

One Stage Ultrasonic-Assisted Liposculpture Combined With Peri Areolar Surgical Gland Excision Without Skin Resection: Can Manage Sever Degrees of Glandular Gynecomastia?

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ABSTRACT

Background: Gynecomastia means abnormal hypertrophy of the male breast tissue. Gynecomastia is classified into 4 degrees, according to Simon et al., with grade 4 or III being characterised by marked glandular hypertrophy with skin excess. There are many procedures that are described in gynecomastia management as surgical excision, suction-assisted lipectomy, and ultrasound-assisted liposuction (UAL).

Objectives: In our study, we will manage grade III cases with UAL only with peri-areolar surgical gland excision without skin excision procedure.

Patients and Methods: Twenty-five cases were included in the study in the period from February 2019 to January 2021. It is a prospective study on grade III gynecomastia cases using UAL only with periareolar surgical gland excision without skin excision procedure.

Results: The study encountered 25 cases, whose age ranged between 18 and 32 years old. All cases were grade III glandular gynecomastia. Operation time was varied, ranging from 1.5 hours to 2 hours. The amount of liposuction ranged between 400cc to 1300cc and the weight of the excised gland was between 20 and 55gm.

Complications: 2 cases revealed seroma, which were managed by aspiration, and 1 case of saucer shape deformity due to over excision of reto-areolar glandular tissue. 1 case suffered from a decrease in nipple sensation which improved within 4 to 6 months post-operative. These complications occurred in 2 cases out of the 25 cases, with an overall success rate of 92%. No hematomas, infections, skin necrosis, asymmetry or skin redundancy were noticed.

Conclusion: Ultrasonic-assisted liposculpture combined with periareolar surgical gland excision without skin resection procedure guarantees safe, effective, and satisfactory results in managing grade III idiopathic gynecomastia. No or minimal complications with minimal skin redundancy with good cosmetic results.

Key Words: Gynecomastia – UAL – Surgical excision.

Disclosure: No conflict of interest.

Ethical Committee: Approval was obtained from the Ethical Committee of the Faculty of Medicine of Sohag University.

INTRODUCTION

Gynecomastia means abnormal hypertrophy of the male breast tissue [1]. It is prevalent in about 2/3 of adolescent boys. Galen is the first who describe this anomaly in the 2nd century, while surgical resection was first described by Paulis of Aegina in the 17th century [2,3].

Idiopathic causes are the most common cause followed by rare many other causes, duo to imbalance between estrogen and testosterone levels.

According to pathological point of view, Gynecomastia divided into 3 types; fibrous type, florid type and mixed type [4].

Gynecomastia is classified in to 4 degrees, according to Simon et al., with grad 4 or III is characterized by marked glandular hypertrophy with skin excess [5]. Table (1).

Table (1): Gynecomastia classification as described by Simon in 1973.

Grade I	Mild enlargement, no skin excess
Grade II A	Moderate enlargement, no skin excess
Grade II B	Moderate enlargement with extra skin
Grade III	Marked enlargement with extra skin

There other classifications were published also Letterman and Schuster and Rohrich et al., [6,7].

There are many procedures that is described in gynecomastia management as surgical excision, Suction-assisted lipectomy and ultrasound-assisted liposuction (UAL) [8].

Simon grade III cases were Usually managed by skin resection operations with different techniques as Superiorly or inferiorly based pedicle areolar flaps and free nipple techniques [9].

In our study we will manage grade III cases with UAL only with peri areolar surgical gland excision without skin excision procedure.

PATIENTS AND METHODS

25 cases were included in the study in the period from February 2019 to January 2021. It is a prospective study on gynecomastia cases grade III using UAL only with peri areolar surgical gland excision without skin excision procedure.

All patients with grade III presented to us were informed about the different methods of management and only cases whom agreed on UAL only were included in the study.

Unfit cases were excluded from the study. Pre-operatively; history taking and clinical examination were done. Routine investigations were requested, all cases do breast ultrasonic examination before intervention to exclude any abnormal breast lesions.

All patients were followed-up for 6 months post intervention for possible complications, patient satisfaction and skin redundancy.

Surgical procedure:

We start by photographing of the patient while standing, then marking the working area with permanent markers while the patient's arms are adducted to detect the lateral border of pectoralis major muscle. All cases were done under general anesthesia. Infiltration of the tumescent fluid (ringers lactate solution, 1cc of 1: 1000 epinephrin and 20cc of lidocaine 2%). Amount injected per each side was ranged between 400cc to 900cc depending on tumescent state. Then we wait for 15 minutes after fluid infiltration. Usually, we use 2 incisions

for our work; the first is the areolar incision (just below the nipple) and the second is the anterior axillary fold incision (both are 5 to 8mm length). Silicon port protector are fixed in place of incisions, then we start the emulsification process. UAL emulsification is usually finished when the tissue resistance is over (it takes about 10 to 15 minutes per side using 80% power). Then fat extraction is started and we do superficial and deep liposuction in breast tissue together with extracting the axillary fat bad aiming to define the lateral border of pectoralis muscle. After finishing the lipo-sculpting part we then do gland excision through the areolar incision (we leave part of the gland in the retro-areolar space to avoid post-operative deformity). Then we do skin tightening using the UAL device at power 50 to 60%. Wound closure by 5.0 vicryle suture then compression garment is used in all cases in order to maintain no dead space and avoid the hematoma and seroma formation (no drains were used in any case) for about 1 month postoperatively. Then external lymphatic drainage massage is encouraged as daily care for 3 weeks post-operative.

RESULTS

25 cases were included in the study, age ranged between 18 and 32 years old. All cases were grade III glandular gynecomastia. The body mass index of the patients ranged between 24 to 35kg/m².

Operation time ranged from 1.5 hour to 2 hours including the time of 15 minutes before starting the emulsification process.

The amount of liposuction ranged between 400cc to 1300cc and the weight of the excised gland was between 20 to 55gm.

All cases were discharged 2 hours after operation, no drains were put.

As regarding the complications, 2 cases (8%) revealed seroma which were managed by aspiration, 1 case (4%) of saucer shape deformity due to over excision of retro-areolar glandular tissue. 1 case (4%) suffered from decrease in nipple sensation which improved within 4 to 6 months post-operative. These complications occur in 2 cases (8%) from the 25 cases with the overall success rate of 92%. No hematomas, infections, skin necrosis, asymmetry or skin redundancy were noticed.

Cases presentation:

Case (1): Male patient, 20 years.



Fig. (1)



Fig. (2)

Figs. (1,2): Pre and post-operative results of case 1 "frontal view".



Fig. (3)



Fig. (4)

Figs. (3,4): Pre and post-operative results of case 1 "left lateral view".



Fig. (5)



Fig. (6)

Figs. (5,6): Pre and post-operative results of case 1 "right lateral view".

Case (2): Male patient, 25 years.



Fig. (7)



Fig. (8)

Figs. (7,8): Pre and post-operative results of case 2 "frontal view".



Fig. (9)



Fig. (10)

Figs. (9,10): Pre and post-operative results of case 2 "left lateral view".



Fig. (11)



Fig. (12)

Figs. (11,12): Pre and post-operative results of case 2 "right lateral view".

DISCUSSION

Gynecomastia is a very common anomaly that affects boys, adolescent and event old age. Most of cases are idiopathic and most of them resolve spontaneously without intervention especially with mild to moderate cases [1].

Different systems were created to classify gynecomastia as Simon et al classification, Letterman and Schuster classification and Rohrich et al., classification. The most widely used is Simon classification [5].

In our work, all cases were due to idiopathic causes and all were grad III between 18 and 32 years old.

Highly defined pectoral region is a very aesthetically appealing area in males. Multiple deformities can alter this shape as gynecomastia, traumatic causes and lipodystrophy that motivate both patient and surgeon to do contouring procedures [10].

No single procedure is the best of gynecomastia management, and it depends on many factors including patient examination and expectations and also surgeon experience and preference [8].

Patient self-confidence, satisfaction, social acceptance and sense of well-being must be considered and delivered to gynecomastia case [11,12].

The surgical management has grown substantially over the last 60 years [13,14]. The proposed treatments entail regaining of normal breast aesthetics in form of restoration of the male chest shape with good contour, elimination of the inframammary fold, correction of nipple areola complex position, removal of redundant skin and insure equality of both sides [6]. Male breast has four distinct zones those areas should be targeted incrementally to avoid post-operative patient dissatisfaction [15].

Management of sever degrees of gynecomastia (grad III) mostly is surgical. There are different modalities that were described in surgical skin excision techniques as omega incisions, nipple transpositions on a variety of pedides, concentric circle technique and free nipple techniques [8].

UAL has become widely accepted as the treatment for gynecomastia [16]. Suction assisted liposuction combined with open excision was first described by Teimourian and Perlman [17].

The main idea of UAL is to transform ultrasonic waves to vibratory waves that cause both thermal,

mechanical and cavitation effects that cause lipolysis and fat emulsification [18].

Recently, there have been reports of combining UAL and surgical excision of the gland within the same setting [19].

Hoyos in his work concluded that ultrasonic-assisted high-definition liposculpture is an aggressive procedure of body contouring that enables the surgeon to perform superficial liposculpture to define the surface musculature. However, it is a difficult and time-consuming procedure and require high experience and learning curve [20].

Hady [21] published the Liposuction excision of gynecomastia through an axillary incision with the traditional liposuction, but with incidences of seroma and hematoma although he used suction drain at the end of operation which was not needed in our technique with the use of UAL and leaving the incision without closure.

Esme et al., in his study conclude that, aiming to obtain excellent aesthetic results, UAL should be combined with periareolar gland excision. With minimal complications and no need to do skin excision [22].

In our study the operation time was ranged from 1.5 hour to 2 hours including the time of 15 minutes before starting the emulsification process. The use of UAL adds more time in the steps of fat emulsification and skin tightening to about double the regular time of the traditional procedure.

Rohrich in his series of work (61 patients) in the period between 1987 to 2000 reached success rate about 87% in cases were managed by suction-assisted lipectomy and UAL. He used the later technique in managing most of the cases and did the skin excisional procedures when there is skin redundancy after UAL attempts [7].

In our study the overall complications rate was 8% with total success and satisfaction rate of 92% by using the UAL with surgical gland excision through peri-areolar incision. With no hematomas, infections, skin necrosis or asymmetry were noticed. Also, no skin redundancy was noticed during the follow-up period.

Hodgson also in his series assume that on trying to get a good aesthetic result and ensure high degree of patient satisfaction, the Ultrasound-assisted liposuction can give these results especially with soft to firm types of glandular gynecomastia [23].

Conclusion:

Ultrasonic-assisted liposculpture combined with peri areolar surgical gland excision without skin resection procedure guarantee safe, effective and satisfactory results in managing grad III idiopathic gynecomastia. No or minimal complications with minimal skin redundancy with good cosmetic results.

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