

## AESTHETIC BREAST SURGERY

**R.K. Khazanchi, Vivek Kumar, Prashant Baranwal**

*Department of Plastic Surgery, Sir Ganga Ram Hospital, Rajinder Nagar, New Delhi - 110060 India*

**Abstract :** Breasts have always been the centre of focus in female form and they play a significant role in acceptability as a female and in being sexually attractive. With an overall surge in demand for aesthetic surgery, it is natural for increasing requests for alteration of breast size and shape. The surge for breast surgery also parallels the increasing trend of western wear amongst women. Various studies have reported that augmentation mammoplasty has significant positive effect on patients' body and self image, sensuality, sexual life and relationship with their partner. Reduction mammoplasty represents one of the clearest examples of the interface between reconstructive and aesthetic plastic surgery. Although, the essential goals of this procedure are the weight and volume reduction of the breast, aesthetic enhancement, preservation of sensation and physiologic functions remain equally important. Mastopexy for breast ptosis involves lifting and fixating the sagging breast, with repositioning of the nipple areola complex to obtain more youthful appearance and improved projection. On the contrary a projecting male breast is a cause of embarrassment. Techniques for correcting gynaecomastia range from liposuction to glandular excision, with or without skin reduction.

### INTRODUCTION

The desire for beauty, aesthetics and erotic allure combined with youthfulness is an aspiration that has been shared by human beings through all ages and in all cultures. In females, the body as a whole, and breasts in particular, have been the centre of attraction. Contemporary advances in the perception of female beauty and femininity necessitate that the breasts be aesthetically acceptable in all situations of dress and undress. The complex physiologic responses in breast further multiply the problems in aesthetic restoration <sup>1</sup>.

The continued advances in a plastic surgeon's ability to modify the body image have resulted in an increased demand for aesthetic breast surgery in which size and shape of the breast is altered. It includes breast lift (mastopexy), breast reduction, augmentation and treatment of gynaecomastia (enlarged breast in males). An aesthetic breast is defined by Bostwick in two senses- 'tactile and visual'. The attractive, aesthetically pleasing breast is characterized by proper symmetry, flow, contour and proportion. Tactile aesthetic considerations are softness, smoothness and sensibility to touch, which is particularly important in the nipple areola complex. Normal volume of each breast should range from 300-500 gm with more fullness lateral and inferior to the nipple areola complex and a 45 degree lateral inclination <sup>2</sup> (fig. 1a & b).



**Fig. 1 :** Showing normal breast symmetry, contour and proportion.

### ANATOMY

Breast is a modified sweat gland and found in the superficial fascia of the pectoral region. The ideal breast is conical in shape and is positioned within the second rib superiorly, seventh rib inferiorly and

between the parasternal and anterior axillary lines. The breast rests mainly on pectoral muscle with some overhang over the serratus anterior muscle, external oblique muscle and the anterior rectus sheath. The nipple is located at the level of fourth intercostal space and slightly lateral to mid clavicular line. The blood supply is from an intercommunicating subdermal plexus, with the major feeding vessels being internal mammary artery, lateral thoracic artery and intercostal perforators. The principal nerve supply is via intercostal nerves and the nipple areola complex is primarily supplied by the fourth intercostal nerve. Cooper's ligaments are essential for breast support and preservation of this structure provides the rationale for reduction techniques that minimize skin undermining <sup>1</sup>.

### PATIENT EVALUATION

All aesthetic breast surgeries are done under general anesthesia or heavy sedation with local anesthesia. The patient should be medically fit to undergo surgery and should also be free from any breast disease like nipple discharge, breast dysplasia or malignancy. Local examination includes noting the size and position of the breast and its nipple areola complex, location of the inframammary crease, and any breast or chest wall asymmetry. In elderly patients, a mammogram should be done routinely to rule out malignancy.

Consultation with the patient regarding her expectations from surgery and proposed procedure should be discussed in detail so as to prevent postoperative dissatisfaction and confusion. Preoperative and postoperative photographs should be taken to objectively evaluate the deformity and the final result.

### AUGMENTATION MAMMOPLASTY

Various studies have confirmed that augmentation mammoplasty has significant positive effect on patients' body and self image, sensuality, sexual life and relationship with their partner <sup>3</sup>. Primary indications for augmentation are inadequate volume of breast tissue, glandular hypomastia (developmental or age related atrophy) and psychological reasons. In certain patients with underdevelopment of thoracic region (e.g. Poland's syndrome) skin envelope over chest wall may not be adequate and tissue expansion may be required prior to augmentation.

The evolution of breast augmentation dates back to 1895 when a lipoma was transplanted from patients' back to fill a breast defect, but attempts to enlarge the breast with autogenous tissue such as lipoma, fat, dermal graft and omentum had unacceptable and unpredictable results. Later various injectable alloplastic materials like paraffin and silicone were tried but soon discontinued due to severe complications. Modern era of cosmetic breast augmentation started in 1962 when Cronin started placing subglandular silicone gel

**Correspondence : Dr. R. K. Khazanchi**

E-mail : rkkhazanchi@hotmail.com

prosthesis. Other solid alloplastic materials used for breast augmentation were polyvinyl ether, poly tetra fluorethylene and poly methane. These were gradually discontinued due to severe local and systemic reactions.

Modern day breast augmentation is done by placing a fluid / gel filled implant under the breast tissue, which gives it a natural feel. An elastomeric solid shell of silicone, filled with either silicone gel or saline is the principal design of current models of breast implants and some type of texturing of the elastomeric surface has been added in an effort to diminish encapsulation. Presently used implants may be smooth or textured and spherical or anatomic. The goal of these various implants is to attain the most natural, aesthetically pleasing shape while keeping complication rate to minimum.

Four separate incision sites- axillary, inframammary, periareolar and transumbilical have been used for placement of the breast implant. Each location has its advantages and disadvantages depending on the individual surgeon's experience. The positioning of the implant can be subglandular (behind the breast tissue), subfascial (under the pectoral fascia), subpectoral (under the pectoral muscle) or in a dual plane position<sup>4</sup> (fig. 2a & b). Recently, an endoscopic technique of placing the implant has been described to reduce the size of the incision<sup>5</sup>.

Augmentation mammoplasty is performed on a day care basis and the results are highly satisfying for both patients and the surgeon (fig. 3a & b). The inframammary approach is the most commonly used technique for placing

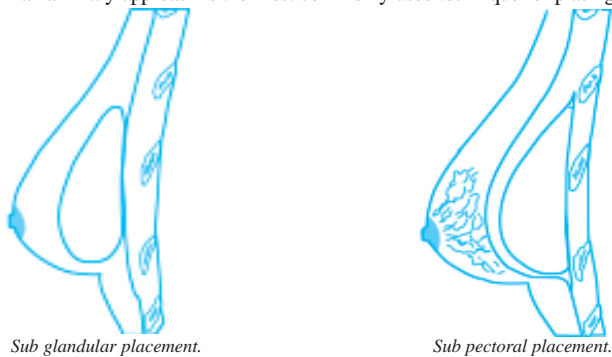
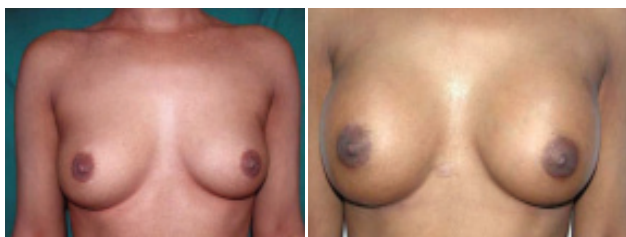


Fig. 2 : Showing placement of the implant in augmentation mammoplasty.



Pre-operative frontal view.

Postoperative frontal view.

Fig. 3. : Showing a patient with augmentation mammoplasty. A 300ml textured anatomical implant was placed in subpectoral pockets, bilaterally, through inframammary incision.

the breast implants. Advantages of this approach include technical ease, more accurate placement of implants, minimal scar visibility, better control of inframammary crease and if required later, the same incision can be used for capsulotomy or any other secondary surgery.

**Inframammary approach:** Pre operatively inframammary crease, medial, lateral and superior extent of dissection are marked in standing position. Incision is usually given in the inframammary crease but finer adjustments may be required according to the size of implant. The incision starts in the nipple line and extends laterally. The dissection is deepened through subcutaneous and glandular tissues. If subglandular placement is desired,

the pocket is dissected between the glandular tissue and the pectoral fascia. In subpectoral placement, lower fibres of pectoral muscles are incised and a pocket is created deep to pectoralis major muscle by blunt dissection. After achieving absolute hemostasis, implants are placed in the dissected pocket under strict aseptic conditions.

**Complications :** There was a controversy in the past about silicone gel filled type of implants and their long-term safety. Towards late 1990's, several studies were published, including approximately 20 epidemiologic investigations, which found no increased risk for developing connective tissue disease among women with breast implant<sup>6</sup>.

Serious complications after augmentation mammoplasty are rare but few problems may arise in 1-2% of cases. These may range from formation of hematoma / seroma, infection, altered sensation of the nipple areola complex, asymmetry of the breast, capsular contracture and rarely implant rupture. Most of these problems usually settle with time or may require minor surgical interventions.

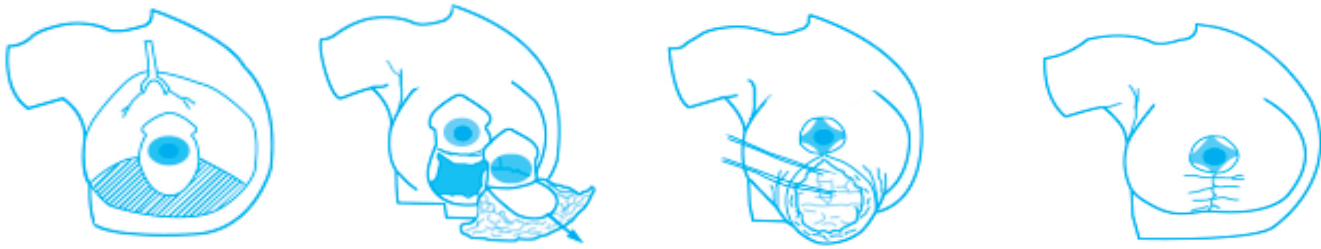
## REDUCTION MAMMOPLASTY

This procedure represents one of the clearest examples of the interface between reconstructive and aesthetic plastic surgery. Although, the essential goals of this procedure are the weight and volume reduction of the breast, aesthetic enhancement, preservation of sensation and physiologic functions remain equally important. Women seek breast reduction for both physical and psychological reasons. Common complaints in these patients are neck and back pain, grooves in the shoulder skin by the pressure of brassiere strap, maceration and dermatosis in inframammary region. Excessively enlarged breasts are also centre of attention and embarrassment. Reduction mammoplasty is usually performed when breast growth is complete but indicated early in certain cases like virginal hypertrophy where the prospect of an operation is outweighed by the benefit of a more normal psychological development<sup>7</sup>.

In earlier techniques of breast reduction, an elliptical excision of breast tissue and skin was carried out. With better understanding of blood supply and importance of the subdermal plexus, various techniques were developed which transpose the nipple areola complex on a pedicle for better survival, and hence, a precise excision of the breast tissue can be done with safety. Various techniques commonly used today are inferior or superior pedicle techniques, a bipedicle technique and their modifications. By these advanced techniques, nipple sensation is usually preserved and even lactation is possible in selected patients. However, in extremely large breasts an amputation with free nipple grafting may be necessary.

**Reduction mammoplasty (Lejour technique) :** Vertical mammoplasty technique was described and popularized by Lejour<sup>8</sup>. It is probably the most popular technique used today for reduction mammoplasty due to elimination of a transverse incision. The technique provides an attractive breast shape without the areolar enlargement, relative safety, preservation of neurovascular structures, a short vertical scar, low rate of complication and fairly predictable results.

The markings are done preoperatively in standing position. The inframammary fold and midline of chest is marked and a vertical axis of breast is drawn by joining the midclavicular point with the inframammary crease, passing through the nipple. Planned new position of nipple areolar complex is marked on this vertical breast axis at a point transposed through the centre of the inframammary crease. The new nipple is located about 22cm from the suprasternal notch and 11cm from the mid sternal line. A vertical area around the nipple areola complex is deepithelialized (speckled area in fig.4a) which acts as a pedicle for transposition of the nipple areola complex. This also effectively reduces the size of the enlarged areola. Lateral and medial breast markings are determined by pushing the breast laterally and medially (fig.4a). In surgery, excess skin and glandular tissue are excised (fig.4b) and the remaining glandular tissue



**Fig. 4 :** Diagrammatic representation of vertical mammoplasty by Lejour's technique.

(a) Pre-operative markings. (b) De epithelization and enbloc glandular resection. (c) Plication of glandular tissue.

(d) Skin closure by pleating technique.

is sutured to itself (fig.4c) and the pectoralis fascia to give the desired projection. Skin is closed with pleating sutures (fig.4d). Suction drains are used for 2-3 days. Skin sutures are removed after 10-14 days. Scars from this procedure are either a vertical line or inverted T scar below the areola with a short horizontal limb in the inframammary crease, which heals well and is usually unnoticeable (fig. 5a & b). The patient is discharged 1-2 days after surgery but their physical activity is usually restricted for 4-6 weeks to prevent stretching of scars.

**Complications :** Reduction mammoplasty is a very safe procedure. Complications are relatively uncommon and include asymmetry of the breast, development of hypertrophic scars, too high positioned nipples, partial or complete loss of nipple areola complex, fat or skin necrosis and lateral dog ears.

**Follow up :** Several studies have shown that most of the patients are relieved of their pre-operative complaints. The patients also show a trend



Pre-operative

Post-operative

**Fig. 5 :** Showing a patient with reduction mammoplasty by Lejour's technique. (950 gm of tissue excised each side)

towards weight loss, their activity levels increase and there is greater ease in finding clothing of their size. Cup size generally decreases on an average of 2 to 3 sizes. Social and psychological complaints such as poor body image, low self-esteem and feeling of insecurity and sexual unattractiveness also improve significantly. Most of the patients feel benefited from surgery and recommend the procedure to others.

### MASTOPEXY

In breast ptosis, there is an alteration in relationship of the breast and nipples to the inframammary fold i.e. the entire breast lies much lower to the inframammary fold. However, in pseudoptosis, the nipple is above or at the level of the inframammary fold and there is a loose saggy skin brassiere below it giving the impression of ptosis. Breast ptosis can be due to several components but gravity seems to be a common factor. Breast skin gets stretched during lactation, and later in middle age the breast gland atrophies, leaving loose skin. In post menopausal patients, glandular atrophy, loss of skin elasticity, weight gain and gravity are the main factors leading to breast ptosis<sup>9</sup>.

Mastopexy is performed primarily for aesthetic reasons. It involves lifting and fixating the sagging breast with repositioning of the nipple areola complex to obtain more youthful appearance and improved projection. Techniques for mastopexy are same as those of reduction mammoplasty, however, no breast tissue is excised (fig. 6a & b). Mild ptosis and pseudoptosis are generally

corrected by augmentation mammoplasty, to fill the sagging envelope.

### GYNAECOMASTIA

Gynaecomastia is a Greek word meaning 'woman like breast' and it affects 40-60% of men. It is caused by an increase in stroma and ductal tissue in male breast and occurs at infancy, adolescence and old age i.e. at any time of male hormonal change. Gynaecomastia is usually a normal finding at these stages of life but it may be associated with certain conditions like increase in estrogen, decrease in androgens, defect in androgen receptors, liver diseases, endocrine tumors, certain malignancies and debilitating diseases. A thorough clinical and biochemical evaluation is required in-patients with symptoms



Pre-operative .

Post-operative

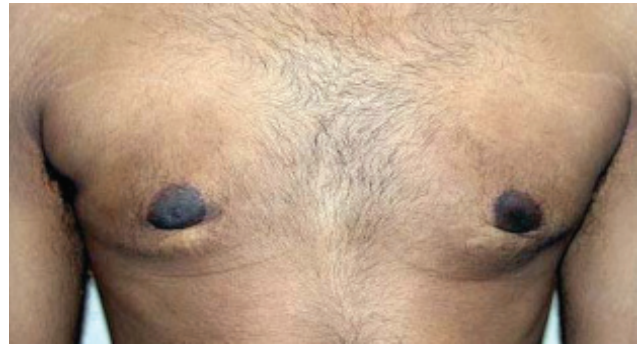
**Fig. 6 :** Showing a patient with mastopexy. (mastopexy done by relocating the nipple areola complex by Lejour's vertical mammoplasty technique. No glandular excision was made.)

like infertility, extreme obesity, micropenis, jaundice, diabetes and other endocrine disorders. This condition usually disappears during the late teens. In about 7%, it may persist beyond the age of 17 yrs. If the patient presents at puberty, he is usually advised to wait for upto two years to allow spontaneous regression to occur<sup>10</sup>.

Treatment of gynaecomastia is essentially surgical. Earlier large inframammary incisions were given to excise the enlarged breast tissue and skin, which used to cause significant scarring and morbidity. The introduction of suction lipectomy has changed the treatment of gynaecomastia. It helps significantly in removing the fatty breast tissue through hidden incisions and allows tapering of the edges. The remaining glandular tissue can be excised through a periareolar incision. Pre-operative markings are done with the patient in standing position. After induction, a tumescent solution (see article on liposuction in this issue) is infiltrated in the breast tissue and liposuction is done through axillary or periareolar stab incisions. After liposuction, the periareolar incision is extended and nipple areola complex is undermined leaving a cuff of tissue under the nipple to prevent its retraction. The chest skin is undermined according to preoperative markings and by sharp dissection, the glandular tissue is excised. Usually skin excision is not required as



Pre-operative frontal view.



Post-operative frontal view

Fig. 7 : Showing a patient with Gynaecomastia. (correction was done by liposuction and subcutaneous mastectomy through a periareolar incision).

the skin retracts gradually over 3-6 months time (fig.7a & b). However, in massive gynecomastia it may be essential to do a skin excision in a crescentic manner around the areola. The patients are advised to wear pressure garments for about 3-4 months.

Post operative complications of gynecomastia surgery are uncommon. Nipple retraction or asymmetry is occasionally seen and may need secondary correction. Overall results of this surgery are very satisfying to most patients.

**REFERENCES**

1. Georgiade NG. et al Aesthetic Breast Surgery. In JG Mc Carthy (Ed), Plastic Surgery (1st ed), vol.6 chap.78, WB Saunders Co. 1990, 3839-3896.
2. Bostwick J. III Aesthetic Breast Surgery. In Plastic & Reconstructive Breast Surgery, St. Louis,1990.
3. Young VL. et al The efficacy of breast augmentation: Breast size increase, patient satisfaction and psychological effects. Plast Reconstr Surg 1994,94 : 959.

4. Sumner AS. Augmentation mammoplasty and its complications. In SJ Aston, RW Beasley, CHM Thorne ( Eds), Grabb & Smith's Plastic Surgery (5<sup>th</sup> ed), chap 58; Lippincott- Raven, 1997,713-724.
5. Price CI, Eaves F. et al Endoscopic transaxillary subpectoral breast augmentation. Plast Reconstr Surg 1994, 94 : 612-619.
6. Young VL. Breast Implant Research. Clin Plast Surg (Augmentation Mammoplasty), 2001,28: 451-484.
7. Scott LS. et al Reduction Mammoplasty & Mastopexy. In SJ Aston, RW Beasley, CHM Thorne (Eds), Grabb and Smith's Plastic Surgery (5<sup>th</sup> ed), chap 59, Lippincott- Raven, 1997,725-752.
8. Lejour M. Vertical mammoplasty and liposuction of the breast. Plast Reconstr Surg 1994, 94 (1): 100-114.
9. Bryan JM. et al Mastopexy. In B Achauer, E Erickson, B Guyuron, JJ Coleman, RC Russel, CA Vanderkolk (Eds), Plastic Surgery: Indications, operations and outcomes (1<sup>st</sup> ed), chap 152, Mosby, 2000,2769-2782.
10. Hands LJ. et al Gynaecomastia. Br J Surg 1991, 78: 907.

# Volibo

(Voglibose 0.2 / 0.3 mg tablets)

## Superior tolerability over acarbose

58% lesser incidence of flatulence reported

Treatment	% of patients with flatulence
Voglibose (Volibo)	56.7
Acarbose	90

67% lesser incidence of abdominal distension reported

Treatment	% of patients
Voglibose (Volibo)	10
Acarbose	16

for  $\alpha$ GI therapy