Pseudoangiomatous Stromal Hyperplasia of The Breast Presenting As A Giant Breast Tumor: A Case Report

Koray Kutlutürk¹, Sertaç Usta¹, Bülent Ünal¹, Neşe Karadağ², Ayşe Nur Akatlı²

¹Department of General Surgery, İnönü University Faculty of Medicine, Malatya, Turkey

²Department of Pathology, İnönü University Faculty of Medicine, Malatya, Turkey

ABSTRACT

Pseudoangiomatous stromal hyperplasia (PASH) of the breast is a benign proliferative lesion of mammary stroma. It is identified as stromal cleavage surrounded by spindle-shaped stromal cells histomorphologically. Generally, it is determined in premenopausal women incidentally during breast biopsy. Clinically, it is rarely emerges as a palpable mass. PASH may be confused with low-grade angiosarcoma, hamartomas and phyllodes tumors in histopathological examination. Here, we report a giant left breast lesion that caused breast asymmetry and pain, and treated by total excision of the mass. The patient was a 39 years old women. Histopathologic examination of the specimen was evaluated as PASH. No additional medical treatment and clinical follow-up was recommended to patient. Within four months of the patient fallow-up, no problem occured.

Keywords: Pseudoangiomatous stromal hyperplasia, breast, benign neoplasms, breast diseases

Introduction

Pseudoangiomatous stromal hyperplasia of the breast (PASH) is a benign breast disease due to excessive proliferation of mammary stroma. They are usually discovered incidentally in breast biopsies of premenopausal women (1). They are rarely encountered as palpable masses in clinical practice. They may be histopathologically misdiagnosed as low-grade angiosarcomas and hamartomas, thus it is important to diagnose this entity.

In this report, a PASH case that presented as breast asymmetry and pain and was treated with excision was presented.

Case Presentation

A 39-year-old female patient admitted to our clinic with a large palpable mass in the left breast and pain. She had noticed a small lump in her left breast about 1.5 years ago during breastfeeding. The mass enlarged in time leading to breast asymmetry, and caused pain since the last two months. Ultrasonography revealed a 95x50 mm in size, hypoechogenic, partially homogeneous lesion with cystic tubular components and regular borders in the left breast (Figure 1). On mammography, the breast parenchyma was assessed as ACR type 3 pattern. An approximately 15x11 cm in size, regular bordered opacification was reported in the left breast parenchyma with no microcalcifications in both breasts (Figure 2). On physical examination, a mobile mass measuring 10 x10 cm and having an elastic consistency was palpated in the upper outer quadrant of the left breast. Preoperative biopsy was not considered necessary due to the very large and lipomatous characteristics of the lesion on preoperative tests and physical examination due to the patient's preference. The entire lesion was excised under general anesthesia (Figure 3). Frozen section evaluation was not performed during the operation due to the benign appearance of the lesion (encapsulated and regular bordered). Histopathology of the excised lesion showed small slit like vessels within hypocellular stroma, showing hyalinization, spindle like cells lining these clefts and lobules consisting of epithelial lining without atypia (Figure 4). Positive immunohistochemical staining with CD34 and Desmin, and negative staining with CD31 and Pancytokeratin was observed (Figure 5). A diagnosis of PASH was made based on marked stromal hypercellularity, and absence of atypical endothelium and mitosis, as well as immunohistochemical findings. No additional medical treatment was recommended to the patient and clinical follow-up was recommended. There was no problem during four-months of follow-up.

Discussion and Conclusions

Vuitch et al. (2) first described PASH in 1986 histomorphologically as stromal cleavages surrounded by spindle stromal cells. It has been reported to be incidentally detected in breast biopsy at a rate of 0.4% - 23 (1, 3). They are rarely encountered as a palpable mass in clinical

Address for Correspondence:

Koray Kutlutürk, Department of General Surgery, İnönü University Faculty of Medicine, Malatya, Turkey
Phone: +90 422 341 06 60 e-mail: kkutluturk@gmail.com

Received: 23.12.2013
Accepted: 02.05.2014

Figure 1. Ultrasonographic view of the mass

Figure 2. Mammographic view of the mass

practice. In our case, it presented as a giant mass 11x11x6 cm in size, weighing 455 g (Figure 3).

In our case, another radiologically benign or malignant pathological lesion accompanying this mass was not detected. It was described as regular bordered opacification on mammography, and the ultrasound revealed a hypoechoic lesion with cystic tubular areas (Figure 1, 2). These tumors cannot be distinguished from fibroadenomas by mam-

Figure 3. Macroscopic view of the mass. (455 g in weight 11x11x6 cm in size)

mography and ultrasonography. Most lesions do not have any mammographic findings; however, the most common mammographic findings were reported as sharply demarcated mass and focal asymmetric density. They are encountered as regular bordered, hypoechoic or isoechoic mass on ultrasonography (4). On ductoscopy, ducts with increased vascularity without further intraductal pathology are observed (5). These findings suggest a radiologically benign mass, and additional tests are generally not required. It has been reported that PASH can be accompanied by breast cancer in 4-25% of patients (4, 6). This high ratio is thought to be related to the patient's only being followed-up without a biopsy or excision due to the benign appearance of lesions without concomitant radiological imaging of malignant or suspicious findings. In most of the studies, microcalcifications were detected on mammography in almost all patients with malignancy that is accompanying PASH (4, 7). Malignant neoplasms infiltrating the lesion have rarely been reported (8). On the other hand, a study intended to determine the relationship between PASH and breast cancer risk in women, concluded that the risk of breast cancer was not increased in women with PASH as compared to women without PASH (7).

Histopathologically, it is important to differentiate PASH from angiosarcoma due to differences in prognosis and treatment (2). In our case, blood cells, atypia or mitotic activity were not seen within cleavages on pathological evaluation, and were distinguished from angiosarcoma (Figure 4, 5)

The treatment of PASH varies depending on the clinical presentation of the disease. In case of incidental diagnosis on a biopsy performed for other pathologies, additional treatment is not required. Excision may be required for persistent pain and cosmetic reasons. Recurrence rate after excision has been reported between 0-22 % (4). A 12-year-old patient who underwent bilateral mastectomy due to recurrent excisions has been reported in the literature (9). Clinical follow-up can be an

Figure 4. Microscopic view of the mass: Slit-like spaces paved with spindle cell in dense collagenous stroma. (HEX100)

Figure 5. Positive immunohistochemical staining with CD34 in spindle cells. (x100)

alternative in selected cases with pathological and radiological benign findings. There is not enough data in the literature relating to medical treatment. Pruthi et al. (10) reported a 39-year-old patient with bilateral progressively growing PASH that was treated with tamoxifen, and stated that the mass disappeared at 6 months. However, this is a limited report of only one patient and larger series are required.

In conclusion, PASH is an extremely rare tumor of the breast, and it may rarely present as a giant mass. In these patients, excision should be considered as first line treatment due to the associated malignant potential and similarity to hamartoma and sarcoma.

Informed Consent: Written informed consent was obtained from patients who participated in this case.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - K.K.; Design - K.K.; Supervision - B.Ü.; Funding - F.U.; Materials - S.U., A.N.A.; Data Collection and/or Processing - S.U.; Analysis and/or Interpretation - N.K., B.Ü.; Literature Review - K.K., S.U.; Writer - K.K., A.N.A.; Critical Review - B.Ü., N.K.

Financial Disclosure: The authors declared that this study has received no financial support.

Conflict of Interest: No conflict of interest was declared by the authors.

References

1. Ibrahim RE, Sciotto CG, Weidner N. Pseudoangiomatous hyperplasia of mammary stroma. Some observations regarding its clinicopathologic spectrum. *Cancer* 1989; 63:1154-1160. (PMID: 2917318) [\[CrossRef\]](#)
2. Vuitch MF, Rosen PP, Erlandson RA. Pseudoangiomatous hyperplasia of mammary stroma. *Hum Pathol* 1986; 17:185-91. (PMID: 3949338) [\[CrossRef\]](#)
3. Polger MR, Denison CM, Lester S, Meyer JE. Pseudoangiomatous stromal hyperplasia: mammographic and sonographic appearances. *AJR Am J Roentgenol* 1996; 166: 349-352. (PMID: 8553945) [\[CrossRef\]](#)
4. Hargaden GC, Yeh ED, Georgian-Smith D, Moore, RH, Rafferty EA, Halpern EF, McKee GT. Analysis of the mammographic and sonographic features of pseudoangiomatous stromal hyperplasia. *AJR Am J Roentgenol* 2008; 191:359-363. (PMID: 18647902) [\[CrossRef\]](#)
5. Gur AS, Unal B, Edington H, Kanbour-Shakir A, Soran A. Pseudoangiomatous stromal hyperplasia (PASH) of the breast: intraductal appearance. *J Obstet Gynaecol Res* 2009; 35:816-818. (PMID: 19751351) [\[CrossRef\]](#)
6. Gresik CM, Godellas C, Aranha GV, Rajan P, Shoup M. Pseudoangiomatous stromal hyperplasia of the breast: a contemporary approach to its clinical and radiologic features and ideal management. *Surgery* 2010; 148:752-758. (PMID: 20708765) [\[CrossRef\]](#)
7. Degnim AC, Frost MH, Radisky DC, Anderson SS, Vierkant RA, Bo-ughey JC, Pankratz VS, Ghosh K, Hartmann LC, Visscher DW. Pseudoangiomatous stromal hyperplasia and breast cancer risk. *Ann Surg Oncol* 2010; 17:3269-3277. (PMID: 20567920) [\[CrossRef\]](#)
8. Damiani S, Eusebi V, Peterse JL. Malignant neoplasms infiltrating pseudoangiomatous stromal hyperplasia of the breast: an unrecognized pathway of tumour spread. *Histopathology* 2002; 41: 208-215. (PMID: 12207782) [\[CrossRef\]](#)
9. Singh KA, Lewis MM, Runge RL, Carlson GW. Pseudoangiomatous stromal hyperplasia. A case for bilateral mastectomy in a 12-year-old girl. *Breast J* 2007; 13:603-6. (PMID: 17983404) [\[CrossRef\]](#)
10. Pruthi S, Reynolds C, Johnson RE, Gisvold JJ. Tamoxifen in the management of pseudoangiomatous stromal hyperplasia. *Breast J* 2001; 7:434-439. (PMID: 11843858) [\[CrossRef\]](#)