

## LETTER TO EDITOR

**Breast Hemangioma: A Diagnostic Dilemma**

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**Abstract:**

Vascular tumours of breast are extremely rare and constitute more commonly of angiosarcomas and hemangiomas. Benign hemangiomas constitute 0.4% of all breast tumours. Due to lack of characteristics features, diagnosing them using conventional imaging techniques pre-operatively is very difficult. We present a case of a 14 year old female with complains of slow growing, painless mass of 1 year duration. She had no prior history of trauma or breast disease. On physical examination, no nipple discharge, axillary lymphadenopathy or contra lateral breast abnormality was noted. There was no family history of breast malignancy. Ultrasonography report stated soft tissue mass with increased vascularity and fine needle aspiration cytology had only hemorrhagic aspirate without any ductal cells. Due to the discordance of both the investigations and the patient's unwillingness to not to undergo further invasive investigations, excision of mass was done. On histopathological examination a 5X3X2 cm firm mass with oedematous, pale brown areas along with haemorrhagic areas were seen on cut-section. Microscopy confirmed the diagnosis of cavernous hemangioma. It is important to differentiate accurately benign hemangiomas from their malignant counterpart and also to rule out possibility of an underlying low grade malignancy. Accurate pre-operative diagnosis by ultrasonography and fine needle aspiration pose a great challenge, hence complete excisional biopsy of the lesion is recommended to resolve the clinical dilemma.

**Keywords:** Cavernous Hemangioma, Female Breast, Vascular Tumour

**Introduction:**

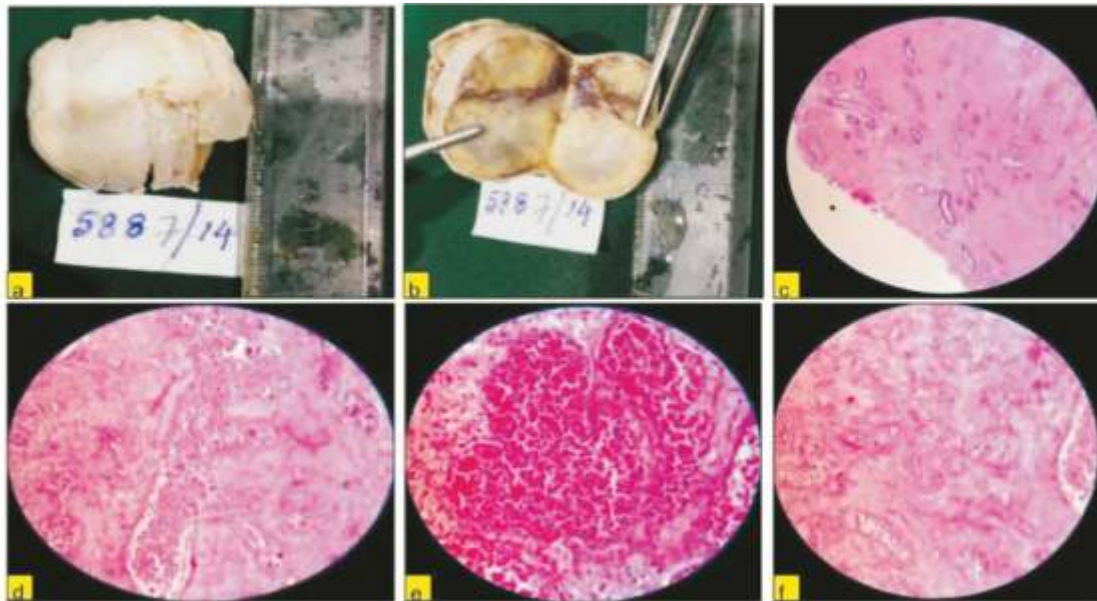
Vascular tumors of breast are exceedingly rare and constitute more commonly of angiosarcomas and hemangiomas [1-5]. Benign hemangiomas occur pre-operatively using conventional imaging in breast are unusual and their incidence is 0.4% of all breast tumours [1, 3, 6]. It's difficult to diagnose imaging modalities as they lack characteristic features [6].

**Case Report:**

A 14 year old female reported in the surgery outpatient department with complains of a slow growing, painful mass of one year duration. There was no history of trauma, fever or previous breast disease. She had no abnormality in contralateral breast, no evidence of nipple discharge and axillary lymphadenopathy. There was no family history of breast malignancy. Ultrasonography showed a soft tissue mass with increased vascularity. No evidence of calcification was seen. Mammography was not done in view of young age of the patient. Fine Needle Aspiration Cytology (FNAC) revealed hemorrhagic aspirate without any ductal cells. Due to the discordance in FNAC and imaging report & on patient request not to undergo any further invasive investigations, excision of the mass for confirmative diagnosis

was done. Histopathology report revealed a 5X3X2 cm, firm mass with cut-section showing pale brown edematous areas along with hemorrhagic areas. [Fig 1(a & b)] On microscopy numerous, varying sizes, thin walled, dilated and

congested blood vessels lined by single layer of flat endothelial lining were seen. [Fig 1 (c, d, e & f)] No cytologic atypia was noted. A diagnosis of cavernous hemangioma was given.



**Fig.1: (a & b) Gross Specimen-5x3x2 cm Firm Tissue Mass. Cut Section shows Edematous, Pale Brown and Hemorrhagic Areas. (c) Micrograph showing Normal Breast Tissue, H & E, X40. (d,e & f) Micrograph showing Numerous, Varying Size Congested and Dilated Blood Vessels Lined by Single Layer of Flat Endothelial Cells, H & E. [(d)-x100, (e)-x400, (f)-X100].**

### Discussion:

Hemangioma occurrence in breast is a rarity and it hardly exceeds 2cm diameter [3]. Rarely do they manifest as clinically palpable lesions [3, 7] as in our case. They are often detected incidentally in cases of lumpectomies or mastectomies and also in post-mortem cases. Age incidence varies from 18 months to 82 years [8]. Hemangiomas are classified as diffuse and localized. Localized hemangiomas are further subdivided into perilobular (microscopic lesions always occurring in extralobular stroma), parenchymal (microscopic

lesions comprising of dilated and congested vessels which may be divided into lobes by fibrous septa), subcutaneous (located in the subcutaneous tissue) and venous (disorderly vascular proliferation comprising mainly of venous channels). Parenchymal subtype is further typed as capillary and cavernous hemangiomas according to varying sizes [1].

Hemangiomas pose a challenge as pre-operative diagnosis, as sonographic or mammographic features are not pathognomonic [6]. On mammography, they have been described as well-

circumscribed, round, oval or lobulated nodule associated with calcifications thus mimicking fibroadenoma. Ultrasonographic features are also variable with some lesions defined as hypoechoic, well-defined and associated with calcifications while others as hyperechoic and poorly circumscribed. Vascularity on colour Doppler sonography is of no diagnostic help [6]. In our case the findings were unusual and suggested a soft tissue mass with increased vascularity.

Even FNAC or core biopsy is of no significant help some times as the contents are haematic material only (40.7% of cases) as stated in a study by Funamizu *et al* [6]. Thus, radiology as well as FNAC and biopsy limitations make the diagnosis of hemangiomas very difficult pre-operatively rendering treating doctor into clinical dilemma.

It is very important to differentiate hemangioma from angiosarcoma especially low grade. Pseudoangiomatous Stromal Hyperplasia (PASH), lymphangioma, angiomas and post-irradiation atypical vascular lesion are other differentials to be kept in mind and excluded [2]. Fletcher CD enumerates four points to assist differentiation of hemangioma from low-grade angiosarcoma namely- size of tumour, benign tumours are generally less than 2cm and may be microscopic; on other hand angiosarcomas are generally larger than 2cm. Vascular channels are non-anastomosing, and are lined by flat endothelial lining which lacks nuclear hyperchromasia in benign lesions, 50% cases of benign hemangiomas show non-neoplastic

muscular vessel in close proximity to lesion and benign vascular structures may be surrounded by smooth muscle [9]. In case of PASH, slit like spaces mimicking vasculature are present, but these spaces are not lined by true endothelial lining rather they are lined by stromal fibroblasts and do not show intraluminal RBC's [2,4]. Angiomas lack circumscription and is a diffuse vascular lesion. In case of post-irradiation atypical vascular lesion, the patient has prior history of radiotherapy and atypical vascular proliferation [2].

In cases where biopsy turns out to be productive in giving a final diagnosis of hemangiomas two approaches can be taken; firstly, to follow-up the patient with imaging modalities and secondly, to go for surgical excision [10]. In hemangiomas, prior approach will suffice, however complete excision of the lesion is recommended to rule out possibility of an underlying malignant lesion and also because most hemangiomas have low malignant potential [2, 6].

#### **Conclusion:**

The use of any single investigation modality is not sufficient and even radiological and cytological tests many a times are unable to resolve the diagnostic dilemma in cases of breast hemangiomas. Vascular tumors should always be considered as a differential diagnosis when FNAC has only hematinic material in suspected cases of breast tumors. Complete excisional biopsy is recommended in cases of hemangiomas, to rule out any underlying malignancy.

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