Transaxillary excision laparoscopic surgery for gynecomastia combined liposuction: preliminary results and literature review

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Abstract

Introduction: Gynecomastia is a common biological condition that might cause a major psychological impact. Surgical excision has been an effective treatment for gynecomastia and the conventional technique has been performed by open surgery through the areola line. Recently, there has been a shift from the open approach to minimally invasive techniques. In this report, we describe our technique which includes laparoscopic excision and liposuction via a single trans axillary incision.

Patients and methods: Cross-sectional descriptive study, the longitudinal follow-up has conducted between October 2017 and December 2021, a total of 7 patients with mild and moderate gynecomastia treated by transaxillary incision laparoscopic surgery combined with liposuction were enrolled.

Results: All procedures were performed successfully, and no cases were converted to open surgery. The mean operative time for liposuction and laparoscopic excision was 80 min for each side. The mean hospital stay was 2 days. No postoperative complications such as surgical site infection or seroma were observed, also there was no case of partial or complete nipple necrosis. There was only one patient reported a little numbness, but it was returned to a normal situation in 3 weeks. Mean follow-up was 24 months. All the patients were delighted with the surgical treatment outcomes and no re-operated interventions were necessary.

Conclusion: Laparoscopic excision through a single transaxillary incision combined with liposuction is a minimally invasive, effective, and safe technique, with good aesthetic results and an acceptable complication rate.

Keywords: Gynecomastia, mastectomy, laparoscopic surgery.

Introduction

Gynecomastia syndrome is a condition that results in overgrowth of the mammary gland in men and boys and might be accompanied by an increase in fatty tissue. The pathology occurs on one or both sides. Breast development depends primarily on the balance between estrogen and androgen in serum. Any physiological factor or disease that

causes the imbalance between these hormones can lead to gynecomastia syndrome. It is estimated to encounter more than 40% of men on many levels. Most gynecomastia cases during puberty might gradually disappear [1],[2],[3]. Internal medicine is necessary during the proliferative phase, whereas for the above 2-year gynecomastia, surgery is the most efficient treatment method [3]. The purpose of treatment is to remove excessive tissues and recover normal breast contour aesthetically with minimal scar. The classic technique using incisions in the areola area or breast line is still applied in many medical facilities in Viet Nam. In many cases, this technique leaves complications like hypertrophic scars, and partial or complete necrosis of the nipple, causing greater psychological problems than before surgery [4].

In recent years, many minimally invasive techniques in gynecomastia treatment including either liposuction, laparoscopy, or a combination of both have developed worldwide [5]. There still has several controversial arguments about these techniques like location issues and the amount of incision as well as equipment being used. In this study we present the initial experiences using laparoscopic excision combines with liposuction through a single incision at the axilla base, all the techniques were performed and controlled completely under laparoscopic. The result was obtained with an aesthetic scar hidden under the axilla, short hospitalization stays, minimal complications, and achieved great aesthetic results.

Research method

From October 2017 to December 2021, 7 patients were diagnosed with gynecomastia I-IIB degree according to Simon classification, age from 14-30, underwent laparoscopic mastectomy with liposuction supported. 4 cases of 1 side mastectomy and 3 cases of both side mastectomy. Para-clinical diagnoses like ultrasound, X-ray, and endocrine examination were conducted prior to surgery with all patients to identify the proper diagnoses.

Surgical techniques:

Patient was marked the mammary gland boundary before surgery in the standing position. Using prophylactic antibiotics during general anesthesia. Surgery in supine position with 2- or 80-degrees angle to the torso. The incision was 35mm inside the axilla. A reconstituted solution consisted of 200ml of 0.9% saline, 200ml of distilled water, 0.5 mg of epinephrine, and 20ml of 2% lidocaine was injected into the mammary gland to reduce bleeding. After 10 mins, started to perform liposuction with a 4mm liposuction tube. After liposuction, the remain of mammary gland was removed using laparoscopic equipment. Surgical assistant was assigned to elevate the skin with an instrument to create space for laparoscopy. The laparoscopy optic was inserted through the incision to specifically observe the remaining mammary tissue, thereby laparoscopy was used to completely remove the mammary gland and controllably prevent hemorrhage. The thickness of mammary gland below the areola area was left from 5 to 10 mm depending on patients breast shape assessment to achieve the best aesthetic result.

All the mastectomy processes were performed and controlled under a laparoscopic screen. All patients were placed drains on each breast side and compressed bandages in surgical sites after surgery.

Post-surgery care: withdrew drainage after 2 days when the fluid amount was below 30ml. Place gently bandage wrap around the chest area after surgery in 2 weeks to prevent bleeding and seroma.

Follow-up: All the patients were monitored based on re-examination after surgery 1 month, 3 months, and 6 months. Surgical result was assessed according to aesthetic result, complications after surgery, and patients satisfaction scale. Ranking as poor, average and good is based on factors such as symmetrical breast, areola shape, areola complex protrusion, breast contour regularity and overall fit. Patients satisfaction scale is assessed following a scale of 10, from 0 which is very unsatisfied to 10 is really satisfied.

Results

Patient	Age	Reason	Simon Scale	Surgery	Complications	Patients' satisfaction scale	Results categorized
1	24	Physiology	IIA	1 side	-	9/10	Good
2	14	Physiology	IIA	2 sides	-	9/10	Good
3	18	Androgen insensitivity	IIA	2 sides	Decreased skin sensation	9/10	Average
4	26	Unfounded	IIA	1 side	-	9/10	Good
5	21	Unfounded	I	1 side	-	10/10	Good
6	30	Unfounded	IIA	1 side	-	10/10	Good
7	25	Unfounded	IIB	2 sides	-	10/10	Good

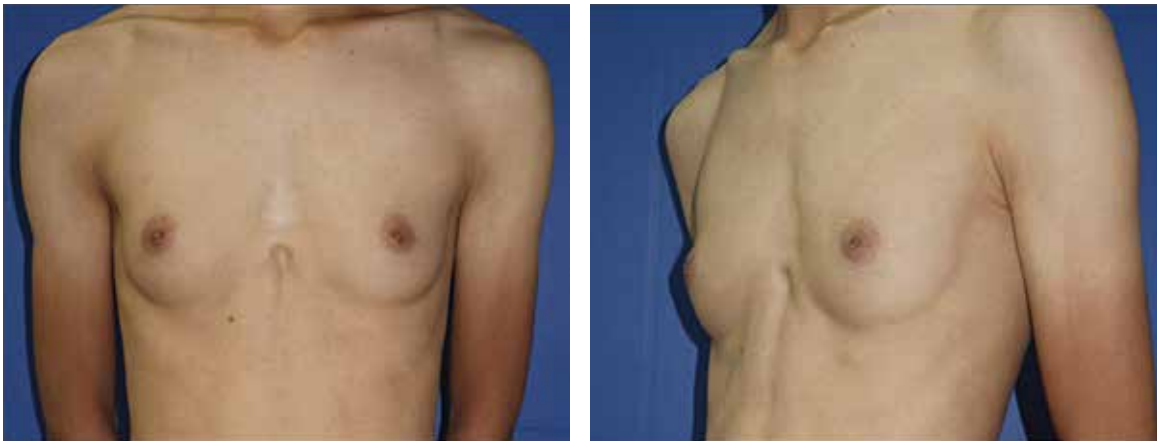

Figure 1: Patient 18 years old, gynecomastia on both sides (picture pre-surgery)

From 10/2017 to 12/2021, 7 patients were diagnosed with gynecomastia IIB degree or higher, aged from 14-30, and underwent laparoscopic mastectomy with liposuction supported. Gynecomastia degree was classified according to Simon classification, 7 patients were divided into 3 groups from I degree (2 patients), IIA degree (4 patients) and IIB degree (1 patient). 4 cases of 1 side mastectomy and 3 cases of both side mastectomy. The average age had surgery was 22,6. The primary reason for gynecomastia was unknown (4 patients), physiology (2 patients), and one patient with mild androgen insensitivity syndrome. All patients underwent endocrine examination and breast gland ultrasound.

Laparoscopic mastectomy with liposuction was performed on 7 patients. The average amount of liposuction on each side was 200ml, and the average weight of glandular tissue was 87g. The mean surgical time for liposuction and laparoscopic mastectomy was 80 min each side. The results of histopathological examination for all cases were benign breast tissue hyperplasia. Drains were placed for each breast in all cases and withdrawn after 2 days. Average hospitalization stay was 2 days.

All patients have natural skin after surgery without any further removing excessive skin, even with gynecomastia IIB degree. There was no necrosis of the areola complex, nipple skin, and no

areola deformity. There were no complications of seroma or bleeding.

The Median follow-up was 24 months, with no recurrence during follow-up. 7/7 patients were satisfied with the surgical result, average satisfaction was 9,4/10 (n=7). Evaluation of post-surgery outcome was good in 6 cases and average in 1 case and there is no need for any further repair intervention.

Biến chứng sau phẫu thuật: 1 trường hợp giảm cảm giác vùng núm vú sau mổ, được tháo bỏ băng chun và tự hồi phục dần cảm giác sau 3 tuần.

Post-operative complications: In one case that reduced sensitivity of nipple area after surgery, the elastic bandage was removed and self-recovered their sensations after 3 weeks.

Discussion

Surgery remains one of the most effective methods to treat gynecomastia. Many surgical techniques were described in the past, mainly are open techniques with direct incision and without liposuction have proven to be reliable in gynecomastia treatment, however, these techniques usually leave scars or deformities in the areola or breast line, sometimes losing their aesthetic and psychological problems than caused by the original gynecomastia [6]. Other common complications include either postoperative seroma, bilateral nipple disproportion, partial or complete necrosis of the areola complex, or necrosis or lack of epidermis/dermis structures around the chest which might cause deformity [7].

Figure 2: Patient 18 years old, gynecomastia on both sides (picture post-surgery 3 days and after 12 months)

In recent years, there have been changes in direct interventions to minimally invasive techniques. The main principle of this technique includes liposuction alone [8],[9] that also achieves successful results in certain cases or combines with remaining mastectomy through a small incision below the areola or skin moving technique and mastectomy through a distal incision [10].

Some authors have reported laparoscopic mastectomy using multiple incisions combined with an areola incision or laparoscopic with many incisions from chest wall [11],[12],[13]. In 1998, Ohyma for the first time performed mastectomy and breast liposuction supported by laparoscopy on a 14-year-old patient with bilateral gynecomastia by all techniques including liposuction and mastectomy through laparoscopic surgery with a single incision from the axilla [14].

Our series used a 35 mm long incision which was hidden inside the axilla for liposuction and mastectomy. Through the direct perspective under endoscope, it can clearly observe the pectoralis major fascia, glandular tissue, surrounding fat layer and subcutaneous fascia. Therefore, surgical manipulations are performed safely and accurately to ensure the areola complex as well as the skin of the chest wall were protected, along with the pectoralis major fascia is preserved intact. Another great benefit of the laparoscopic technique is that it helps to control bleeding attentively in areas with many injured vessels from the chest wall to skin which leads to no cases of postoperative bleeding or seroma, moderate drainage about 20ml of dilute blood fluid per day and withdraw after 2 days, corresponding to Hua Caos average of 20ml/ day withdraws after 2-3 days, Yan Yangs average 80,9ml after 2,8 days. [15],[16] (Figure 3)

We have used the normal laparoscopic equipment, available and does not require expensive and specialized equipment. Whilst laparoscopic use there is no need to inflate air to create a cavity as other reports [13]. In reality, after liposuction and having surgical assistant pulls the vale to help to create cavity, the remain manipulation of mammal gland is performed quite easily and accurately. Average surgical timeframe is 80 min per breast including liposuction and gland laparoscopic removal, corresponding to other authors like Yan Yang with an average time is 82 min, Hua Cao is 70-90 min with experienced surgeons [15],[16].

Figure 3: Fine surgical scar fits nicely inside the axilla (picture after 6 months of surgery)

Postoperative complications that reduce the sensitivity of nipple area and thoracic wall skin after surgery occur in patients with skinny physical condition, very thin skin, even during surgery was carefully dissected to protect the subcutaneous fascia but still appeared slight numbness. Patient was loosened elastic bandage after surgery and self-recovered their sensations after 3 weeks.

One disadvantage of this technique which according to many authors is difficult to implement for gynecomastia cases III degree in Simon classification. One case in the study had gynecomastia IIB degree that didn't need to be treated excess skin yet still had good aesthetic result, but it still required a larger amount of patients to identify accurately the efficiency of technique for this group of patients.

Conclusions

Transaxillary excision laparoscopic surgery combines liposuction is a safe and effective technique to treat gynecomastia in men with mild and moderate levels (I-IIB degree), this procedure initially shows the high aesthetic result after surgery with acceptable complications rates.

Conflict of interest: The authors declare that they have no conflict of interest.

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