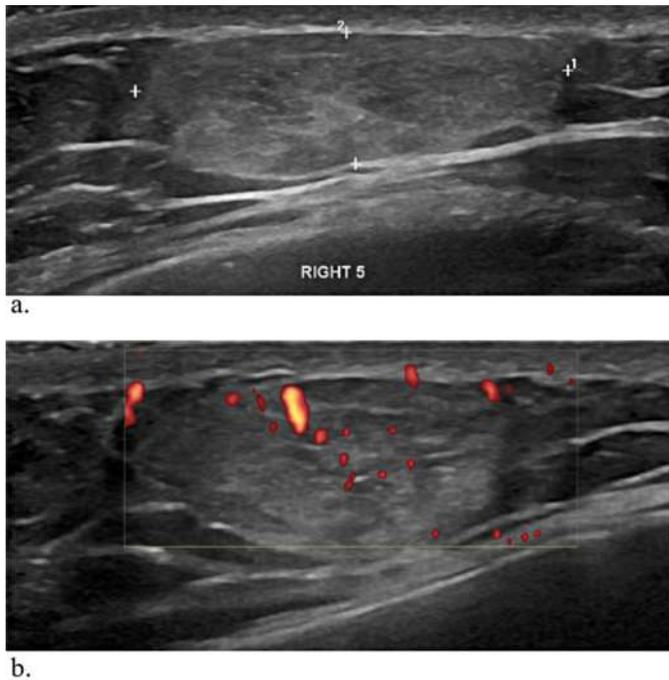


Fig. 1: A) US image showing a well-circumscribed, homogeneous, echogenic mass; B) minimal vascularity in doppler US examination.

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 angioliipoma.

## 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 <sup>5</sup>.

Angioliipomas, which are a specialised variant of lipomas, are usually seen in the 3<sup>rd</sup> decade of life and can be differentiated from classical lipomas by the presence of blood vessels and neuronal components in addition to

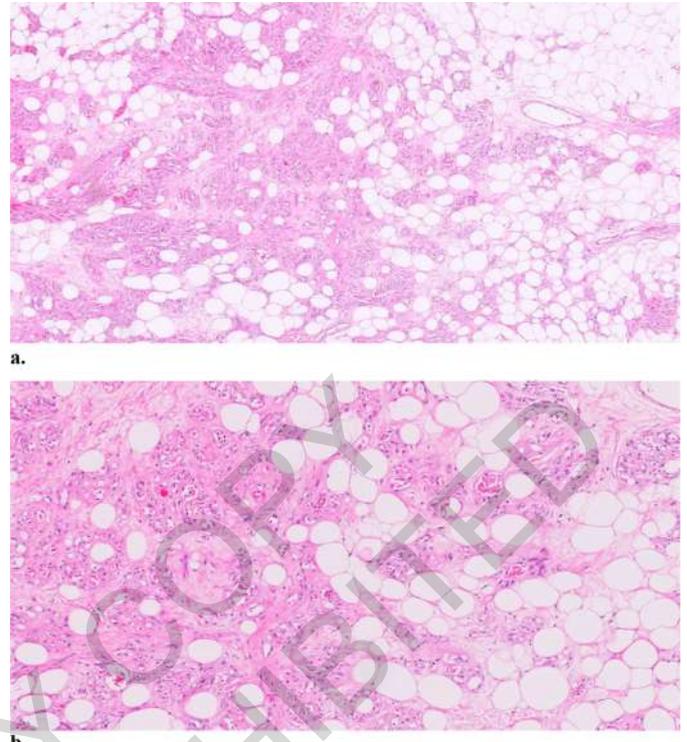


Fig. 2: Microscopic examination of the resected tumor reveals mature adipose and prominent proliferated vascular tissue [hematoxylin and eosin stain, original magnification  $\times 50$  (A) and  $\times 100$  (B)].

fat cells <sup>6</sup>. The age of diagnosis in patients with breast angioliipomas 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 angioliipoma of the breast <sup>3,4</sup>. That is why, even in the young patient population, angioliipomas must always be taken into account as a differential diagnosis. The etiology of transformation from lipoma to angioliipoma 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 <sup>7</sup>. 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. Angioliipomas may exhibit features of nodular density, irregular margins and even microcalcifications that lead to suspicion of cancer <sup>8</sup>. The

echogenicity of angioliipomas on ultrasound is controversial as they exhibit homogeneous or mixed echogenicity<sup>2,9,10</sup>. Lesions identified on mammography are usually oval hypodense masses of mixed fat and soft-tissue density with round margins<sup>9,10</sup>. 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, angioliipomas 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<sup>10</sup>. Due to its benign nature, the optimal choice of treatment for an angioliipoma is simple excision or follow-up of the lesion with imaging studies<sup>3</sup>. 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, angioliipomas of the breast in male are rare pathological entities and must always be considered as a differential diagnosis. It can be confused clinically, radiologically and pathologically with other lesions, especially with malignant lesions. This case report is important as it braces the literature for future diagnostic and treatment algorithms regarding benign male breast lesions.

### **Riassunto**

L'angioliipoma è una lesione rara nella mammella e ha importanza clinica per la potenziale confusione diagnostica con lesioni maligne. Ad oggi, non esiste un algoritmo diagnostico e del trattamento definito per gli angioliipomi mammari. Noi cerchiamo di contribuire alle conoscenze per la diagnosi e il trattamento degli angioliipomi con questo case report e la revisione della letteratura.

Il caso clinico presentato riguarda un uomo di 29 anni portatore di una tumefazione palpabile si recente comparsa a livello della mammella destra. L'esame obiettivo ha localizzato la tumefazione palpabile nel quadrante

interno inferiore del seno destro senza alcuna presenza di alterazioni cutanee, secrezione dal capezzolo o linfonodi ascellari palpabili. La lesione è risultata essere di 3 cm di diametro e ha mostrato una vascolarizzazione minima all'esame eco-doppler. La lesione è stata asportata chirurgicamente ed è stata diagnosticata come angioliipoma.

In conclusione gli angioliipomi della mammella nel maschio sono entità patologiche rare e devono essere sempre considerati in fase di diagnosi differenziale, in quanto possono essere confusi clinicamente, radiologicamente e patologicamente con altre lesioni, soprattutto con lesioni maligne.

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