

## **Massive Assymetrical Virginal Breast Hypertrophy: A Case Report**

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**Virginal breast hypertrophy (VHB) is a rare , distinct disorder of unknown etiology with the rapid onset of macromastia at the onset of puberty. We reported a 12 year old, peripubertal girl presented to us with abnormal assymetrical growth of her breasts in 10 months. Due to the enormous breast volume, which caused her physical and psychological problems, she curtailed her social life. On examination, left breast was enlarged more in comparison to right, with associated skin changes. Endocrinological investigations were normal. A bilateral reduction mammoplasty with free nipple graft was performed. Histological analysis of the breast tissue revealed the diagnosis of virginal hypertrophy. During the follow-up period of 13 months, no recurrence was noted and patient is physically and psychologically satisfied.**

### **Introduction**

Virginal hypertrophy of the breast (VHB) is an uncommon, benign disorder and typically occurs in peri-pubertal females<sup>1-5</sup>. This entity was first described by Durston in 1669. The etiology of VHB is uncertain<sup>1-5</sup>. VHB usually develops sporadically, but familial cases have also been reported<sup>1,6</sup>. It occurs more commonly in girls between 8 and 16 years of age, and is clinically characterized by rapid enlargement of the breast<sup>1-3</sup>. The overgrowth of the breasts is usually bilateral, although unilateral VHB has been described<sup>4,5</sup>. It can cause several clinical problems such as breast pain, back and neck pain, dilatation of superficial veins, and skin ulcerations. It may also cause some serious psychological and cosmetic disturbances. We present a case of 12 year old female having assymetrical bilateral VHB with left breast larger than right and reaching upto left groin crease. Associated psychological and social morbidity is also discussed in brief.

### **Case Present\**



A healthy, postmenarchal 12-year-old girl was seen in our Plastic surgery OPD with chief complaint of enlargement of both the breasts since last ten months. This massive breast enlargement created multiple socio-cultural problems for her along with the medical complains. Constant nagging by peers and response of general public to her appearance made her home bound. The patient dropped out of school and curtailed her social appearance to bare minimum. She also had difficulty fitting clothes of any size and at presentation to the OPD said that she even contemplated suicide but could not muster enough courage. In addition to the breast enlargement, she had bilateral mastalgia and pain in shoulders.

The growth was more enormous and rapid in left breast. Her past medical history was unremarkable and she was not on any medications or oral contraceptive pills. General survey revealed, a girl with thin built and average state of nutrition having slumped shoulders and sagging posture. On local examination, the left breast was markedly enlarged, reaching upto left groin crease. Nipples and areola were flattened and stretched. She developed a pressure ulcer of size 4 X 3 cm over inframammary crease on left side. The right breast was

moderately enlarged (Fig. 1 and Fig 2). The skin over the left breast was hyperemic, tender and warm. Palpation of the left breast revealed firm, poorly defined masses (4-7cm in diameter), whereas right breast had a uniformly firm texture without any discrete mass. No axillary nodes were noted. Other secondary sexual characters were normal. FNAC from both the breasts were suggestive of virginal hypertrophy. Hormonal studies revealed no elevated estrogens or hypothyroidism. Preoperative ultrasonography suggested multiple hyperechoic mass lesions on right side and no parenchymal abnormality on left side.

Surgical reduction with free-nipple graft was performed. The weight of the removed mammary tissue was 2510gms and 1010 gms, respectively, for the left and the right breast. The breast was reduced by combining technique of superior pedicle reduction with partial breast amputation. Nipple-areola complex was applied as free graft. The patient had an uneventful recovery and was discharged on 10<sup>th</sup> post operative day. Pathological findings were characterized by hypertrophy of cellular connective tissue and ductal epithelium, with absence of circumscribing capsule. The ducts were distorted, swollen and lined with hyperplastic epithelium. At six months after surgery, the patient was satisfied psychologically and physically with good. Cosmetic appearance of breast. Clinical and ultrasonographic examinations have not indicated any persistent tumors.

The patient rejoined her school education after three months of surgery. She leads a normal social life now and intermingles enthusiastically with her peers. Postoperative psychiatric evaluation at 6 months, have found no signs of depressive behavior or suicidal tendency in her.

## **Discussion**

In most girls, thelarche is usually the first sign of puberty and the usual breast development occurs during the period of 3-5 years of onset of puberty. Complex hormonal influences affect breast development. Ductal and lobular-alveolar development is mainly influenced by estrogen and progesterone respectively<sup>3-5</sup>. Juvenile hypertrophy of the breast is an uncommon disorder that occurs near the time of menarche and results in pathologic overgrowth of the breasts<sup>1</sup>. In VHB, the overgrowth of the breasts is usually bilateral. Initially, rapid enlargement of the breast occurs for about three to six months followed by continuous but slow growth of the breast<sup>1,3</sup>. In our case there was rapid growth for initial 6 months followed by slow growth in next 2 months. The breast can grow to weight as much as 13.5 kg to 22.5 kg<sup>4,12</sup>. In VHB, the breasts are usually pendulous and diffusely firm, with or without any discrete mass lesions. It can cause breast pain, and back and neck pain. Dilatation of superficial veins or skin ulcerations may be present. Physical and psychological problems may develop.

The etiology of VHB is uncertain. In these individuals hormonal level and number of estrogen receptors are normal<sup>1,5</sup>. End organ hypersensitivity is assumed to be reason for massive enlargement of breasts<sup>1,3,5,7</sup>. The differential diagnosis of abnormal breast enlargement during childhood includes pseudo-gigantomastia associated with obesity, juvenile phyllodes tumor, fibroadenomas, lymphomas<sup>8</sup> and sarcomas. Ultrasonographic (US) examination of the breasts is rarely useful for differential diagnosis. USG breast examination of our patient showed irregular, hyperechoic, mass lesions in the right breast, which suggested multiple giant fibroadenomas.

In our patient, the final diagnosis of VHB was made by histopathological examination. Histologically, this condition is an exaggeration of the normally developing breast. Characteristically the breast tissue shows varying degrees of stromal and ductal hyperplasia, often with dilatation and cystic degeneration of the ducts with interstitial and periductal edema. Many modalities of treatment have been recommended in VHB, including reduction mammoplasty, mastectomy with implantation of prosthesis, hormonal manipulation, and combination of surgery and medications<sup>1-5,9</sup>.

Appropriate surgical intervention should be performed in late adolescence or early adulthood when breast growth rate stabilizes and ideally when no change in size is detected over the last 12 months<sup>1-5</sup>. As in our patient, early surgical interventions are required in cases with severe mastalgia, shoulder

and back pain, pressure ulceration, and social and psychological stress associated with gigantomastia. Breast reduction surgery is usually the treatment choice. The most commonly applied procedure is reduction mammoplasty with free grafting of nipple areola complex<sup>3,10</sup>. Hormonal manipulation remains controversial because of unknown long-term effects. Antiestrogen drugs such as medroxyprogesterone, dydrogesterone, and tamoxifen citrate have been shown to be useful. Several cases with VHB who were treated successfully with tamoxifen citrate have been reported in the literature and it was found to be the most effective agent for preventing recurrence<sup>3,10,11</sup>. However, potential side effects of tamoxifen citrate limit its use in children.

There is huge amount of psychological distress associated with massive breast enlargement. There is not only limitation of physical activities but also embarrassment due to easily observable huge breast, which ultimately leading to social isolation, loss of love life and low self confidence. As in our case, due to social problems, girl refused to go to school and was unable to mingle with her friends. Postoperatively patient was not only physically satisfied, but there was drastic improvement in social behavior and personal attitude. We believe that VHB has profound psychological impact on the patient. Our interaction with the patient leads us to believe that psychological factors should be considered importantly in deciding the time of surgery.

### **Conclusion**

VHB is a rare benign disorder that should be kept in mind during the differential diagnosis of abnormal breast enlargement in pubertal girls. Fibroadenomas should be considered in the differential diagnosis of VHB. Especially juvenile and giant forms of fibroadenomas are more likely to mimic VHB<sup>2,3</sup>. Definitive diagnosis can be made by histopathologic examination. Surgery is only treatment for severe symptomatic cases. Role of hormonal therapy in young girl is controversial. Problem of associated psychological stress should not be underestimated. Optimal treatment strategy should be based on the patient's clinical and psychological status.

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