

COMBINED SURGICAL TREATMENT OF GYNECOMASTIA

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Summary. Surgical treatment of gynecomastia could present unique challenges for the plastic surgeon. Achieving a good balance between effectiveness of the selected approach and the satisfactory aesthetic outcome often is a difficult endeavor. Optimal surgical treatment involves a combination of liposuction and direct excision. In the present study the charts of 11 patients treated with suction-assisted liposuction and direct surgical excision were retrospectively reviewed; a special emphasis is placed on the surgical technique. The mean follow-up period of the patients was 11.6 months. No infection, hematoma, nipple-areola complex necrosis and nipple retraction was encountered in this series. The combined surgical treatment of gynecomastia has shown to be a reliable technique in both small and moderate breast enlargement including those with skin excess.

Key words: *gynecomastia, surgical excision, liposuction, seroma formation*

INTRODUCTION

Gynecomastia is a benign enlargement of the male breast which may be unilateral or bilateral [1]. This condition has many identifiable causes though most cases are idiopathic [2]. Most clinical specialists worldwide accept an arbitrary classification based on physiologic, pathologic, pharmacologic, and idiopathic causes (Table 1) [3-5].

Morphologically there are three main types of gynecomastia: fat, glandular and fatty-glandular, the latter being the most common one [6]. By presumption, the fatty type may be treated by liposuction alone and the glandular type requires sharp excision [6, 7]. The fatty-glandular type requires different approach to the fat and to the glandular component which determines the need of combined surgical treatment. Patients affected by gynecomastia with significant enlargement and ptosis often require skin reduction too, with significant impact on the final aesthetic outcome being the aesthetically unpleasant scars, which are the main patient concern.

Table 1. Classification of gynecomastia

| Causes of Gynecomastia | |
|--|--|
| 1. Developmental / Physiologic | |
| ● Neonatal | |
| ● Pubertal | |
| ● Aging | |
| 2. Drug-induced | |
| 3. Hypogonadism (decreased androgen synthesis or increased androgen resistance) | |
| ● Primary | |
| – Acquired (trauma, infection, torsion, radiation exposure, mumps, chemotherapy) | |
| – Congenital | |
| ● Secondary | |
| – Hypogonadotropic hypogonadism | |
| – Kallmann syndrome | |
| – Pituitary failure (infarction, infection, neoplasm) | |
| 4. Tumors (increased estrogen production) | |
| ● Steroid-producing (adrenal, testis) | |
| ● Human chorionic gonadotropin-producing (testis and others) | |
| ● Aromatase-producing (testis) | |
| ● Bronchogenic carcinoma | |
| 5. Systemic | |
| ● Thyrotoxicosis (altered testosterone / estrogen binding) | |
| ● Renal failure (acquired testicular failure) | |
| ● Cirrhosis (increased substrate for peripheral aromatization) | |
| ● Adrenal (adrenocorticotropic hormone deficiency or congenital adrenal hyperplasia) | |
| 6. Congenital disorders | |
| ● Klinefelter syndrome | |
| ● Enzyme defects of testosterone synthesis (may be late onset) | |
| ● Vanishing testis syndrome (anorchia) | |
| ● Androgen resistance syndromes | |
| ● True hermaphroditism and related conditions | |
| ● Increased peripheral tissue aromatase | |
| 7. Familial | |
| 8. Miscellaneous | |
| ● HIV | |
| ● Chest wall trauma | |
| ● Psychological stress | |
| ● Spinal cord injury | |
| ● Malnutrition / refeeding (increased substrate for peripheral aromatization) | |
| ● Herpes zoster infection | |
| ● Cystic fibrosis | |
| ● Alcoholism | |
| ● Myotonic dystrophy | |
| 9. Idiopathic | |

Several classification systems of gynecomastia have been proposed, based on clinical features in order to guide the optimal choice of surgical procedure. One of the most relevant to the daily practice is the classification of Simon et al [8] who identified four grades of gynecomastia:

- Grade I: Small enlargement without skin excess;
- Grade IIa: Moderate enlargement without skin excess;
- Grade IIb: Moderate enlargement with minor skin excess;

- Grade III: Marked enlargement with excess skin, mimicking female breast ptosis.

The aim of the present article is to demonstrate the preliminary experience of the authors with the combined surgical treatment of mild to moderate gynecomastia with suction-assisted lipectomy and sharp surgical excision.

PATIENTS AND METHODS

Authors reviewed eleven male patients with bilateral breast enlargement of various degrees of gynecomastia for a period of four years in their personal practice in Bulgaria and Spain. The range of the patients' age was between 19 and 47 (mean age: 32.2y). Demographic and medical information on the patients was collected, including age, regular habits, comorbidities, endocrine status, current and past medication, and family history. Data on patients' occupations were also collected and assessed. Anamnestic information on breast enlargement was recalled and included age of notable breast enlargement, age of maximal breast enlargement, and duration of the condition. For surgical treatment were considered patients with at least one year of persisting gynecomastia. Prior to surgery all the patients were evaluated by mamologist with the corresponding diagnostic imaging methods- ultrasound and/or mammography. All patients had their photograph taken and were evaluated for the grade of their breast enlargement. Gynecomastia was estimated using the classification of Simons and associates, with division into four grades [8]. Patients with Simon grade III gynecomastia were not included in the study.

SURGICAL TECHNIQUE

General analgesia is applied with a combination of local tumescent infiltration of Klein solution in all of the cases. At the first stage of the intervention a suction-assisted liposuction is performed through a small incision on the lateral chest wall between the middle and the medial axillary line. After the suction is completed, a periareolar incision is made along the inferior pole of the areola. Sharp and blunt dissection is performed separating the glandular tissue from the underlying pectoralis muscle fascia. A button of dense tissue is always preserved under the areola in order to maintain the nipple-areola vascularity and to prevent unpleasant concavity deformation. Remaining tissue is then excised and in that manner the mastectomy is completed. Meticulous hemostasis is of paramount importance and a cautery is used to gain it. In some patients, a closed-suction drain is placed for 24 hours. The surgical wound is closed with single absorbable subcuticular inverted sutures and intracuticular non-absorbable sutures, which are usually removed around the seventh postoperative day. The patients are placed in a snug vest with moderate compression which is worn for about 3 to 4 weeks. In the cases in which it corresponds, the patients are allowed to perform cardiovascular exercise and lightweight training after approximately that period of time (3 weeks). About 4 to 6 weeks are needed to be fully recuperated.

In all the cases the excisional sample was pathologically studied.

RESULTS

Eleven patients (22 breasts) were treated with the above mentioned technique. In 4 of them a steroid use was the reason of the breast enlargement (Fig. 1) and in the rest of the patients gynecomastia was idiopathic (Fig. 2). The mean follow-up period was 11.6 months. There were 10 uncomplicated procedures, as represented by the case in Fig. 1. One patient developed postoperative unilateral seroma formation, which was resolved with aspiration and

compression. No recurrence occurred in the period of postoperative follow-up but one patient did not present in the one year checking up. All the patients were happy with the final result.

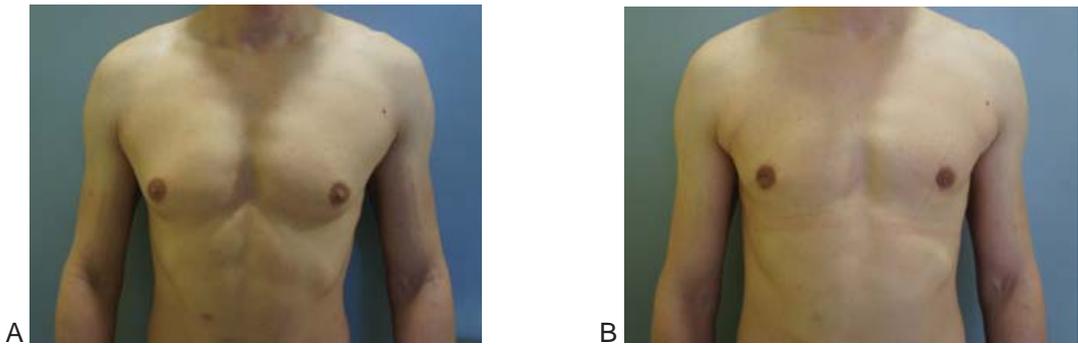


Fig. 1. A 42-year-old patient with Simon's type I gynecomastia due to anabolic steroids use: (A) Preoperative evaluation; (B) Postoperative result at one month – a mild swelling is still present (apparent mars of the snug vest)

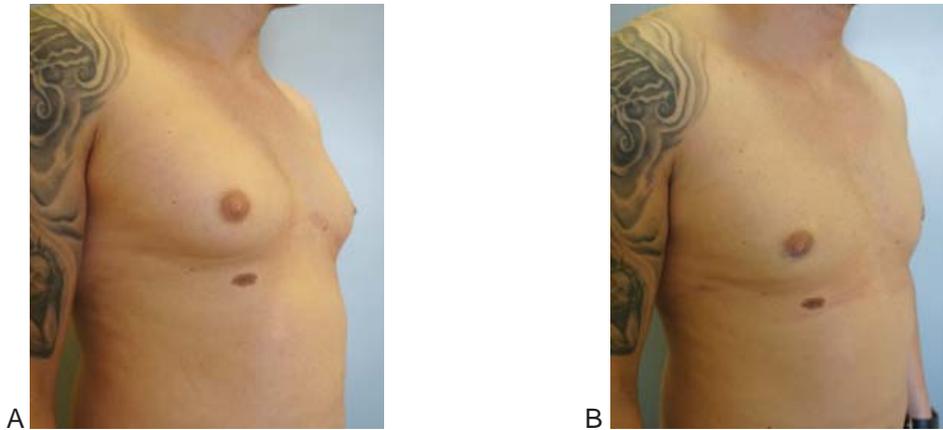


Fig. 2. A 32-year-old patient with idiopathic Simon's type IIa gynecomastia persisting from the puberty: (A) Preoperative evaluation; (B) Postoperative result at two months

DISCUSSION

In the surgical management of gynecomastia achieving a good balance between effectiveness of the selected approach and the optimal aesthetic outcome is the main task. Many authors have shared their personal experience in the field of surgical correction of this condition [4-7, 9-13]. Some of them promoted the excisional techniques [6, 9], while others defend the role of liposuction considering the importance of the minimal breast scarring [10, 12]. In the present study, like in the one of Babigian and Silverman [13], we used a combination of these techniques to obtain optimal results. On the base of our preliminary experience we totally agree with formers that the direct excision alone does not prove adequate for shaping the chest wall and the addition of suction lipectomy is needed for that aim. Something more, the liposuction on its own leads to skin retraction [14] which in our opinion is very useful in cases of moderate gynecomastia with skin excess. Especially in young patients with high skin retractability it could be of paramount importance in the pre-surgical planning when a doubt exist about the necessity of skin reduction. Caution must be taken in performing large resections, which are associated with increased complication rates [11] and unpleasant scars in the breast aesthetic unit.

On the other hand, the subareolar tissue is too dense and fibrous to be amenable to suction alone (Fig. 3). Therefore, a combination of direct excision and suction provides superior tissue removal and better cosmetic results.



Fig. 3. Dense subareolar breast tissue prior to its sharp excision

Because of the extension dissection in some of the cases a hematoma and seroma formation is a special concern. In some series the hematoma is the most common complication [13]. In the series of the present study we have not observed this complication. It could be ascribed to the meticulous hemostasis we applied intraoperatively and the good compression in the postoperative period. Nevertheless, a suction drain was always placed for the night in the cases of moderate breast enlargement especially those with skin excess (Simon's type IIb).

CONCLUSION

The combined surgical treatment of gynecomastia consisting of suction-assisted liposuction and direct surgical excision allows for effective removal of both the fat and the glandular tissue of the male breast. This approach provides excellent cosmetic results with low risk of complications or recurrence in both small and moderate breast enlargement with skin excess.

REFERENCES

1. Lista F, Ahmad J. Gynecomastia. In: Spear SL, Willey SC, Robb GL et al. eds. *Surgery of the breast: principles and art*. 3rd edition. Lippincott Williams & Wilkins; Philadelphia, PA 2011; 1205-10.
2. Cohen IK, Pozez AL, McKeown JE. Gynecomastia. In: E. Fl. Courtiss (Ed): *Male Aesthetic Surgery*. St. Louis: Mosby 1991.
3. Glass AR. Gynecomastia. *Endocrinol Metab Clin North Am* 1994; 23(4): 825-37.
4. Neuman JF. Evaluation and treatment of gynecomastia. *Am Fam Physician* 1997; 55(5): 1835-44, 1849-50.
5. Rohrich RJ, Ha RY, Kenkel JM, et al. Classification and management of gynecomastia: defining the role of ultrasound-assisted liposuction. *Plast Reconstr Surg* 2003; 111(2): 909-23; discussion 924-5.
6. Morselli PG. „Pull-through“: a new technique for breast reduction in gynecomastia. *Plast Reconstr Surg* 1996; 97(2): 450-4.
7. Bretteville-Jensen G. Surgical treatment of gynaecomastia. *Br J Plast Surg* 1975; 28(3): 177-80.
8. Simon BE, Hoffman S, Kahn S. Classification and surgical correction of gynecomastia. *Plast Reconstr Surg* 1973; 51(1): 48-52.

9. Reyes RJ, Zicchi S, Hamed H, et al. Surgical correction of gynaecomastia in bodybuilders. *Br J Clin Pract* 1995; 49(4): 177-9.
10. Lee JH, Kim IK, Kim TG, et al. Surgical correction of gynecomastia with minimal scarring. *Aesthetic Plast Surg* 2012; 36(6): 1302-6.
11. Handschin AE, Bietry D, Hüsler R, et al. Surgical management of gynecomastia- a 10-year analysis. *World J Surg* 2008; 32(1): 38-44.
12. Wong KY, Malata CM. Conventional versus ultrasound-assisted liposuction in gynaecomastia surgery: a 13-year review. *J Plast Reconstr Aesthet Surg* 2014; 67(7): 921-6.
13. Babigian A, Silverman RT. Management of gynecomastia due to use of anabolic steroids in bodybuilders. *Plast Reconstr Surg* 2001; 107(1): 240-2.
14. Coleman WP 4th, Hendry SL 2nd. Principles of liposuction. *Semin Cutan Med Surg* 2006; 25(3): 138-44.



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