

## Combined Use of Liposculpture with the Periareolar Pull-Through Technique for the Treatment of Gynecomastia

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### ABSTRACT

Gynecomastia is the most common benign condition of the male breast. Three main types of gynecomastia exist: Fatty, fatty glandular and glandular. Use of anabolic steroids is associated with the more frequent fatty glandular type. The aim of surgical treatment is to achieve a normal appearance of a masculine chest contour with the smallest possible scar. The method employed combines liposculpture through incisions at the periphery of the mammary region with direct pull-through excision of the fibrous breast bud through a small 1cm periareolar incision. Twenty-four patients, aged 17-36 years, were included in this series. Eighteen patients 10 of them with history of anabolic steroid intake-were treated with combined liposculpture and direct pull-through excision and 6 patients with liposculpture alone. Liposculpture of fatty breast and mammary region is performed through incisions in the lateral mammary crease and anterior axillary pillar. At the end of liposculpture, the mobilized fibrous breast tissue is easily pulled through a small periareolar stab incision and excised under direct vision. Follow-up ranged from 1-12 months. No complications apart from hematoma in one patient and seroma in another. All patients were satisfied with their results. The technique enables an effective treatment of both the fatty and glandular tissue of the male breast. Better control of liposculpture through incisions at the periphery of the mammary region helps to refine the peripheral contour and define the glandular tissue. It also enhances skin contraction and avoids the need for redundant skin resection. A smooth, masculine breast contour is achieved. The location of the small periareolar incision offers the advantage of a more direct and precise pull-through of the fibrous breast bud with a well-concealed scar, which eliminates the stigma of breast surgery. The procedure is easy to perform, rapid and technically straightforward with consistent results.

### INTRODUCTION

Gynecomastia is now a common entity due to prevalence of obesity and use of anabolic steroids. Anabolic steroids usually lead to hypertrophy of breast parenchyma and fatty glandular, rather than fatty, gynecomastia. Three main types of gynecomastia exist: Fatty, fatty glandular and glandular. More patients are now seeking treatment because of social embarrassment and concern about self-image. And those are the very patients who are

obsessed about scarring. Traditional excision through an inferior or superior semicircular periareolar incision or submammary incision has substantial morbidity (possible hematoma, seroma, decrease of sensation, etc.) and can cause esthetic complications due to uneven excision of the gland and fat [1]. Treatment modalities, after the advent of liposuction, include liposculpture alone for lipomatous gynecomastia [2,3], excision for true glandular gynecomastia and combined liposculpture and excision for the more frequent fatty glandular type [4].

To avoid scars in the areola, Morselli [5] removed the glandular tissue by pulling it piecemeal through the two incisions made for insertion of the cannula. This indirect approach to the breast bud is technically difficult and takes longer than traditional excision through semicircular periareolar incision. Combined liposuction and excision through a single periareolar incision was also reported. Though it helps to make excision easy, control of liposuction in the subareolar region becomes difficult [6]. To build on the merits of these options and avoid their shortcomings, we treated cases of gynecomastia with liposculpture through incisions at the periphery of the mammary region followed by pull-through removal of the gland through a small periareolar stab incision.

### PATIENTS AND METHODS

Twenty-four male patients, age range between 17 and 36 years with an average age of 24, had bilateral gynecomastia operated on between January 2004 and October 2006. Most of the patients were overweight. Among these, 10 patients had history of anabolic steroids intake for variable periods (1-2 years) before presentation. Breast enlargement persisted even after they stopped anabolic steroids intake. Clinically, breast consistency was soft with ill-defined firm sensation in some patients with

history of anabolic steroids intake, but examination was unreliable to predict a glandular component of gynecomastia. None of the patients had manifestations of endocrine or other diseases. The condition has been present for years and patients asked for treatment because of emotional discomfort or social embarrassment. Patients were concerned about scarring and body shape. All patients underwent gynecomastia repair using the refined combination of liposculpture and periareolar pull-through excision.

#### *Operative technique:*

The patient is marked in the upright position. The inframammary fold, breast and axillary fat are marked and also the area between the inframammary crease and the costal margin. The patient is positioned supine with the arms abducted. General anesthesia is used for the procedure. Two puncture holes are made for liposculpture, one at the anterior axillary pillar and the second in the lateral mammary sulcus. Tumescent infiltration is carried out with Ringer and epinephrine 1:500,000. After 15-minute wait, pretunneling is performed to disrupt long-standing fibrous meshwork and facilitate subsequent liposculpture. Accurate liposculpture is then performed to remove the fat component of the breast, total mammary region and axillary fat with crossing of the tunnels and feathering of the peripheral area to blend smoothly into the surroundings. Attention is given to lateral pectoral border, where an excess of fatty tissue is usually present. The inframammary fold is disrupted and minimal liposculpture performed between inframammary line and costal margin to allow skin redraping yet avoid adhesion in this area.

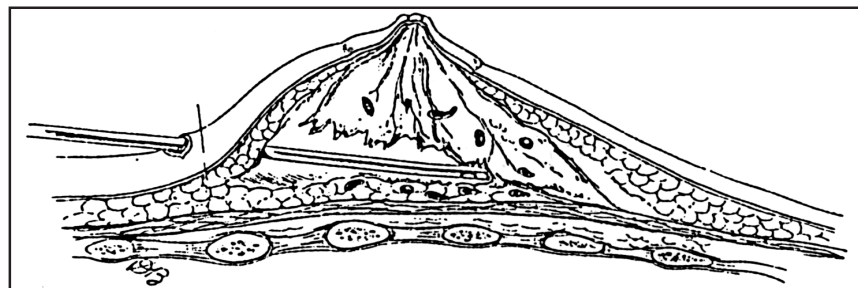
During liposculpture, glandular tissue is dissected from pectoral fascia deeply and from skin superficially subsequently isolating the gland, which is left attached only in the subareolar area (Fig. 1,A). Only after having completed liposculpture do we evaluate the amount, consistency and location of the residual tissue, which must be removed. A small 1cm periareolar incision is made down to the dense fibrous tissue, which will im-

mediately bulge into the incision. The mobilized dense glandular tissue is eased out with sequential pulls with hemostats-teasing interconnecting fibrous strands to unfold the glandular tissue-till it is completely delivered as almost one piece suspended with a small stalk to the nipple (Fig. 1,B). The glandular tissue is excised under direct vision using electrocauterization, leaving a small disc of breast tissue under the nipple areola complex to avoid antiesthetic depression. Hemostasis is usually not needed and drains are usually not used. The small incisions are closed with dermal reabsorbable sutures and adhesive dressing and elastic garment are applied. The elastic garment must be worn continuously except for showers for 4-6 weeks.

### RESULTS

Follow up ranged from 1-12 months. Eighteen patients - 10 of them with history of anabolic steroid intake-had combined liposculpture and periareolar pull through excision (Figs. 2-4). Six patients with intraoperatively revealed fatty gynecomastia had only liposculpture (Fig. 5). It was difficult to preoperatively establish how much glandular tissue is present at the moment of physical examination. Early postoperative results, when adhesive dressing was removed, showed minimal edema and bruising in some cases. Bruising, when present, usually gravitated low on the side of the trunk. One patient had small hematoma on the right side due to early overuse of his arm, which resolved gradually. Another patient developed seroma after combined liposculpture and excision that subsided without interference. There were no cases of nipple areola complex necrosis, infection, saucer deformity, residual lumps or contour irregularity. One patient had small residual skin excess, which he did not find bothering. Subsequent follow ups showed a smooth masculine breast contour and inconspicuous scars. The periareolar incision offered the added advantage of a strategically camouflaged scar in the margin of the areola. All patients were pleased with their results. None of the patients resumed the use of anabolic steroids. Long-term follow up showed stable results over time with no recurrence.

Fig. (1-A): The cannula dissects the glandular tissue from the pectoral fascia to mobilize the gland during liposculpture.



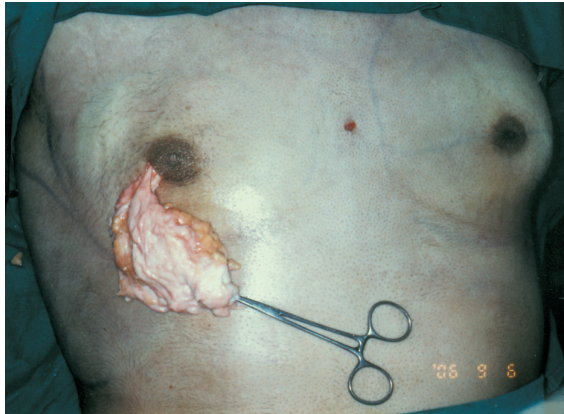


Fig. (1-B): Intraoperative view at the end of liposculpture. Note the difference after the gland is pulled through the small periareolar incision on the right side but not yet on the left side.



Fig. (2-A): Preoperative frontal view of large bilateral gynecomastia in a 27-year-old patient with history of anabolic steroids intake.



Fig. (2-B): The 1-month postoperative result after liposculpture and periareolar pull-through gland excision with masculine chest contour and well-concealed periareolar scar.



Fig. (2-C): Preoperative profile of the same patient.

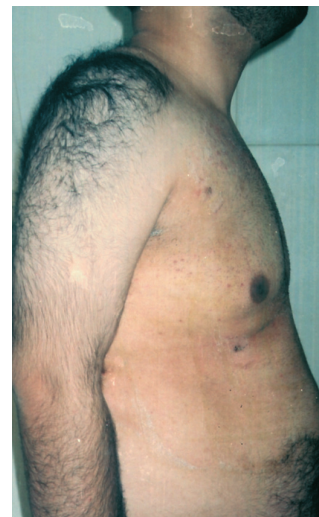


Fig. (2-D): Postoperative profile of the same patient with no skin redundancy.



Fig. (3-A): Preoperative appearance of a 25-year old male with moderate gynecomastia.

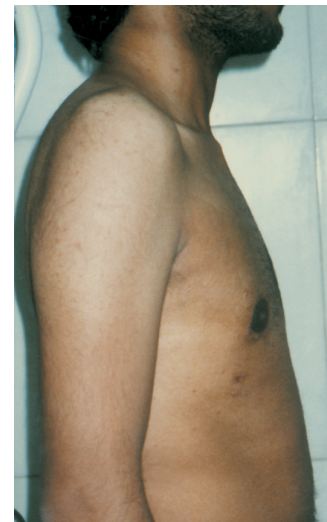


Fig. (3-B): The 10-month postoperative result after combined treatment shows a normal chest contour with well-concealed periareolar scar.

Fig. (4-A): Preoperative frontal view of large gynecomastia in a 32-year old amateur body builder with history of anabolic steroids intake.

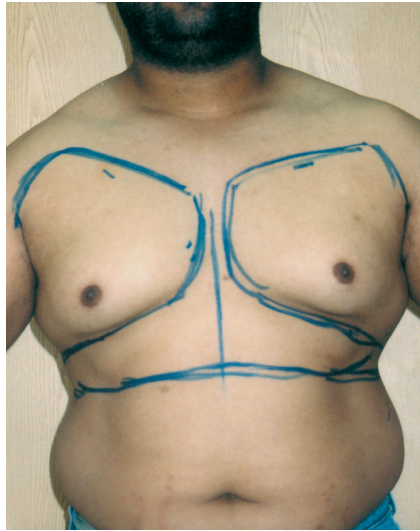


Fig. (4-B): The 3-month post-operative result after combined liposculpture and periareolar pull-through excision with masculine chest contour and defined pectoralis major.



Fig. (4-C): Preoperative profile of the same patient.



Fig. (4-D): Post-operative profile of the same patient shows a typical result in this amateur body builder.



Fig. (5-A): Preoperative appearance of a 26-year old patient with moderate gynecomastia.



Fig. (5-B): The 1-year follow-up result with smooth masculine chest contour.



## DISCUSSION

Gynecomastia is the commonest breast lesion in males. Patients with anabolic steroids-induced gynecomastia can be somewhat challenging to manage because they are very addicted to their training and have a tendency to resume the use of anabolic steroids. Strict instructions are given regarding postoperative exercise to reduce complications particularly hematoma due to the greater chest vascularity present in these patients [7,8]. Cardiovascular exercise is resumed fairly soon after operation, light weight training after 2 weeks and full training regimen after 4-6 weeks. The only hematoma in this series resulted from over use of the patient right arm in the early postoperative period. Patients are also counseled that continued steroid use puts them at risk for recurrent disease because a small amount of hormonally responsive tissue may remain in the subareolar button needed to support nipple viability and appearance, and this tissue may respond to stimulation by further steroid use [7]. No recurrences were observed during one-year follow up in our patients as they already declined to use steroids.

Surgical treatment of gynecomastia presents the dual challenge of adequate treatment of the disease while minimizing the perceptible stigma of breast surgery in these self-conscious patients [9,10]. Combined liposuction and excision ensure adequate treatment of the disease [11,12]. Numerous techniques have been described to eliminate or reduce the semicircular incision in the areolar area [5,6]. Combined liposculpture and pull-through gland excision through a periareolar minimal stab incision employed in this series accomplishes this consistently.

Liposculpture through incisions at the periphery of the mammary region enables crossing of the tunnels and effective contouring of the male breast with proven efficacy. It plays the main role in lipomatous pseudogynecomastia in which the aspiration of a large amount of fat is a common finding. The fat layers are encased in the vertically oriented fibrous septi of the superficial fascial system. Removal of fat lobules allows shrinkage of the septi and enables skin retraction in patients with large gynecomastia and considerable skin redundancy. Liposculpture is extended to almost the entire chest area to allow skin redraping. Concentric skin excision was done in only one patient at the beginning of this series. None of the subsequent patients, with different grades of gynecomastia, required residual skin excision intraoperatively or subsequently.

In fatty glandular gynecomastia-revealed mainly intraoperatively at the end of liposculpture-and in true gynecomastia, combined modalities are often necessary for optimal correction [13]. Techniques that rely on suction alone in these cases may be associated with some recurrence [14,15]. Regardless the amount of fat, tunneling and suction are important to refine the peripheral contour and define the glandular tissue. After liposculpture of the surrounding adipose tissue, the gland is already mobilized and is easily pulled through the 1cm periareolar incision. The small periareolar stab incision provides a direct and precise access through which the mobilized gland can be eased out rapidly as almost one piece. Because liposculpture causes an increase of coagulative factors in the treated area, it plays an important role in spontaneous hemostasis and drains are usually not used.

Morselli [5] removed the gland in pieces utilizing a different pull through technique. Each piece, pinched between the thumb and index finger, is clamped subcutaneously with the instrument introduced through the liposuction incision in the mammary crease or anterior axillary fold and pulled outside for excision. A small amount of tissue is removed with each pull-through movement. This, the author admits, is a disadvantage because it takes longer than traditional sharp excision through the areola [5]. The same applies to other techniques using transaxillary approach [16,17]. Periareolar pull-through technique employed in this series offers the advantage of a more direct and precise "pull-through" of the breast bud. Complete control of the resection also avoids the risk of catching the skin because subcutaneous clamping of the gland is not needed. It is easy to perform, rapid and the periareolar location of the small access incision strategically camouflages the scar.

Preoperative distinction between adipose and glandular tissue is difficult, and therefore liposculpture should be used during the first part of the operation in nearly all cases of gynecomastia. The threshold for excision should be low to avoid residual subareolar lump while liposculpture through distant access incisions, at the periphery of the mammary region, enables better chest contouring and gland mobilization, a periareolar stab offers the advantage of a more direct and precise "pull-through" of the breast bud. Liposculpture helps to refine the peripheral contour and define the glandular tissue. It also helps the skin to contract and skin resections are rarely indicated. Combined liposculpture and periareolar pull-through excision is rapid, minimally invasive, technically straightforward and provides consistent results. It is offered

as an additional minimally invasive option for the treatment of gynecomastia.

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