

Juvenile gigantomastia, two cases treated by reduction mammoplasty with nipple-areola complex graft

Zuhair F. Fathallah¹, Jabir R. Hameed²

ABSTRACT

Gigantomastia or “Gravidic macromastia” is a rare benign disorder of the breast, in which the breasts undergo a massive hypertrophy and increase in size. It may occur during marked hormonal changes as in puberty or pregnancy or after prolonged intake of certain medicine. The condition is manifested as a massive diffuse enlargement of the breast. It is usually associated with psychological effect on the patient and her family and physical disability due to excessive breast growth. This rare condition is of undetermined aetiology, which may be due to excess hormonal secretion, or hypersensitivity of the target organ to normal hormonal level. Histologically it is a glandular hyperplasia with an increase in connective tissue. This paper reports two case of gigantomastia due to hormonal changes during puberty. Ulceration and haemorrhage of the breasts complicated the picture and is the main cause of coming to surgery. Surgical procedure was subtotal mastectomy and free implantation of the nipple areola complex.

ضخامة الثدي عند الاحداث: حالتان عولجت بواسطة رأب الثدي المختزل بأستعمال التطعيم المعقد للحلقة الملونة حول الحلمة

د.زهير فاضل فتح الله و د. جابر حميد

فرع الجراحة/كلية الطب/جامعة البصرة/العراق

تضخم الثدي المفرط هو اضطراب حميد نادر الحدوث. حيث يحدث فيه تضخم واسع النطاق مع زيادة مفرطة في حجم الثدي. تحدث هذه الحالة أثناء التغيرات الهرمونية في سن البلوغ أو أثناء الحمل أو تناول مزمّن الى بعض الأدوية. حيث يحدث فيه تضخم الثدي المنتشر وعادة مايرتبط ذلك بالتأثير النفسي على المريضة وأسرتها والإعاقة الجسدية نتيجة وزن الثدي المفرط. أسباب هذا المرض قد ترجع الى زيادة في إفراز الهرمونات أو إفراط في الاستجابة الى مستوى اعتيادي من الهرمونات. الفحص النسحي يشير الى تضخم الغدد مع زيادة في الأنسجة الرابطة. هذا البحث يعرض حالتان لهذا المرض حدث تضخم نتيجة اختلاف في الهرمونات في سن البلوغ ، مع تقرح و نزف من جلد الثدي مما ادي الى تعقيد الحالة وكان احد الأسباب التي أدت الى طلب العلاج. خضعت المريضان الى عملية استئصال جزئي للثدي مع غرس الحلمة.

INTRODUCTION

Gigantomastia is a rare benign disorder of the breast, in which the breasts undergo massive hypertrophy and increase in size. It may occur spontaneously during marked hormonal changes such as puberty or pregnancy,^[1,2] or in certain conditions as taking medications. It is usually associated with psychological effect on the girl and her parents and physical disability due to excessive breast growth which is the main cause of coming to surgery. The size of the breasts remains unchanged till puberty.^[3] When the breast begins to grow it involves all tissues of the breasts. The ductal growth is under the influence of the anterior pituitary hormones as luteinizing hormone, growth hormone, adrenocorticotrophic hormone, and estrogen as the major triggering factor.^[3] Lobulo-alveolar development is influenced by progesterone and prolactin. Corticosteroids and prolactin affect

breast development independently. The reason why breasts rarely take enormous size during adolescence without underlying pathology remains unknown.^[3-5] The aetiology of gigantomastia remains unknown, but theories have been proposed to explain gigantomastia. The aetiology include hypersensitivity of the breast tissue to circulating hormones,^[6] autoimmune issues as systemic lupus erythematosus,^[2] high IGF-1 (insulin growth factor-1),^[6] hyperprolactinemia,^[6-8] hypersensitivity to estrogen,^[7,8] hyperthyroidism,^[7] ovarian granulose cell tumour,^[3] Side effects of treatment with certain medications like D-pencillamine^[6,9] and Neothelazone^[3] and lastly Idiopathic during puberty and pregnancy.^[1] Symptoms of gigantomastia are ranging from pain to necrosis or sepsis.^[6] It may include mastalgia (breast pain),^[10] ulceration and infection,^[2,11]

¹Department of Surgery, College of Medicine, University of Basrah, Iraq

orthopnea,^[3] posture problems,^[10,12] scoliosis, kyphosis or lordosis^[3,13] and back pain,^[3] chronic traction injury to 4th/5th/6th intercostals nerves with resultant loss of nipple sensation^[6] and hygienic difficulties, intertriginous lesions at the inframammary folds.^[3] Investigations to be done in addition to hormonal study include thyroid hormones and magnetic resonance imaging [MRI] of the brain to rule out enlargement of sella turcica and hypophysial enlargement; ultrasound of the breasts and abdomen, to exclude any disorder of breasts, and abdomen.^[5, 14,15] Treatment is based on the person's symptoms and may include breast reduction, mastectomy with or without reconstruction, hormonal treatment, or a combination of treatments.^[16,17] Surgery remains the ideal treatment for gigantomastia.^[7] This paper deals with two cases of virginal juvenile breast gigantomastia in girls who are otherwise healthy. Their ages were 13 and 15 years. The younger one presented with wet, tender ulceration of one of the breasts. They were referred to Plastic Surgery Unit in Basrah Al Sadder teaching hospital, during the period from June 2011 to September 2012.

Case one: Fifteen year old girl was referred to the outpatient department in early June 2011, with bilateral massive enlargement of breasts started shortly after puberty, with the patient

complaining of heavy weight with neck pain and backache.

O/E; An adolescent girl with small body build and healthy general condition. She had a massive bilateral enlargement of breasts, with scoliosis toward one side to compensate for the heavy weight.

Investigation: General investigations are all normal, Ultrasound showed massive cystic enlargement of the breast. Hormonal study show increase in prolactin level to 66.73 µg/L (normal female level= 1.3- 25 µg/L). The investigations were suggestive of pubertal gigantomastia. She was admitted to hospital on June 6, 2011. Operation was carried out on June 30, for bilateral mastectomy of the breasts with free implantation of the areola and nipple. Operative findings showed cystic dilatation of the tissue and leakage of fluid (clear serous fluid) from the wound and the breast tissue. The weight of the amputated breast was, on right side 6.3 kgm, and on left side 5.7 kgm. The whole breast tissue was removed because of fear of recurrence due to high prolactin level. Patient had excellent recovery and sutures were removed after 10 days. She was checked in OPD in September 9, 2011, with excellent recovery, but never showed up again after she and her parents were told about breast prosthesis and its cost.



Case two: A 13 year old teenage presented in September 2012 with gradual asymmetrical enlargement of both breasts for one year duration. O/E; little young girl with good general condition, she had asymmetrical enlargement of both breasts, right breast larger in size and reaching the level below the umbilicus when she stand up. She has skin ulceration of the lower part of the right breast.

Investigations: General haematological studies are all normal. Hormonal study show normal level of prolactin, luteinizing

hormone, follicular stimulating hormone and testosterone. Skull x-ray show normal sella turcica. Operation was done on October 18, 2012. Bilateral reduction mammoplasty done with free implantation of the nipple areola complex. The total weight of the removed tissue was 5.6 Kg, right side was larger with weight of 3.4Kg, and left side is smaller with weight of 2.2 Kg. Biopsy report was juvenile virginal gigantomastia. Patient was seen in OPD two months later and she was happy with the result.



DISCUSSION

We present in this paper two cases of virginal juvenile breast gigantomastia in girls who are otherwise healthy. Their ages were 13 and 15 years. The first one represents a case of hyperprolactinaemia, which resulted in a huge enlargement of the breast which necessitated surgical interference. The whole breast tissue was removed because of the expectation of recurrence as long as the prolactin level remains high.^[18] Gentimi et al^[3] stated that only one case of gigantomastia due to high hormonal level was registered in literatures, which in that case was thyroxin. The second case was identified as idiopathic because all investigations were normal and no cause could be detected. The patient might have hypersensitivity to hormones.^[6] Our line of treatment was surgical in both cases. They had reduction mammoplasty

with free implantation of nipple areola complex. The reason behind that decision is that the pedicle needed to support the nipple areola complex will be as long as 15-20 cm, which may affect the vascularity of the areola. Future pregnancy has been suggested as a cause of recurrence.^[5] Allah et al^[10] and Samuelov et al,^[18] both reported similar cases with good results. The first patient will definitely need more surgery for breast silastic implant, while the second case has a satisfactory result. The only fault in planning of the reduction mammoplasty was under estimation of the amount of stretching of the skin which results in a superior location of the areola about 1-1.5cm superior to its normal location, but this can be corrected when the skin of the breast settles.

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