Reduction Mammoplasty Using McKissock Vertical Bipedicle Technique

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Introduction

Contemporary concepts of female beauty and femininity necessitate that breasts be aesthetically acceptable in all situations of dress and undress. Breasts are a significant factor in acceptability as a female and in sexual attractiveness. However, problems multiply due to complex physiologic responses of breast. Glandular macromastia usually begins with puberty and persists postpartum. A relationship between estrogen receptors and glandular breast hypertrophy has not been established [1]. Gigantomastia, which denotes massive breast enlargement during adolescence or pregnancy, is thought to represent an abnormally excessive end organ response to a "normal hormonal milieu". Hormonal therapy is ineffective and surgical intervention in the form of reduction mammoplasty is advised.

Case Report

A total of three patients reported with massive gigantomastia. The patients were in the age group of 35 to 47 years. All the patients were symptomatic. The presenting complaints were due to the heavy pendulous breasts that were a source of chronic pain and discomfort. The effect on the skeletal system was evident as severe neck strain, headache, aching shoulders, and low back pain. Postural problems like kyphosis and cervical spine arthritis and protuberant abdomen were present. All cases complained of deep brassiere strap furrows and intertrigo. Besides the above symptoms, gigantomastia resulted in limitation of physical activity, curtailed daily activity and caused problems in fitting clothes. It was a cause of social embarrassment making them self-conscious. It was a problem for them to incorporate it into their body image.

The cases were evaluated for their general health. Thorough history and examination was undertaken. Previous and future scars were discussed. A family history of breast cancer was sought. History of hormone usage and plans of future pregnancies was noted along with any history of pain, tenderness, nipple discharge and lumps. Besides routine haematological and biochemical investigations, all cases underwent preoperative mammography.

All patients were advised to stop usage of hormones and

salicylates before surgery. Surgery was scheduled in the first week of the menstrual cycle. After obtaining informed consent, patient was explained the surgical options and the frequent and remote risks involved. Surgical incisions were drawn and future scars defined on the patient. Preoperative professional photographs were taken. Blood transfusion in the form of autotransfusion was arranged.

Just prior to surgery, patients were undraped. Applying Penn's criteria of 'aesthetically perfect breasts' markings were done. While doing the markings, Aufricht's principle was followed with an aim to achieve slightly pendulous breasts, gently drooping breast contour and not to create virginal breasts of equal radii. Markings were done free hand. New nipple site was marked 1 to 1.5 cm below the original inframammary crease mark. After the breast markings were completed, patient was put on the table, cleaned and draped.

The McKissock vertical bipedicle technique was applied. The vertical bipedicle was de-epithelialized. The lateral and medial wedge excisions were done. The upper half of the bipedicle flap was freed from the pectoral fascia after a central wedge of breast tissue was excised. The lateral and medial breast flaps were thinned and feathered. Hemostasis was achieved. Nipple was sutured to its new site. The breast flaps were sutured back over redovac drains to achieve reduction. The excised specimen was subjected to histopathological examination. In the post operative period, as soon as the patient was able to sit, she was kept with the head end of the bed at 45° angle to assist wound drainage and allow the glandular breasts to settle properly within their skin brassières. Postoperative pain relief was provided as required. Dressings were changed after 48 hours looking for any haematoma and flap compromise. Sutures were removed by 12 to 14 days. A more comfortable athletic brassiere replaced surgical brassiere. Regardless, the brassiere was advised to be worn continually for six weeks after surgery. Postoperative mammography was advised to obtain base line mammographic appearance after three to four months of surgery. All cases had an uneventful recovery. The excised specimens weighed 950 gm and 1000 gm per breast in first case, 1050 gm approximately per breast in second case and 1100 gm approximately per breast in the third case. Histopathology ruled out malignancy in all three cases. They were relieved of their distressing symptoms and resumed social interaction and were more confident. All

Fig. 1a & b : Front and profile view - before reduction mammoplasty

three cases had normal sensations in the nipple-areola complex. The nipples were well projecting and the scars were cosmetically acceptable.

Discussion

The history of breast reduction begins with the treatment of male breasts way back in the sixth century. The continued advances in the plastic surgeon's ability to modify the female body image have resulted in an increased demand for this type of surgery. In case of reduction mammoplasty, the motivation for surgery can be functional because of the distressing symptoms. The heavy pendulous breasts serve as a source of chronic pain and discomfort. Psychologic studies of a group of adolescent patients with large breasts found that they had not incorporated their breasts into their body image but viewed them as external obstacles and handicaps [2].

At the present time, four techniques appear to be used most often; (i) the superiorly based dermal pedicle [3], (ii) the vertical bipedicle dermal flap [4], (iii) the free nipple graft and (iv) the inferior pyramidal

Fig. 2a & b : Front and profile view - after reduction mammoplasty

dermal flap [5].

It has been found that patients with gigantomastia who require resection of greater than 1500 grams per breast are more effectively treated with the free nipple grafting technique. Patients who require resection between 1000-1500 gm per breast are best treated with the inferior pedicle technique. Patients who require resection of less than 1000 gm per breast can be treated by any of the other techniques, including the McKissock, Pitanguy, inferior pedicle, and central mound techniques.

McKissock's vertical bipedicle technique is best applied to breasts requiring reduction of less than 1000 gm per breast. When severe ptosis and macromastia are present and the pedicle lengths will exceed 40 cm, an alternative technique must be chosen. The McKissock technique is applicable to the majority of patients requesting reduction mammoplasty. The advantages of this technique include (1) a well vascularized dermal-parenchymal vertical bipedicle, mainly via the inferior portion of the pedicle, for the safe transposition of the nipple-areola complex, especially if the pedicle

lengths are restricted to less than 40 cm; (2) excellent exposure for glandular resection; (3) maintenance of superior pole residual breast mass; (4) superior dermal continuity for good long-term results with breast shape; and (5) flexibility in design for varied breast morphologic characteristics with reductions of less than 1000 gm per breast.

Complications after breast reduction surgery usually result from errors in judgement, planning, or technique. It has been noted that complication rates are directly correlated with the amount of tissue resected, especially if nipple transposition techniques are used [6]. A complication rate of 0.5% was noted with reductions of 250 gm. This rose to 15% with reductions greater than 1000 gm. The complication rate correlates directly with the distance that the nipple-areola complex is transposed and the length of the pedicle. Haematoma is the most common complication of reduction mammoplasty. Since the breasts are blessed with a rich blood supply, meticulous haemostasis is required to prevent this complication. Patients should be instructed to limit shoulder movements for 2 or 3 days, after aesthetic breast surgery. Haematomas when formed require evacuation and haemostasis. Nipple necrosis, partial, or total, is the most dreaded complication of reduction mammoplasty with nipple transposition techniques. Incidence is usually around 1% of cases. The common causes for vascular compromise to the nipple-areola include (1) haematoma, (2) excessive reaction, (3) kinking of the dermal or dermal-parenchymal pedicle, and (4) closure of the skin brasiere under excessive tension. Skin slough can occur at the point of the inverted T if the closure is too tight or the breast flaps have been excessively thinned. The area involved is usually less than 2 or 3 cm. The small controlled slough is self-limiting and is managed conservatively. Fat necrosis is an unfortunate and dreaded complication and is usually the result of vascular compromise with reasons similar to skin necrosis. Nipple retraction is a rare complication with nipple transposition techniques. Nipple malposition and secondary breast deformity can result from an error in judgement or an error in technique. The "high-riding" nipple is the most common post operative complication related

to nipple malposition and may be unavoidable in breasts with predominance of fatty tissue. Preoperative measures to prevent this postoperative complication include (1) relocating the new nipple site 1 to 1.5 cm below the transposed point of the inframammary fold and (2) limiting the length of the vertical limb of the inverted T incision to 4.5 or 5 cm. Scars are a distinct drawback of reduction mammoplasty. Inframammary scars are most often subject to hypertrophy and hence should be well placed in the inframammary crease to avoid conspicuous chest scars. Loss of sensation of nipple-areola can occur with nipple transposition techniques but returns by 65% in about 2 years time. Sensation in the breast skin returns earlier than in nipple-areola.

This paper aims at bringing out the use of McKissock's vertical bipedicle technique for reduction mammoplasty. The technique has been applied in three cases of gigantomastia with excellent post-operative results. There were no complications despite reductions of 950 to 1100 gm of each breast. The aesthetic results were excellent. The nipple-areola sensations were normal. Most important was the positive behavioral change that was seen in all the cases after surgery. The patients had developed a more active social and physical life and were relieved of their distressing symptoms. The technique is versatile and a safe method of reduction mammoplasty.

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