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DUAL PATHOLOGY IN THE BREAST: A RARE CASE REPORT OF PSEUDOANGIOMATOUS STROMAL HYPERPLASIA OVERLAPPING WITH INVASIVE DUCTAL CARCINOMA IN A POSTMENOPAUSAL FEMALE

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Abstract

Pseudo-angiomatous Stromal Hyperplasia (PASH) is a benign myofibroblastic proliferation of the breast stroma. It is typically hormone-responsive and found more frequently in younger females. The coexistence of PASH with invasive ductal carcinoma in postmenopausal women is uncommon. This is a case of a 51-year-old postmenopausal female, presenting with a painful lump in the left breast. Both the clinical and radiological findings were suggestive of malignancy and the patient was planned for a modified radical mastectomy. The histopathological analysis revealed a dual pathology of invasive ductal carcinoma overlapping with PASH-like areas in the adjacent stroma. This case highlights the importance of accurate histopathological evaluation to differentiate PASH from malignant vascular tumors and to manage the underlying malignancy. Timely and accurate diagnosis of PASH might be helpful in prevention of unnecessary diagnostic and therapeutic interventions. Management of IDC preoperative, surgical and adjuvant therapy can address PASH alongside.

Case Presentation

A 51-year-old postmenopausal female presented with a painful lump in the left breast. The lump was noticed two months back. There was no other significant medical or family history. Physical examination of the lump showed 3.0 x 2.0 centimeter (cm), well-defined, hard lump in the upper inner quadrant of the left breast. There was no skin discoloration or temperature over the mass. The mass moved with the breast tissue, and no axillary lymphadenopathy or clinical evidence of metastasis was noted. A clinical diagnosis of carcinoma of the left breast T2N0M0 was made [**Figure 1**].

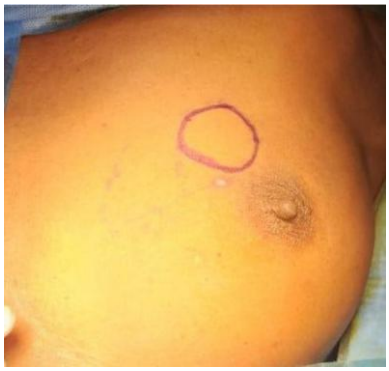

Figure 1 Physical presentation of the left breast showing the marked 3.0 x 2.0 cm hard lump in the upper inner quadrant

She was further subjected to mammography, which revealed an ill-defined, radio-dense lesion of 2.1 x 1.2 cm dimensions with no distinct margins in the left upper inner quadrant. An ill-defined, lobulated, hypoechoic solid lesion of 2.1 x 1.2 cm with specks of calcification and suspicious ductal extension (BIRADS IV B) was observed on ultrasound (USG) screening [**USG image here, if possible**].

[**Figure 2**]

This was followed by a Trucut biopsy which showed fragments of sclerotic breast parenchyma with few acini, attenuated ducts, and focal chronic inflammatory cell infiltrate. Initially, the patient underwent an excision biopsy of the left breast lump [**Figure XX**]. The histopathology of the excision revealed invasive carcinoma with mixed ductal (90%) and lobular (10%) features, suggestive of Invasive ductal carcinoma (IDC) with Pseudo-angiomatous Stromal Hyperplasia (PASH)-like areas in the adjacent breast. Subsequently, the patient underwent a modified radical mastectomy [**Figure 4**].

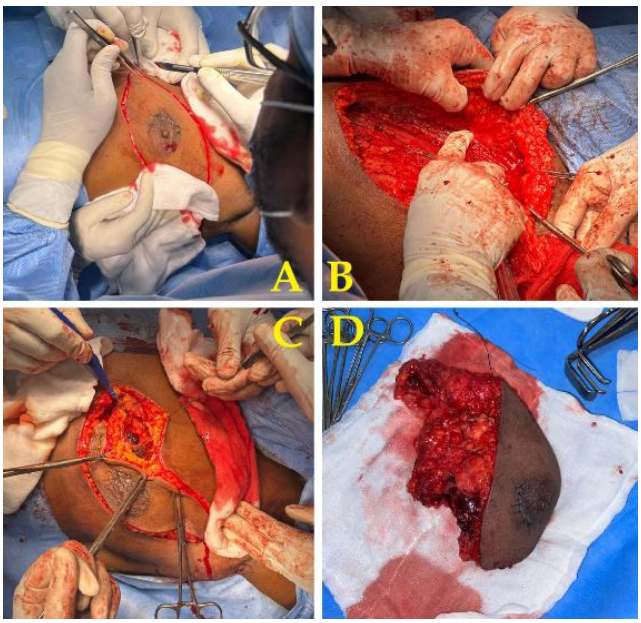

Figure **Intraoperative image showing A-**

B-

C-

D- excised specimen

The final histopathological impression showed mixed ductal and lobular features. Adjacent breast tissue showed PASH and fibrocystic disease which confirmed the diagnosis of was pT2pN0 invasive carcinoma. The previous excision site showed extensive fat necrosis with giant cell reaction and dystrophic calcification [**Figure 4**].

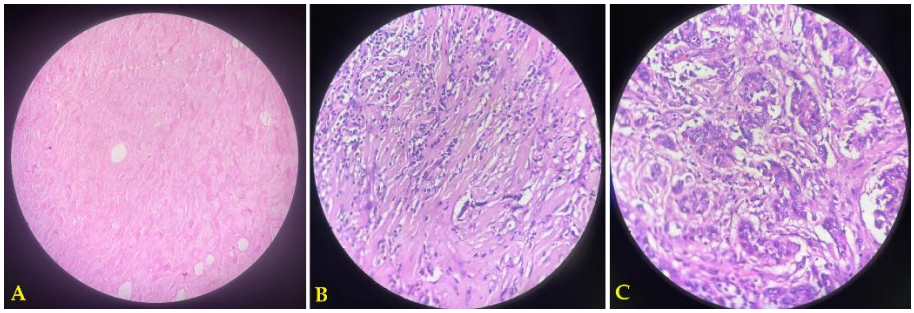

Figure 4 Hematoxylin and eosin-stained slide showing mixed ductal and lobular features; A- scanner view; B- 10x magnification; C- 40x magnification

Patient started on sips followed by liquid and soft-solid diet on post-operative day (POD) 1 and mobilised well. After continuous monitoring drain tube removed on POD 6. The patient was treated with routine intravenous antibiotics, analgesics and other supportive medication as per the standard recommendations, along with limb physiotherapy to prevent lymph edema. The patient was discharged with antibiotic cover and analgesics support with tablet Augmentin (625 mg x 5 days), Tab Chymoral Forte (thrice a day x 5 days), tablet paracetamol (500 mg, thrice a day x 5 days), tablet vitamin B complex (once a day x 5 days), tablet vitamin C (500mg, once a day x 5 days) and advised for follow-up with a review with immunohistochemistry report. The immunohistochemistry report was found to be: Estrogen reporter- positive, PR-negative, HER2NEU- equivocal score 2+.

Discussion

Pseudoangiomatous stromal hyperplasia is a benign proliferative lesion of the breast stroma [**1**]. It is described as a dense collagenous proliferation with pseudo vascular spaces lined by spindle cells [**2**]. It is typically hormone-responsive and predominantly found in those on hormonal therapy. A preponderance has been reported in females on hormonal replacement therapy, oral contraceptives and in premenopausal state [**3**]. A recurrence rate of 22% has been reported after excision. PASH is also noted incidentally along with other breast conditions, and this type of concurrence has been noted in 6.4 to 23% in the published literature [**4**]. As, also observed in this patient. Yoon et al., reported that the diagnosis of PASH was common during routine clinical screenings (50%), clinical symptoms (36.4%), and on screening of other masses (13.6%) [**5**].

Invasive ductal carcinoma is the most common breast malignancy. It is rarely noted in co-existence in postmenopausal

females [**4**]. PASH mimics radiological and histological features of low-grade angiosarcoma, which might complicate the diagnostic results [**6**]. Hence, awareness regarding this co-existence is crucial. Also, PASH is usually influenced by the hormonal intake in postmenopausal females [**4,6**], which was not observed in this patient. This postmenopausal patient lacked hormone therapy exposure.

The management of IDC is tailored to stage, Estrogen Receptor, Progesterone receptor, HER2 expression, grade and patient-specific risk factors, combining multi-modal approach involving surgical excision, chemotherapy and radiation therapy [**7,8**]. The co-existence of IDC and PASH in this patient draws attention towards diagnostic challenge posed by PASH. Its presence might complicate the interpretation of core biopsy, radiological correlation, and margin assessment.

The histopathology of this case was found to be consistent with ER-positive breast carcinoma with HER2/neu equivocal status (IHC 2+). The patient was initiated on endocrine therapy with an aromatase inhibitor attributed to hormone receptor positivity with reference to the standard protocols [**9,10**]. The patient was advised FISH confirmation for the determination of associated HER2 gene and targeted therapy, in view of equivocal status of HER2. The patient is presently on management planned as hormone receptor-positive disease and for associated PASH any specific treatment has not been planned due to benign nature of the tumor. Though, PASH is benign by nature, but misdiagnosis can affect the prognosis of IDC.

Conclusion

PASH can occur in postmenopausal women even without exogenous hormone therapy due to local stromal sensitivity. This case demonstrates a rare coexistence of PASH with invasive ductal carcinoma in a postmenopausal woman. Accurate histopathological evaluation is essential to differentiate PASH from malignant vascular tumors and to prevent misdiagnosis. Management should focus on the underlying malignancy, while PASH requires no specific therapy once adequately diagnosed.

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Figure Legends

Figure 1 Physical presentation of the left breast showing the marked 3.0 x 2.0 cm hard lump in the upper inner quadrant

Figure 2

Figure 3 Intraoperative image

Figure 4 Hematoxylin and eosin-stained slide showing mixed ductal and lobular features; A- scanner view; B- 10x magnification; C- 40x magnification