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PASH: A Clinical Case with Surgical Indication

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Abstract

Pseudoangiomatous stromal hyperplasia (PASH) is a benign lesion characterized by the proliferation of myofibroblasts. Its presentation ranges from an incidental imaging finding to a palpable mass causing gigantomastia or breast asymmetry. Therapeutic options vary from active surveillance to surgical intervention, including conservative surgery or mastectomy, with or without reconstruction.

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Introduction

Pseudoangiomatous stromal hyperplasia (PASH) is a benign proliferation of myofibroblasts, first described in 1986 by Vuitch et al [1,2].

PASH is a benign mesenchymal proliferative lesion of the breast that may present clinically as a mass and, from a histopathological point of view must be differentiated from low-grade angiosarcoma and phyllodes tumors [3]. Its clinical manifestations vary widely from incidental microscopic findings to palpable masses, gigantomastia, and asymmetry [4].

The exact cause and pathogenesis of PASH remain controversial. It has been postulated to have a hormonal etiology, secondary to a high density of progesterone receptors, or to represent a hormone-dependent process [5]. This hypothesis is supported by the fact that PASH occurs primarily in premenopausal women or in older women undergoing hormone replacement therapy [3,4,6].

PASH has been identified incidentally on mammography screening in approximately 53% of patients and as a palpable mass in about 44% [2,7]. The management of patients with a core biopsy diagnosis of PASH remains not well defined. Treatment options include

either clinical surveillance or surgical intervention. Surgical approaches range from complete excision of the lesion with subsequent clinical follow-up to mastectomy with reconstructive surgery for diffuse disease [2,8].

Here, we report a case of complete excision in a patient with diffuse PASH who presented with rapid unilateral breast enlargement.

Clinical Case

A 29-year-old female presented to our center with a unilateral breast enlargement. She had no history of prior surgeries or pregnancies. Breast development had not occurred until one year ago; however, rapid enlargement was noted over the past two months (Fig 1A and B).

Her height and weight were 164 cm and 59 kg, respectively (body mass index [BMI] = 21,9 kg/m2). She had no history of drug use or any remarkable past or family history of breast cancer. Blood tests revealed no hormonal imbalance. PASH was diagnosed based on an ultrasound-guided core needle biopsy of the breast (five specimens). Breast enlargement continued for approximately three weeks after her first visit to our clinic, with rapid changes in size (Fig 1C and D).

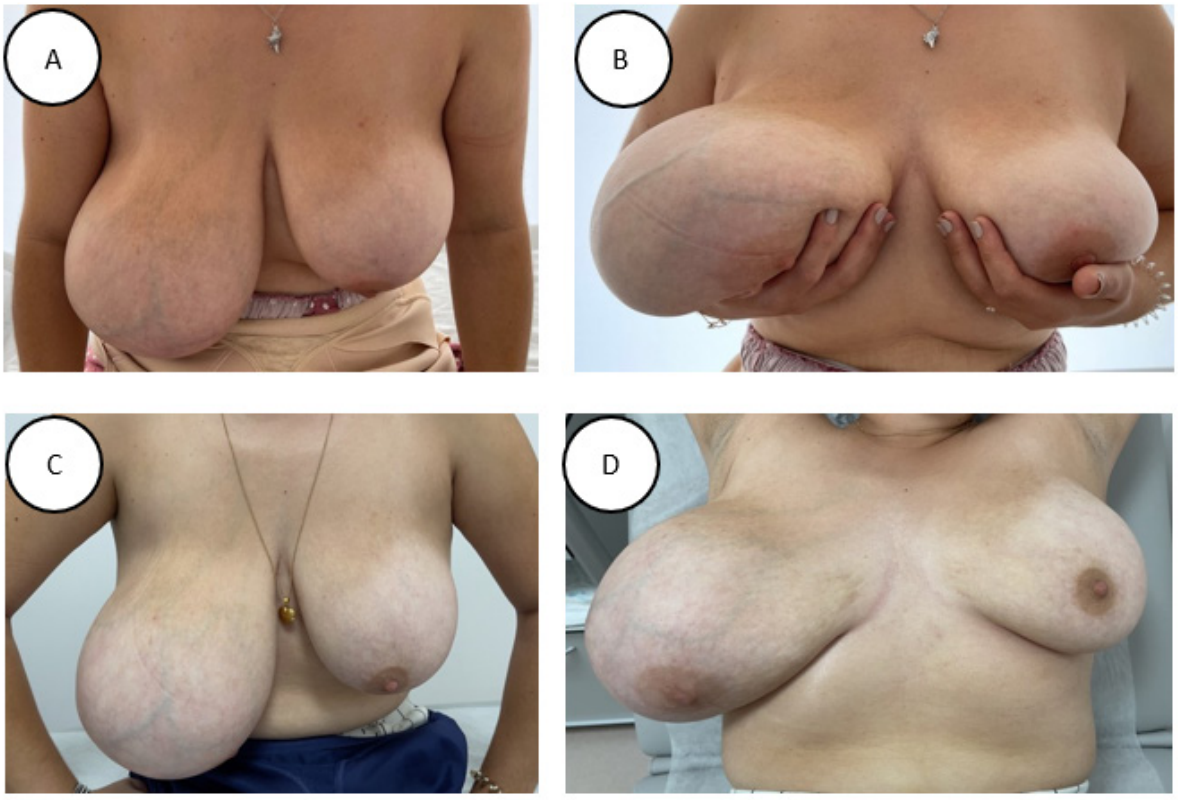

Figure 1: Preoperative Clinical Photos. (A, B) Photographs at the First Visit. (C, D) Photographs at one Month after the First Visit, showing a rapid size increase.

We considered total mastectomy or breast reduction as surgical treatment options. Taking into account the patient's age and emotional well-being, and given that the nipple-areolar complex (NAC) was ptotic for implant-based reconstruction after nipple-sparing mastectomy, we performed bilateral breast reduction to simultaneously decrease breast volume and elevated the NAC. Breast reduction was performed using the Wise pattern incision, with superomedial pedicles **(Fig 2A and B).**

The right breast specimen (PASH) measured 165x140x80mm and weighed 1295 gr. **(Fig 3)**.

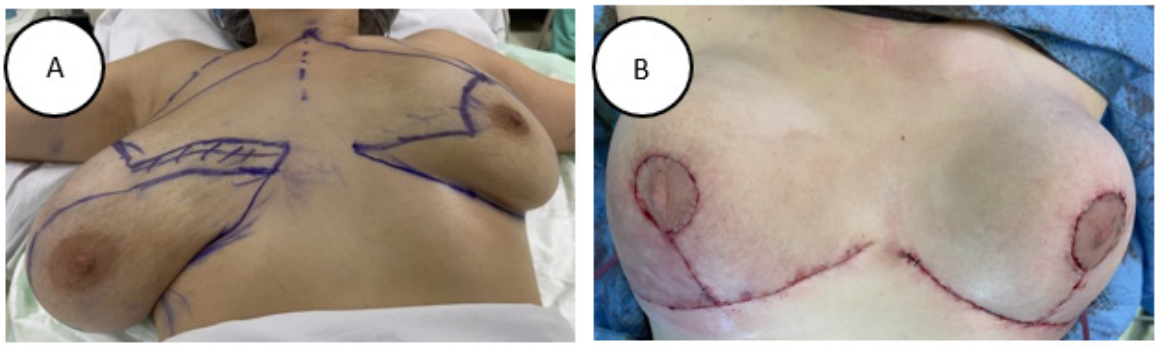

Figure 2: Operative clinical photos. (A) Pre-operative. (B) Immediate pos-operative outcome.

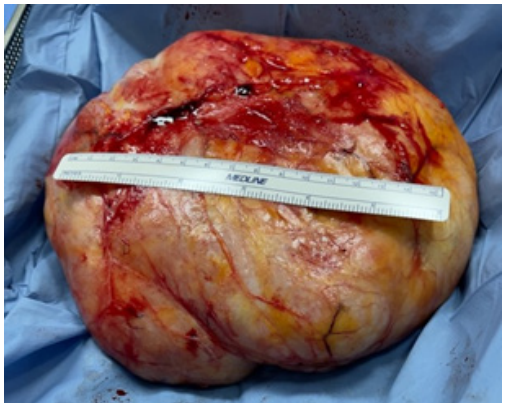

Figure 3: Specimen Result.

No immediate postoperative complications, such as hematoma, infection, skin necrosis, or wound dehiscence were observed. Hematoxylin and eosin staining revealed pseudoangiomatous spaces extending into the perilobular and intralobular stroma, with myofibroblast proliferation noted between the normal lobules in both breast specimens. The final diagnosis of PASH was confirmed. The patient expressed high satisfaction with the surgical outcome **(Fig 4A and B).** At a 3-year follow-up, ultrasound examination showed no evidence of recurrence.

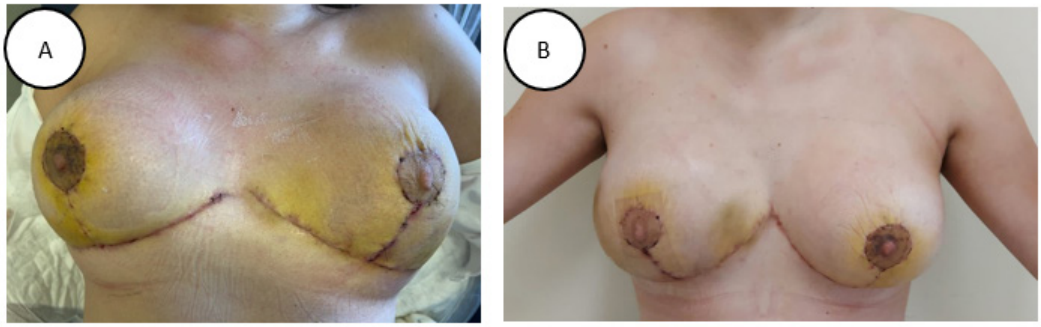

Figure 4: Surgical results and follow-up clinical photographs. (A) Clinical photograph at one week postoperatively (B) Clinical photograph at 3 weeks postoperatively.

Discussion

Pseudoangiomatous stromal hyperplasia is a rare but benign breast lesion that predominantly occurs in premenopausal women. It is often discovered incidentally during routine biopsies performed for either benign or malignant breast conditions [9]. Most of the available literature consists of case reports focusing on diagnosis—particularly imaging findings and histopathological features— while standardized treatment protocols have yet to be established [10].

Imaging of PASH lesions on mammography and typically reveals well-circumscribed, oval or round masses. These lesions are often homogeneous, though some may appear heterogeneous without features indicative of malignancy [9].

Pruthi et al reported reported that PASH responded to the selective estrogen receptor antagonist tamoxifen in a patient with painful, enlarging, estrogen receptor-positive PASH [10]. After tamoxifen therapy, the patient reported symptomatic relief, including decreased breast pain and a reduction in breast size; however, residual PASH tissue persisted and even enlarged after the completion of therapy.
In cases with benign imaging features, confirmed PASH pathology, and no history of breast cancer, clinical and imaging follow-up have been suggested [11].

Surgical resection is not necessary in all cases; excision of the masses can be therapeutic. However, surgery may be indicated if there is significant breast enlargement, rapid growth, or asymmetry due to unilateral involvement. In some instances, total mastectomy has been performed [12]. Interestingly, while some patients who underwent breast reduction did not experience complications, others required total mastectomy due to recurrence after reduction surgery [13,14].

Conclusion

PASH usually presents as a focal benign process. Imaging findings are not specific to PASH, and establishing imaging-pathologic concordance is essential for accurate diagnosis. Treatment options typically include either clinical surveillance or surgical intervention.

We present a case in which conservative surgery resulted in a good outcome for the patient, with no recurrence at 3-year follow-up.

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