

CASE REPORT

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The blue alert: an unusual case report of breast hemangioma

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Abstract

Background: Breast hemangiomas are benign vascular lesion occurring within breast tissue.

The main aim of this case report revolves around the importance of follow-up and excision of these benign lesions since they carry the risk of future malignancy. We report herein a histopathologically confirmed case of breast hemangioma diagnosed at routine sonomammogram.

Case presentation: A 58-year-old female presented with skin discoloration and vague mass in the lateral aspect of the left breast for one month. Physical examination, mammography and ultrasonography along with histopathological correlation have been carried out which helped us to arrive at the diagnosis of breast hemangioma.

Conclusion: For lesions with conclusive evidence of benignity in core needle biopsy, follow-up imaging is ideal and for those cases with atypical radiological and pathological findings, a complete surgical resection is mandatory in order to exclude the possibility of an underlying angiosarcoma.

Keywords: Breast hemangioma, Imaging, Mammogram, Skin discoloration

Background

Hemangiomas of the breast are benign vascular tumor which are thin walled, blood-filled vascular spaces, separated by fibrous septa, with extensive fibrosis and sometime phleboliths [1]. Breast hemangiomas are found in 1.2% of mastectomy specimens and 11% of postmortem specimens of female breast [2]. Vascular lesions of the breast are uncommon and mostly benign which include hemangioma, lymphangioma and angiolipoma. Breast hemangiomas are even more rare and represent only 0.4% of all breast tumors [3]. They are mostly located in the subdermal or subcutaneous tissue and are rarely intraparenchymal. These lesions usually cause slight discoloration to the overlying skin due to large draining veins. On mammography, they are oval or lobular in shape and are superficial, solid masses with varied

echotexture which may contain calcifications in sonography. Though vascular in nature hypovascularity has been reported in benign lesions, whereas hypervascularity in malignant lesions. On contrast MRI, the early enhancement of these lesions following contrast administration may raise a suspicious nature. Since hemangiomas do not have pathognomonic imaging features, imaging can be misleading in most cases. Histopathology will confirm the endothelial-lined dilated vascular channels filled with red blood cells. Though benign, surgical excision has been recommended for these lesions as angiosarcoma of the breast may contain well differentiated foci that can closely mimic a benign vascular lesion [4].

Case presentation

A 58-year-old Indian female came to our breast imaging unit with complaints of skin discoloration and vague mass in lateral aspect of left breast for 1 month. The mass was insidious in growth, with no associated pain. There were no other similar skin lesions elsewhere. History of breast or ovarian malignancies was negative in the family. She attained menarche at 14 and had never

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used oral contraceptives. On local examination a mobile, firm mass with bluish red skin discoloration was found which was not associated with nipple retraction or axillary lymphadenopathy. Digital mammogram of both breasts performed showed an irregular, circumscribed, high-density lesion in the upper outer quadrant of left breast with few specks of benign round calcification within the lesion (Fig. 1). This was followed by targeted breast ultrasound that revealed an irregular, solid, parallel oriented, heterogeneous lesion with indistinct margins and no posterior features measuring $\sim 3 \times 2.5$ cm. The lesion was abutting the subcutaneous plane with no associated skin thickening (Fig. 2). On color Doppler, no significant vascularity was detected and on shear wave elastography, the lesion was found to be hard with 168 kPa. Due to indistinct margins and elastography,

the lesion was considered BI-RADS 4 and a core needle biopsy was performed (Fig. 2). Histopathology showed dilated vascular channels of varying caliber representing a hemangioma (Fig. 3). No cellular atypia, necrosis or increased mitotic activity were noted. Hence, patient was advised for a regular follow-up and report to the hospital in case of sudden increase in size.

Conclusion

Breast hemangiomas are rare benign vascular tumors that lack specific imaging features. Hence for lesions with conclusive evidence of benignity in core needle biopsy, follow-up imaging is ideal and for those cases with atypical radiological and pathological findings, a complete surgical resection is mandatory in order to exclude the possibility of an underlying angiosarcoma.

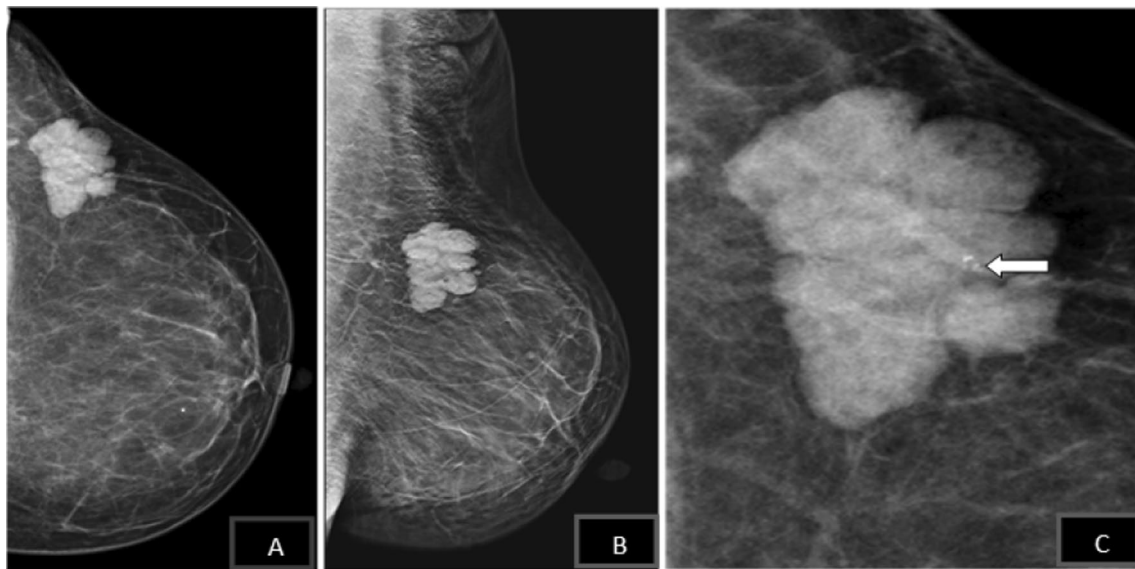


Fig. 1 A 58-year-old female with complaints of skin discoloration and vague mass in lateral aspect of left breast for 1 month. **A, B** An irregular circumscribed macrolobulated high-density lesion with benign calcification in upper outer quadrant. **C** Mammogram image of the same lesion depicting the benign calcification (arrow)

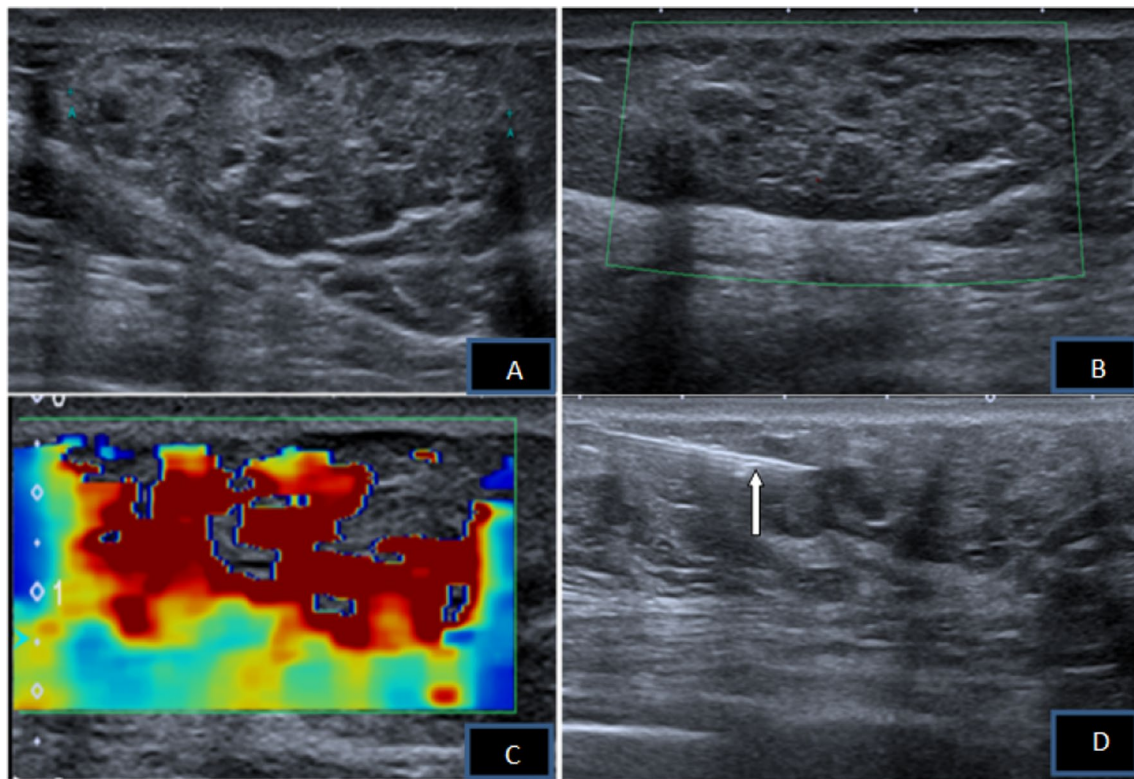


Fig. 2 **A, B:** shows a well circumscribed oval parallel oriented solid heterogeneous lesion with no posterior features and absent vascularity. **C** on shear wave elastography the lesion shows increased stiffness. **D.** Ultrasound guided core biopsy with needle in situ (arrow)

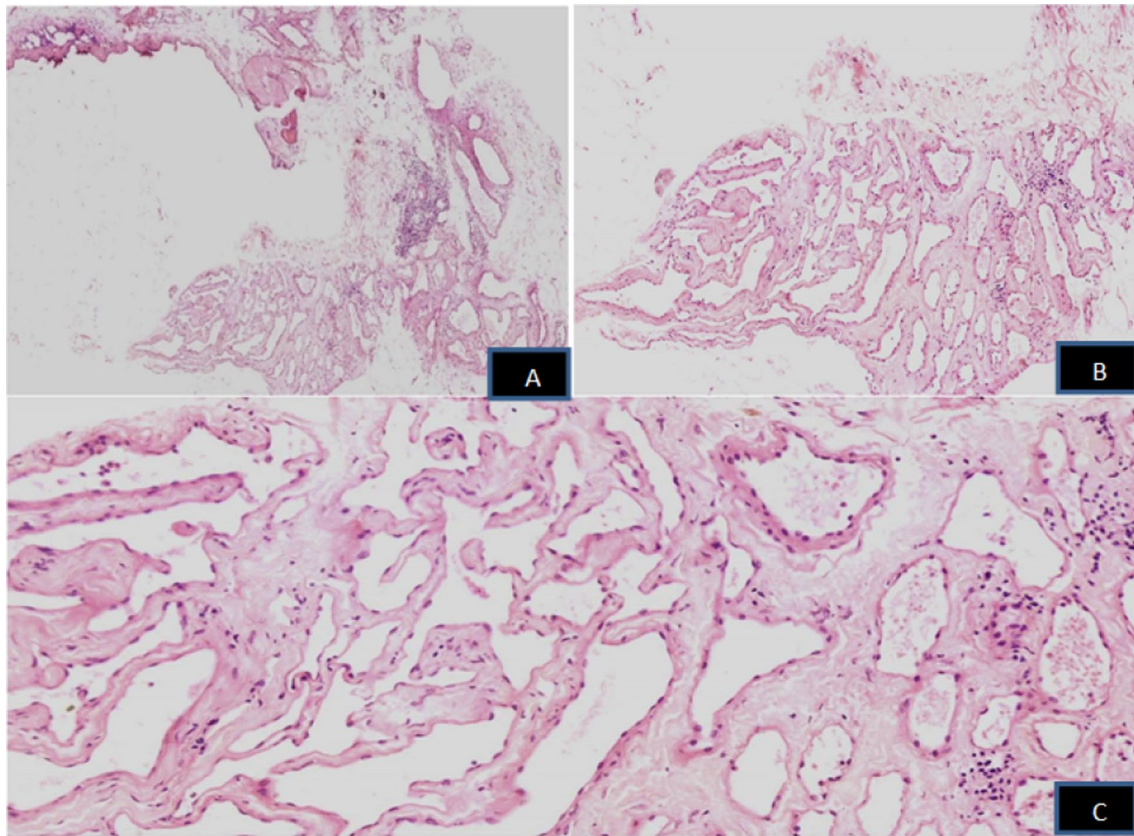


Fig. 3 **A** Sections show focal breast tissue and a fairly circumscribed lesion comprising predominantly of vascular channels H&E X40. **B** Dilated vascular channels of varying caliber surrounded by few inflammatory cells H&E X100. **C**. Vessels are lined by flattened endothelial cells and some showing red blood cells in the lumen H&E X400

Abbreviations

MRI: Magnetic resonance imaging; BI-RADS: Breast imaging reporting and database system score.

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Author contributions

Dr. HG performed sonographic and mammographic evaluation of the patient and was the major contributor for this case report. Dr VV analyzed and interpreted patients data and contributed an important role in preparing the manuscript of the study. Dr BG and Dr S performed Histological study of the biopsied sample and helped us to arrive at the diagnosis. Dr BD and Dr RR coordinated the radiological and histopathological details and ensured patients safety and privacy. All authors read and approved the final manuscript

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Availability of data and materials

All data generated or analyzed during this study are included in this published article.

Declarations

Ethics approval and consent to participate

Institutional ethics committee SRU (Sri Ramachandra University) has waived the need for approval for this case report study.

Consent for publication

Written consent for publication has been obtained from the patient.

Competing interests

The authors declare that they have no competing interests.

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