

## The Need of Glandular Excision After Convantional Liposuction in Gynecomastia

### Jinekomasti Tedavisinde Konvansiyonel Liposuction Sonrası Glandüler Eksizyon İhtiyacı

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#### ÖZET

**Amaç:** Jinekomasti, glandüler, duktal veya adipozal bileşenlerin artması sonucu erkek meme dokusunun iyi huylu büyümesidir. Bu çalışmada, jinekomasti tedavisinde cerrahın intraoperatif değerlendirmesine bağlı olarak konvansiyonel liposuctiondan yapıldıktan sonra glandüler eksizyon gereksinimini araştırmayı amaçladık.

**Yöntem ve Metotlar:** 2013 ve 2017 yılları arasında jinekomasti nedeniyle ameliyat edilen erkek hastaların tıbbi kayıtları retrospektif olarak incelendi. Tüm jinekomastili erkek memeleri liposuction yöntemi ile ameliyat edildikten sonra cerrahların intraoperatif değerlendirmesine bağlı olarak ihtiyaç duyulan memelere glandüler eksizyon da uygulandı.

**Bulgular:** 52 erkekte (ortalama 25.61 yıl, ortalama takip: 21.5 ay) toplam 99 meme (5 tek taraflı, 47 bilateral) ameliyat edildi. Toplam 71 (% 71.7) memeye sadece liposuction uygulandı. Geriye kalan 28 (% 28.2) meme, liposuction ve ardından glandüler eksizyon ile ameliyat edildi. Tek başına liposuction uygulanan 8 (% 11.2) memede, takiplerde revizyon ihtiyacı olduğu görüldü ve 6 ay sonra glandüler eksizyon uygulandı. Duktal eksizyon ile ameliyat edilen 8 meme eklendiğinde, 99 memenin 36'sına (% 36.3) liposuction + rezeksiyon uygulanmıştır.

**Sonuç:** Retrospektif olarak yapılan bu çalışmada görülmüştür ki jinekomasti nedeniyle ameliyata alınan memelerin yaklaşık olarak üçte ikisinde liposuction tek başına yeterli bir cerrahi sağlarken üçte birinde liposuction ile beraber glandüler eksizyon gerekmektedir. İntraoperative olarak liposuction sonrası fizik muayene ile bariz glandüler doku kalmış hastalarda glandüler eksizyon uygulamasından kaçınılmamalıdır.

**Anahtar Kelimeler:** jinekomasti; liposuction; glandüler eksizyon

#### ABSTRACT

**Purpose:** Gynecomastia refers to benign enlargement of male mammary tissue as a result of an increase of glandular, ductal, or adiposal components. In this study, we aimed to investigate the need of glandular excision after conventional liposuction in gynecomastia based on the intraoperative evaluation of surgeons.

**Patients and Methods:** We reviewed the medical records of males who were operated for gynecomastia between 2013 and 2017. Although all breasts were operated with the liposuction, a glandular excision was also applied to the breasts that were needed depending on the surgeon's intraoperative evaluation.

**Results:** A total of 99 breasts (5 unilateral, 47 bilateral) were operated in 52 males (mean age 25.61 years, mean follow-up: 21.5 months). A total of 71 (71.7%) breasts were operated with liposuction alone. The remaining 28 (28.2%) breasts were operated with liposuction followed by glandular excision. Only 8 (11.2%) breasts that underwent liposuction alone needed a revision with glandular re-excision 6 months later. When 8 breasts operated with ductal excision were added, 36 (36.3%) of 99 breasts were operated with liposuction+resection.

**Conclusion:** This retrospective study showed that liposuction alone provided satisfactory results in about two thirds of breasts with gynecomastia whereas glandular re-excision becomes necessary in addition to liposuction in a third of patients. Glandular excision should not be avoided when an obvious glandular tissue remained in intraoperative physical examination following liposuction.

**Key Words:** gynecomastia; liposuction; glandular excision

#### Introduction:

Gynecomastia refers to benign enlargement of male mammary tissue as a result of an increase of glandular, ductal, or adiposal components. Prior studies have indicated that it may affect 30% to 50% of healthy adults. Gynecomastia is

a part of normal development at puberty and infancy, and as it may regress spontaneously, simply observation is all that is necessary during these periods. Apart from these periods, however, pharmacological offenders such as marijuana, ketoconazole, calcium channel

blockers, or sprinolactone, as well as pathological conditions such as gastrointestinal system disorders, cirrhosis, adrenal/testicular neoplasias, and hypogonadism should be sought. Gynecomastia is characterized by proliferation of ductal tissue within the connective tissue stroma. It may also occur secondary to chronic disorders and neoplasias. Gynecomastia is thought to stem from a variety of pathological conditions characterized by a testosterone-estrogen imbalance. The majority of affected males are asymptomatic, and when symptoms appear, they include unilateral or bilateral enlarged breasts, palpable firm breast tissue, and progressive painless breast enlargement (1-3).

Gynecomastia is a surgical condition, for which less invasive treatments are currently preferred. Favorable outcomes with minimal scar are attained by suction-assisted and ultrasound-assisted lipectomy techniques. Subcutaneous mastectomy has also been performed alone or in conjunction with liposuction techniques. Additionally, a selected group of patients with ptosis and prominent extra skin may require a more invasive technique using the conventional reduction mammoplasty method. Although these techniques and their indications vary by the severity of gynecomastia and operator preferences, suction-assisted lipectomies are one of the most commonly used techniques (1,2). In this study we aimed to investigate the efficacy of conventional liposuction technique to correct gynecomastia.

## PATIENTS AND METHODS

We reviewed the medical records of males who were operated for gynecomastia at our clinic between December 2013 and May 2017. All patients' procedural, clinical, and outpatient follow-up results were retrospectively reviewed. Clinical information, age, medical history, complaints, affected side, grade, operative approach, biopsy result, histological findings, complications, pathological diagnoses, and outcomes were reviewed. All patients underwent preoperative hormone testing, complete blood count and routine biochemical testing, and breast ultrasonography. Preoperative assessment was done with the Simon gynecomastia classification (grade 1: Small enlargement, no

skin excess grade; 2a: Moderate enlargement, no skin excess; Grade 2b: Moderate enlargement with extra skin; grade 3: Marked enlargement with extra skin) (3). The excised samples were histologically analyzed. The patients were examined early (at first 2 postoperative weeks) and late during follow-up.

## RESULTS

A total of 99 breasts were operated in 52 males (5 unilateral, 47 bilateral) between 2013 and 2017. The age range of the study population was 17-57 years (mean age 25.61 years). In all patients, breasts enlargement was the main complaint and associated with the presence of a palpable bump. Two patients also had pain. Two patients had hormonal disorders at the preoperative period and were operated only after being treated by the endocrinology department. The preoperative ultrasonography revealed gynecomastia in all patients. The patients had no history of steroid or narcotic drug use, nor they had used any medication having the potential to cause gynecomastia. According to the Simon classification, preoperative evaluation revealed 15 breasts with Grade I gynecomastia, 46 breasts with grade IIa gynecomastia, 30 breasts with grade IIb gynecomastia; 8 breasts with grade 3 gynecomastia.

Although all breasts were operated with the liposuction technique, a glandular excision through a periareolar incision was also applied to the breasts that were needed by depending on the surgeons' intraoperative evaluation. Among 99 breasts of 52 patients, a total of 71 (71.7%) breasts of 37 patients were operated with liposuction alone (**Fig 1,2**). A total of 28 (28.2%) breasts of 15 patients were operated with liposuction followed by inferior hemiareolar incision and ductal excision (**Fig 3**). Patient satisfaction was achieved in 92% of patients. Only 8 breasts of 4 patients (8% of all breasts, 11.2% of breasts that underwent liposuction alone) were needed a revision with glandular re-excision 6 months later. When 8 breasts re-operated with ductal excision were added, 36 (36.3%) of 99 breasts were operated with liposuction followed by glandular resection. The range of follow-up duration was 6-44 months (mean 21.5 months). None of the patients who were operated with liposuction alone or liposuction plus ductal excision

developed hematoma, infection, hypertrophic scar, keloid, nipple or skin necrosis. Two patients had pain for longer than 1 week. None of 50 patients had pain by the end of 1 week. All patients were applied tight undershirt corsets. Ductal tissues removed at excision were sent to pathological examination. All pathology results were reported as benign gynecomastia material.



**Figure 1:** 17 year-old man with bilateral gynecomastia. **A-B-C:** Preoperative views of the patient **D-E-F:** Postoperative 24 months views of the patient after treatment with liposuction alone



**Figure 2:** 25-year-old man with bilateral gynecomastia. **A-B-C:** Preoperative views **D-E-F:** Postoperative 18 months views of the patient after treatment with liposuction alone.



**Figure 3:** 23-year-old man with gynecomastia in the right breast. **A-B:** preoperative views **C-D:** Postoperative 36 months views of the patient after treatment with liposuction+ glandular excision.

## DISCUSSION

Gynecomastia is a benign enlargement of male breast tissue secondary to ductal, stromal and/or fatty tissue proliferation. The gold standard treatment for gynecomastia is surgery. However, before contemplating any surgical intervention, a medical evaluation should be made, offending pharmacological agents should be eliminated, and any underlying systemic disorder should be primarily corrected. Any suspected malignant breast tumor should be addressed prior to surgery. Gynecomastia is an important problem for men because enlarged breasts causes patient concern, impaired self perception, and sense of embarrassment. Moreover, enlarged breasts may trigger psychological disorders and fear of malignancy, which should be eliminated. (2,4,5)

The choice of surgical technique depends on the severity of breast enlargement and the presence of excessive fat tissue. Current surgical options are primarily concentrated on liposuction to remove excessive fatty tissue. Alternative methods are used to remove remainder glandular tissues and /or excessive skin (1). Liposuction procedure became widespread in 1970s and is currently used for various conditions in all body surface regions. Performed with special cannulas and aspiration systems through a small skin incision, liposuction procedure is now widely used to treat gynecomastia (4,5,6).

Suction-assisted techniques such as power-assisted liposuction to reduce operator fatigue, ultrasound-assisted liposuction, or laser liposuction have recently been developed. Whichever liposuction technique is used, it can remove part of the glandular breast tissue. As the breast tissue contains a small amount of glandular tissue, liposuction techniques alone may be sufficient to correct gynecomastia.

Ultrasound-assisted liposuction (UAL) has been primarily recommended by many authors to correct gynecomastia (2,6,7). UAL usually eliminates the problem of excessive skin by means of skin contraction. Nevertheless, this technique should be performed with special care to avoid the risk of thermal burns (1,8). Laser liposuction, radiofrequency-assisted and Vibration amplification of sound energy at resonance (VASER, SoundSurgical Technologies, LLC, Louisville, CO) assisted liposuction are

relatively novel techniques that allow simultaneous excision of both fatty tissue and glandular tissue while ensuring minimal scar and satisfactory outcomes. (8,9). Proponents of these techniques have reported a better excision of fibrous fat with contour control, and postoperative skin contraction. It is of note that the use of laser liposuction, power-assisted liposuction, and UAL devices require a significant learning curve. These systems require more numerous tools and equipment, and unlike classical liposuction, an experienced team. However, latest technological advances have not decreased the importance of classical liposuction, which continues to be used for a variety of indications. In addition, similar to the classical liposuction technique, this technique may require direct glandular tissue excision when there exists firm and resistant gynecomastia material (9,10).

In some circumstances more invasive procedures continue to be used to remove the remaining glandular tissue and/or excessive skin, alone or in combination with liposuction. The endoscopic cartilage shaver technique can be used to excise glandular tissue. Despite being associated with favorable cosmetic outcomes for inconspicuous scars, it is associated with a complication rate as high as 20% (11).

A technique described by Webster, which involves the removal of enlarged breast tissue through an incision from the side of areola resembling an inferior hemi-areolar incision, is still used because its scar is located at the areola-skin border and is therefore less visible [12]. Although subcutaneous mastectomy is used alone to treat gynecomastia, it may result in bleeding, hematoma, chest wall irregularities, and poor aesthetic outcomes. On the other hand, most studies have been showed that liposuction is superior than subcutaneous mastectomy alone (13,14).

The surgical combination of liposuction and direct resection of glandular tissue using a periareolar or transareolar approach is widely used for enlarged breasts with a large amount of glandular tissue. Fugerland et al (8), in a systematic review of the relevant literature, indicated that although the majority of surgical techniques used to correct gynecomastia are associated with favorable outcomes, minimal scars, and various complications, the most consistent results have been achieved by a combination of liposuction and traditional

surgical excision. Kim et al (13) reported that the patients who were operated with a combination of liposuction +subcutaneous mastectomy had better outcomes than those who underwent liposuction alone. They stated that liposuction +subcutaneous mastectomy yielded better results, particularly for total dimensional and general satisfaction scores.

Our study was a retrospective one where liposuction was performed for all of 99 breasts of 52 patients. Twenty-eight of these patients also underwent glandular excision through an inferior periareolar incision after liposuction. However, in 4 patients (8 breasts) that underwent liposuction alone needed a revision with glandular re-excision 6 months later. This retrospective study indicates that liposuction alone achieved favorable outcomes in 63 (63.6%) of 99 breasts whereas glandular excision was required for 36 (36,3%) breasts after liposuction. In a study by Çil, glandular re-excision became necessary for only 7.2% of gynecomastia patients with liposuction alone (10). On the other hand, multiple studies have reported better outcomes with liposuction combined with glandular excision (13). We explain such contradicting results with the hypothesis that liposuction yields better outcomes for breasts with lesser glandular tissue whereas the combination of liposuction+glandular tissue excision provides favorable outcomes for breasts with an abundant glandular tissue. The simplest and easiest way to understand the necessity of the glandular excision can be determined by the surgeon's physical examination during surgery.

In the literature, there are comparative studies on liposuction alone with the glandular resection alone or the combination of liposuction+glandular resection. However, there are not enough studies showing the need for glandular resection after liposuction, depending on the surgeons' evaluation with physical examinations intraoperatively. This study showed that liposuction alone is sufficient in 63.6% of enlarged male breasts, although liposuction+glandular excision is needed in 36.3% of breasts.

## CONCLUSIONS

This retrospective study showed that liposuction alone provided satisfactory results in about two thirds of breasts with gynecomastia

whereas glandular re-excision becomes necessary in addition to liposuction in a third of patients. Glandular excision should not be avoided when an obvious glandular tissue remained in intraoperative physical examination following liposuction.

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