

Pseudoangiomatous Stromal Hyperplasia (PASH) of the Breast

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Abstract

Pseudoangiomatous Stromal Hyperplasia (PASH) is one of the rare benign breast lesions. It typically occurs in women of reproductive age however it is reported in postmenopausal women under hormonal therapy. PASH is frequently incidental finding in breast biopsies but it may also manifest as palpable mass. We report a case of PASH which correlates with radiological and pathological findings. The knowledge of this rare lesion may be of importance to surgeons & radiologists for proper adequate management.

Keywords: Pseudoangiomatous stromal hyperplasia; PASH; Benign breast disease

Introduction

PASH of the breast is a benign myofibroblastic process, first described by Vuitchet et al. in 1986. The age of the diagnosis varies between 14 to 74 years. The size of PASH usually ranges between 0.6-12 cm with most cases ranging from small to medium size [1]. The etiologic factors of PASH are unknown, but most investigators think that it represents a proliferative response of myofibroblasts, probably to hormonal stimuli [2]. Imaging features are not sufficiently specific to allow for a prospective diagnosis. Histological confirmation, preferably with core biopsy, should always be considered [3]. The following case report illustrates the radiographic abnormalities caused by this lesion.

Case Report

28 year-old female patient presented herself with enlarged both breasts. On clinical examination, the patient had large both breasts with bilateral palpable masses. The patient was initially examined with mammography which showed bilateral enlarged dense breasts with bilateral multiple variable sized masses however no speculation or calcification (Figure 1). Breast ultrasound was done with a high frequency (8-10 MHz) linear array head, which showed bilateral diffuse enlarged breasts with multiple variable sized hypoechoic masses seen scattered inside (Figure 2). The masses were well defined with smooth margin and posterior acoustic enhancement. No detected cystic degeneration. Magnetic Resonance Imaging (MRI) was performed with a 3 T MR-scanner and a dedicated breast coil. The examination protocol consisted of T1-weighted image (T1WI) (Figure 3), T2-weighted image (T2WI) (Figure 4), short-tau inversion recovery (STIR) and Diffusion weighted imaging were also obtained (Figure 5), as well as dynamic

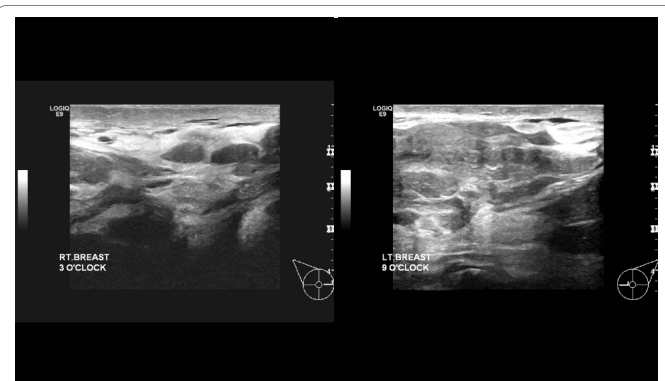


Figure 2: The breast ultrasound showed bilateral diffuse enlarged breasts with multiple variable sized hypos echoic masses seen scattered inside.



Figure 3: Axial T1WI revealed bilateral enlarged breasts with bilateral multiple variable sized rounded masses are seen scattered inside.

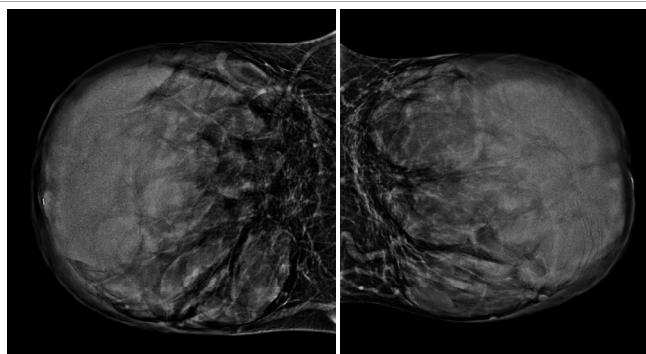


Figure 1: Mammography showed bilateral enlarged dense breasts with bilateral multiple variable sized masses noted.

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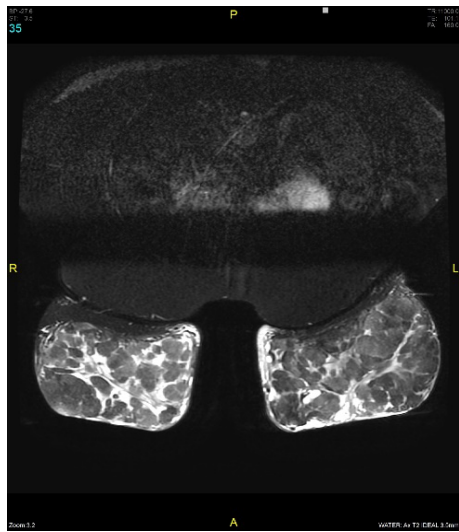


Figure 4: Axial T2WI revealed bilateral enlarged breasts with bilateral multiple variable sized rounded masses are seen scattered inside.

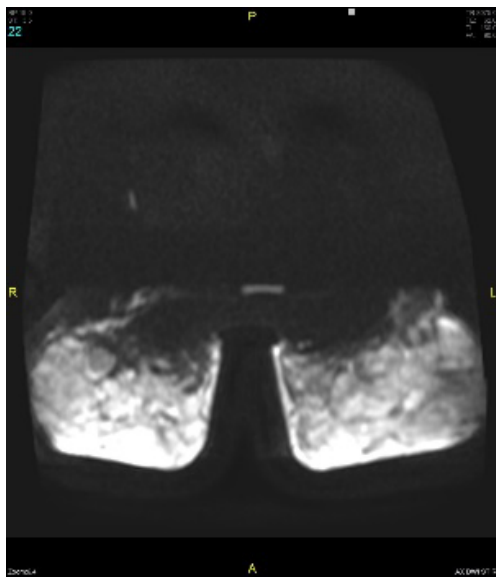


Figure 5: Axial DIFFUSION WI revealed bilateral enlarged breasts with bilateral multiple variable sized rounded masses are seen scattered inside.

contrast-enhanced magnetic resonance imaging (DCE-MRI) after the administration of gadolinium (Figure 6). MRI show bilateral enlarged breasts with bilateral multiple variable sized rounded masses are seen scattered inside showing type I kinetic time intensity curve (Figure 7). Finally biopsy was taken and gross pathology revealed PASH.

Discussion

Pseudoangiomatous stromal hyperplasia (PASH) is an uncommon benign proliferative breast tumor composed of complex, anastomosing slit-like pseudovascular spaces, which are either acellular or lined by slender spindle-shaped stromal cells. Our case presents clinically as a bilateral multiple palpable breasts masses with the clinical and radiological assessment coping bilateral multiple fibroadenoma and also MRI findings cope with multiple bilateral lesions with benign criteria however the histo-pathological findings cope with PASH. Yoo



Figure 6: Axial post contrast WI revealed bilateral enlarged breasts with bilateral multiple variable sized enhancing rounded masses are seen scattered inside.

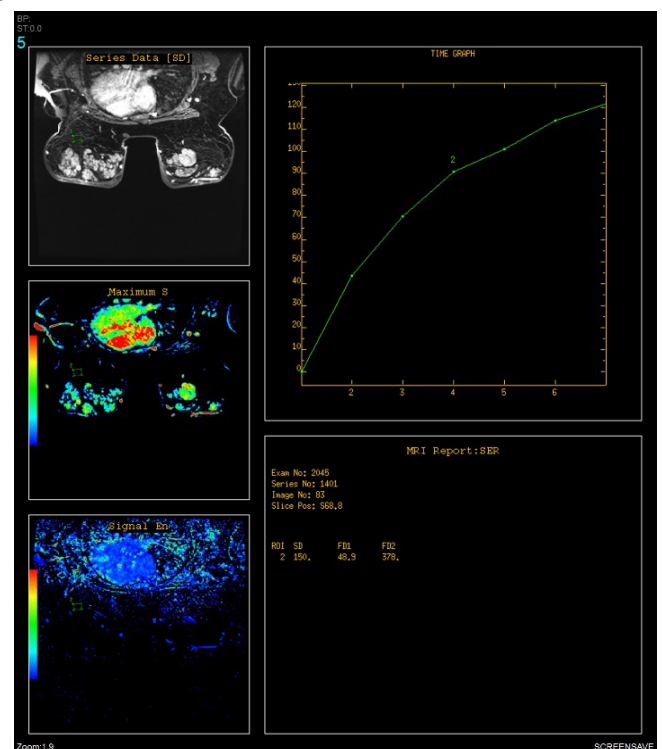


Figure 7: MRI show bilateral multiple variable sized rounded enhancing masses are seen scattered inside showing type I kinetic time intensity curve.

et al. [4] had reported that clinical and radiological findings of PASH resemble those of fibroadenoma and all imaging modalities have no specific features to characterize PASH and distinguish it from other pathologic entities. In asymptomatic patients it usually presents as a breast imaging-reporting and data system (BI-RADS) type 3 lesion, suggesting a probably benign lesion [1]. In our case mammography revealed bilateral enlarged dense breasts with bilateral multiple variable sized masses noted and this agree with Solomou et al. [1] stated that say mammography of PASH can reveals single or multiple non-calcified masses, with well circumscribed margins, usually ranging from 1-10

cm, but it can also present as an asymmetric appearance of the gland whose size or density increases over time [1]. On our ultrasound they showed bilateral diffuse enlarged breasts with multiple variable sized hypo echoic masses seen scattered inside and this agree with Hargaden et al. [5] that say ,PASH has no characteristic appearance, including both its margins and echogenicity. It usually presents as a round or oval solid single or multiple masses, mainly hypoechoic and rarely hyperechoic with a central hypoechoic area. The presence of acoustic shadow is not very often [5]. On MRI images our case show bilateral enlarged breasts with bilateral multiple variable sized rounded masses are seen scattered inside showing type I kinetic time intensity curve and this agree with Mai et al. [6] that say nodular PASH has the same characteristics as a fibroadenoma, with rapid enhancement in the two minutes after contrast injection, followed by a slowly increasing enhancement during the rest of the examination. While diffuse PASH presents as a focal or segmental non-mass like clump of enhancement with a plateau or persistent phase [6]. PASH can be a relatively common incidental finding at breast biopsy. PASH radiologically mimics that of breast fibroadenoma, on histology, it is characterized by the presence of open slit-like spaces in dense collagenous stroma which is lined by a discontinuous layer of flat, spindle-shaped myofibroblasts with bland nuclei. It can also contain complex anastomosing spaces that may be confused with an angiosarcoma at histologic analysis [7].

Conclusion

Pseudoangiomatous stromal hyperplasia (PASH) is a rare benign breast lesion belonging to benign myofibroblastic process. PASH radiologically mimics that of breast fibroadenoma and histologically

it may be confused with an angiosarcoma. PASH is considered to be a lesion of BI-RADS 3, which means probably benign. Proper diagnosis of this rare breast lesion is important for proper treatment.

Ethical Approval

Approval of the medical ethics committee was obtained for publication of this case report and accompanying images. The case was done in KAAH, KSA and ministry of health in October 2016.

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