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CASE REPORT

Unusual Unilateral Breast Enlargement - A Case Report

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ABSTRACT

Breast asymmetry is a common occurrence among females, often stemming from hormonal, genetic, embryological, or idiopathic factors, which can significantly affect self-perception. While mild asymmetry is natural, severe cases can lead to self-consciousness and impact overall appearance. We present an unusual case of progressive unilateral left breast hypertrophy in a 19-year-old woman, seven years post-menarche, without discernible underlying etiology. Despite hormonal profiling suggesting the luteal phase, no definitive cause was identified. The patient underwent left breast reduction surgery due to cosmetic concerns with favourable acceptable results. Histopathology revealed a giant fibromatous lesion.

Keywords: Breast asymmetry, Breast Hypertrophy, Fibroadenoma,

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Introduction

Breast asymmetry may be a natural phenomenon occurring in most females. This phenomenon has also been successfully confirmed in this era, through advanced imaging studies. However, those with severely asymmetrical breasts are highly prone to become self-conscious as this may impact their overall physical appearance [1]. Breast asymmetry, especially on the basis of size, may be a result of dissimilar volume of breast cells and is a common complaint among women especially during their early stages of breast development. This may be influenced by various hormonal, genetic, embryological as well as idiopathic factors. Under these circumstances, surgical intervention, depending on the preference of the patient's breast, can be a life changer [1].

Discussion delves into hormonal influences, menstrual phase-related breast tissue changes, and the rarity of unilateral breast hypertrophy post-menarche. Treatment options, from surgical interventions to medical therapies like tamoxifen, prioritize patient preference. Subcutaneous mastectomy is highlighted as a promising approach, offering favorable outcomes with reduced recurrence rates. This case underscores the complexity of managing unilateral breast hypertrophy and the importance of tailored treatment strategies. Understanding the multifactorial nature of breast asymmetry is crucial for effective interventions and patient satisfaction. Individualized treatment approaches, informed by patient preference, are essential for optimizing outcomes and ensuring patient well-being.

We bring here, an unusual case of a young female presenting 7 years after her menarche with a progressive, unilateral left breast hypertrophy without any explainable underlying etiology.

Case Report

A 19 years old, unmarried female with no known co morbids and a BMI of 18.6 presented with progressive left breast enlargement for the past three years. On physical examination the left breast was grossly larger than the right with a normal appearing nipple and areola on both the breasts (Fig 1 AB).

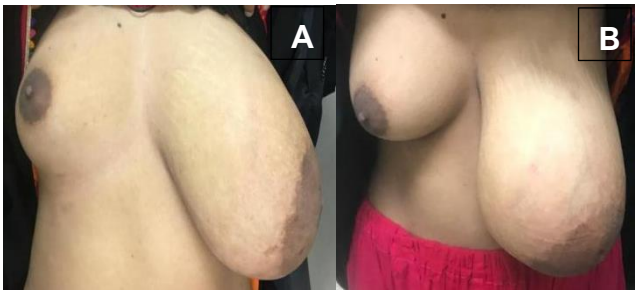

Fig 1. Asymmetrical contour of the left breast with reference to the right breast.

There was no palpable mass or swelling present. Her bilateral breast and axilla examinations were otherwise normal. The patient had her first menstrual period at the age of 12 years and since then it has been regular. According to the patient, the left breast was initially smaller in size and has progressed with time. However, it was not associated with any cyclic menstrual pain or discharge. Over the passing years it had increased in size and the patient started feeling breast heaviness on the left side which, at that time, was her main concern. Her past medical and surgical history is insignificant. Her family history is not significant for breast cancer or any breast related pathology. On ultrasonography, the right breast had a normal fibro fatty glandular structure whereas the left breast showed an increase in its fibro glandular element without any discernible abnormality. However, there was no evidence of cystic or solid mass in either of the breasts therefore FNAC was not carried out. The left breast showed few prominent ducts one of which was at a 10 o'clock position and measured up to 1.8mm in the anteroposterior diameter. In order to rule out other possibilities, a hormonal profile (Table I) was done which showed all the hormones within the reference range, supportive of the patient being in the luteal phase, except Serum Prolactin which was found to be on the higher side. Rest of the routine investigations were normal. Serum level of estradiol or total estrogen was not checked at that time.

Table I - Hormonal profile of the patient

TEST NAME	RESULTS	NORMAL LAB VALUES (depending on patient's age and gender)
S.Testosterone	0.29ng/ml	0.046-0.383 ng/ml
FSH	3.30mIU/ml	1.7-7.7 mIU/ml (luteal phase)
LH	6.25mIU/ml	1.3-10.8 mIU/ml (luteal phase)
Prolactin	29.10ng/ml	4.79-23.3ng/ml
TSH	2.171 µIU/ml	> 2 µIU/ml

The patient was provided information regarding all the possible treatment options regarding her condition as well as the outcomes. She was also given information regarding breast amputation specially when her breast enlargement was beyond 20 cm. On the basis of the findings on breast examination, the ultrasonography and the preference of the patient after a thorough discussion, left breast reduction surgery was performed. On the day of surgery, breast markings were determined while the patient was in a standing position. Pre operatively inverted T pattern excision was marked. Peroperatively, the markings were confirmed and the incision was made. Nipple-areolar complex was based on the inferior pedicle. The width of the inferior pedicle was kept 10 centimeters. Per operatively nodularity noted which was neither appreciable previously during examination nor on ultrasound. Breast lump was removed from the medial, lateral and upper middle portion of the breast with a partial loss of nipple areolar complex. No undermining of the inferior pedicle was performed (Fig 2). The lump removed was then sent for histopathological examination.

Fig 2. Lump removed from the left breast.

Skin incisions were closed and suction drain was placed in the left breast (Fig 3 A, B &C).Post-operative period went uneventfully. Patient is being followed fortnightly.

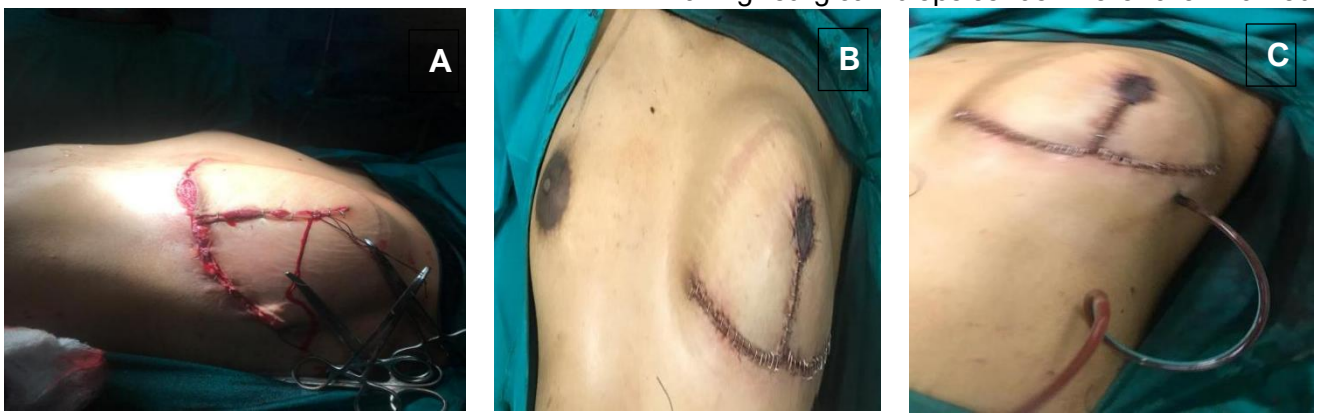

Fig 3: A,B,C Closure of inverted T incision and drain placement in the left breast

The histopathological examination of the tissue sample sent postoperatively consisted of 2 two skin covered tissue pieces and three pieces without the skin. The skin covered specimens revealed a well circumscribed breast lesion exhibiting proliferation of gland and stroma. Both pericanalicular and intracanalicular patterns of proliferation were seen. Some acini were compressed into linear branching by expanding stroma while some retained open lumina. Increased mitotic figures, stromal overgrowth and atypia are nor seen however the features of the biopsy sample are compatible with a giant fibromata. Size of the largest fibroadenoma being 12x12x3 cm.

Discussion

Human breasts are prone to undergo changes during different stages of life. Women can develop a disparity in size of their bilaterally symmetrical breasts during pregnancy and lactation, when hormonal status is greatly altered [1]. During the reproductive period, at a cellular level, the premenstrual breast differs from the post menstrual breast as they are one of the hormonally responsive structures in our body [6]. Density of the breast tissue is based on the amount of glandular element and the water content of the tissue [2]. Moreover, the volume of the breasts varies considerably throughout the menstrual cycle. These points should be worthy of consideration during breast imaging and while taking surgical biopsies as there are marked breast changes between the follicular and luteal phase[3,5]. Luteal Phase is of great importance in discussions regarding hormonal effects and changes in breast as histologically, the two stages are differentiated on the basis of a distinct myoepithelium. However, the interlobular stroma remains the same throughout the cycle[6]. During the luteal phase, there is marked cellular proliferation due to increased mitotic activity and the ducts enlarge with vascular congestion and glandular secretion[4,5,6]. However, these changes do not always lead to bilateral and equally increases in breast size. The breasts may be

unequal in some. These findings were evident in the biopsy report of our patient. The hormonal profile as well as the biopsy reports were suggestive of the patient being in the luteal phase.

This report demonstrates a unique case of unilateral breast enlargement within the 7 years of menarche. The cause of this unilateral hypertrophy should be determined as the etiology can be tumorous or non-tumorous [7]. These can also be benign or malignant[7]. In Virginal Breast Hypertrophy, there is a rapid and excessive amount of growth in one or both breasts despite normal levels of gonadal hormones[8,10] as seen in our patient. The exact etiology is unknown[8]. For a patient with virginal hypertrophy, unfortunately there has been no evidence based algorithm designed for treatment. Decisions regarding the treatment varies from patient to patient. A priority is given to patient's preferences[1]. Currently, mastectomy and prosthesis replacement, reduction mammoplasty as well as medical treatment with particularly tamoxifen are all recommended in the literature[8,9].

Conclusion

Subcutaneous mastectomy with complete removal of breast tissue may be a more deforming procedure but has a better outcome especially when it comes to the rate of recurrence.

References

1. Reilley AF. Breast asymmetry: Classification and management. *Aesthet Surg J.* 2006; 26:596–600.
2. Stines J, Tristant H. The normal breast and its variations in mammography. Eur J Radiol. 2005; 54(1):26-36. doi: 10.1016/j.ejrad.2004.11.017.
3. Wang C, Luan J, Cheng H, Chen L, Li Z, Panayi AC, Liu C. Menstrual Cycle-Related Fluctuations in Breast Volume Measured Using Three-Dimensional Imaging: Implications for Volumetric Evaluation in Breast Augmentation. Aesthetic Plast Surg. 2019; 43(1):1-6. doi: 10.1007/s00266-018-1243-6.
4. Kim JY, Suh HB, Kang HJ, Shin JK, Choo KS, Nam KJ, et al. Apparent diffusion coefficient of breast cancer and normal fibroglandular tissue in diffusion-weighted imaging: the effects of menstrual cycle and menopausal status. Breast Cancer Res Treat. 2016; 157(1):31-40. doi: 10.1007/s10549-016-3793-0.
5. Chen JH, Chen WP, Chan S, Yeh DC, Su MY, McLaren CE. Correlation of endogenous hormonal levels, fibroglandular tissue volume and percent density measured using 3D MRI during one menstrual cycle. Ann Oncol. 2013; 24(9):2329-35. doi: 10.1093/annonc/mdt158.
6. Ramakrishnan R, Khan SA, Badve S. Morphological changes in breast tissue with menstrual cycle. Mod Pathol. 2002; 15(12):1348-56. doi: 10.1097/01.MP.0000039566.20817.
7. Kim SJ, Kim WG. Imaging and Clinical Features of an Unusual Unilateral Breast Enlargement Diagnosed as Fibrocystic Change: A Case Report. *Am J Case Rep*. 2018; 19:1550-1555. doi:10.12659/AJCR.91345
8. Griffith JR. Virginal breast hypertrophy. J Adolesc Health Care. 1989; 10(5):423-32. doi: 10.1016/0197-0070(89)90224-6.
9. Hoppe IC, Patel PP, Singer-Granick CJ, Granick MS. Virginal mammary hypertrophy: a meta-analysis and treatment algorithm. Plast Reconstr Surg. 2011; 127(6):2224-2231. doi: 10.1097/PRS.0b013e3182131bd1.
10. Menekşe E, Önel S, Karateke F, Daş K, Bali İ, Bozkurt H, et al. Virginal Breast Hypertrophy and Symptomatic Treatment: A Case Report. J Breast Health. 2014; 10(2):122-124. doi: 10.5152/tjbh.2014.1552.