

ORIGINAL ARTICLE

SHORT TERM OUTCOME AND SATISFACTION RATE FOR THIN LEAN VERSUS OBESE PATIENTS FOLLOWING SUBCUTANEOUS MASTECTOMY FOR GYNECOMASTIA PERFORMED BY GENERAL SURGEONS

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ABSTRACT

Introduction: Benign enlargement of breast in male is labelled as Gynecomastia. This condition is source of cosmetic embarrassment in males and this is why most males are eager to get rid of it as early as possible. All focus is made on cosmesis. Extremes of age are mostly affected by this pathology. Its prevalence varies from 30% to 35% globally. It is mainly idiopathic however, drugs, hormonal disorders, liver cirrhosis, pulmonary & renal diseases are other causative agents. Liposuction and surgical excision are two main modalities to deal with it. The aim of our study was to determine the short-term Outcome and Satisfaction Rate for thin lean versus obese Patients following subcutaneous mastectomy for Gynecomastia performed by General Surgeons.

Material & Methods: This retrospective study was conducted at Government THQ Hospital Sabzazar, Lahore and Rasheed Hospital, Lahore from June 01, 2018, to April 30, 2021 and included 80 male patients with Gynecomastia those divided in two groups (Group A: thin lean, Group B; obese patients). Subcutaneous mastectomy for Gynecomastia was performed. Outcome and Satisfaction rate were recorded and compared between groups.

Results: Mean age, BMI and Serum testosterone level were 24.07 ± 1.94 vs. 31.81 ± 3.06 years ($p=0.131$), 18.63 ± 2.54 vs. 28.91 ± 0.62 Kg/m² ($p=0.540$) and 564.57 ± 100.32 vs. 381.08 ± 63.74 ng/dL ($p=1.983$) in group A and B, respectively. History of intake of steroid was reported in 15.0% thin lean patients. Mean Operative time and hospital stay were 50.97 ± 9.01 vs. 63.98 ± 26.87 min. ($p=1.405$) and 2.31 ± 1.04 vs. 2.98 ± 1.63 days ($p=0.092$) in group A and B, respectively. Mean Durations of wound drainage were 7.68 ± 1.47 and 8.43 ± 0.96 days ($p=0.531$) in group A and B, respectively. Postoperative bleeding, seroma formation and SSI were reported in 1 (2.5%), 2 (5.0%) and 1 (2.5%) obese patients, respectively. Satisfaction rate was high in thin lean patients as compared to obese patients (100.0% vs. 52.5%; $p=0.0001$).

Conclusion: Subcutaneous mastectomy yields appreciable short-term outcome and significantly higher satisfaction rate in thin lean patients as compared to in obese patients.

Key Words: Gynecomastia; Subcutaneous Mastectomy; Satisfaction Rate

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INTRODUCTION

Benign enlargement of breast in male is labelled as Gynecomastia.^{1,2} This condition is source of cosmetic embarrassment in males and this is why most males are eager to get rid of it as early as possible. All focus is made on cosmesis.³ Extremes of age are mostly affected by this pathology.⁴ Its prevalence varies from 30% to 35% globally.^{5,6,7} It is mainly idiopathic however, drugs, hormonal disorders, liver cirrhosis, pulmonary & renal diseases are other causative agents.^{8,9}

Liposuction and surgical excision are two main modalities to deal with it.^{10,11} At an early stage, its management is easier because appearance of redundant skin at a higher stage, makes post-treatment cosmesis more challenging to achieve.¹² Other than skin overgrowth, obesity also plays a significant role in defining its cosmetic outcome. In obese patients, presence of excessive amount of subcutaneous fat around Gynecomastia creates an uneven look after surgical excision and this sometimes unsatisfactory for the patient as well as for the surgeon too.¹³ In our country, this notched look (depressed nipple areola complex after subcutaneous mastectomy in obese patients) doesn't affect males as they use to cover their bodies in routine and also because their main concern of getting Gynecomastia surgery is the noticeable breast over the clothes. However, a surgeon pays full attention to gain desired outcome i.e. smooth even out surface.¹⁴ In literature, various plastic surgeon have reported the outcome and patients satisfaction rate following subcutaneous mastectomy for Gynecomastia. In a study by Taheri AR¹⁵ et al, mean satisfaction score of patients and plastic surgeon were 8.1 ± 1.396 (range: 5-10) and 8.59 ± 0.75 (range: 7-10). Boljanovic S¹⁶ et al, reported hematoma in 4.76% patients and satisfaction was observed in 86 % patients.

Patients with Gynecomastia customarily approach plastic surgeon for its treatment and plastic surgeons utilize amalgamation of liposuction & surgical excision to get best outcome.^{15,16} So, we wanted to determine the short term Outcome and Compare the Satisfaction Rate for thin lean versus obese Patients following subcutaneous mastectomy for Gynecomastia performed by General Surgeons. General surgeon use to perform complete subcutaneous mastectomy rather partial surgical mastectomy with assisted

liposuction as plastic surgeon use to do to achieve cosmetic results.

MATERIAL AND METHODS

This retrospective study was conducted at the Government THQ Hospital Sabzazar, Lahore and Rasheed Hospital, Lahore form June 01, 2018 to April 30, 2021. This study included 80 male patients between 18 to 80 years of age with Gynecomastia of grade I & II (without excessive skin). Patients with Gynecomastia those divided in two groups (Group A: thin lean (BMI ≤ 25 Kg/m²), Group B; obese patients (BMI > 25 Kg/m²). Patients with ASA III & IV, Bleeding disorders, BMI > 35 Kg/m², Grade III & IV Gynecomastia and Malignancy of breast on biopsy (Fine needle aspiration cytology) were excluded from the study. The study was approved from Ethical Review Committee as per institutional guidelines. Subcutaneous mastectomy for Gynecomastia was performed via circumareolar incision under general anesthesia by general surgeons. A suction drain was placed in subcutaneous place after complete excision of all glandular tissue. Patients' demographics and Perioperative data including Operative time, length of stay and Duration of drain were recorded. Outcome in terms of hematoma, seroma, SSI, skin/ nipple areola necrosis and Revision surgery were assessed postoperatively and at follow up visits (2 weeks postoperatively) recorded (Figure 1 & 2). Satisfaction rate was rated by asking patients to score the cosmetic outcome between 0-10: where "0" is unsatisfied & "10 is highly satisfied) at follow up visits.



Figure 1: Gynecomastia and subcutaneous mastectomies in thin lean patients. A: Bilateral gynecomastia, B: Bilateral subcutaneous mastectomies with excised mammary glands, C: Postoperative appearance, D: Unilateral gynecomastia (Left), E: Left subcutaneous

mastectomy with excised left mammary gland, F: Postoperative appearance

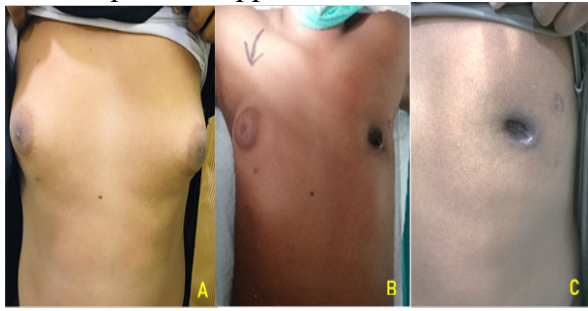


Figure 2: Gynecomastia and subcutaneous mastectomy in obese patient. A: Bilateral gynecomastia, B: Left subcutaneous mastectomy, C: Depressed left Nipple areola-complex

All the collected data was entered into SPSS version 22 and analyzed. Quantitative data like age, serum testosterone level, Operative time and length of hospital stay were presented as means and standard deviations. The qualitative data like gender, DM, HTN, Chronic liver disease, Grade of Gynecomastia, patient Satisfaction, etiology and outcome were presented as frequency and percentage. Comparison was made among thin lean and obese patients. Independent T test was applied to assess difference between the quantitative variables of the two groups. Whereas Chi-square was applied for qualitative variables. P value of less than equal to 0.05 was considered significant.

RESULTS

Characteristics of patients and disease are shown in Table I. There were 29 (72.5%) patients in the age group 18 – 25 years, 8 (20%) patients in the age group 26 – 30 years and 3 (7.5%) patients in age group of 31 – 35 years, with age range from 18 years to 34 years, in thin lean group. In obese patients group, there were 3 (7.5%) patients in the age group 18 – 25 years, 7(17.5%) patients in the age group 26 – 30 years, 26 (65%) patients in age group of 31 – 35 years and 4 (10%) patients in the age group 36 – 40 years with age range from 20 years to 38 years. Short term outcomes and satisfaction rate for thin lean versus obese Patients following subcutaneous mastectomy performed in both hospitals are shown in Table 2.

DISCUSSION

Mammary glands in males are rudimentary. Emergence of breast lump in females and breast growth in males are always worrisome for them. Male carrying female chest is a social stigma for him and that is the motive that

Gynecomastia surgery is one of those surgeries which men ask for cosmetic reasons. After evolution of surgical specialties, plastic surgeons exclusively take part in war against gynecomastia to erase it. Role of general surgeon is merely acknowledged in management of this benign tumor because advanced tumors demands complex cosmetic techniques (fat graft) and technologies (liposuction) for its eradication. General surgeons' role is restricted to subcutaneous mastectomy with or without surplus skin excision. Though surgery copes with all grades of Gynecomastia but sometimes these surgical procedures may need to be aggregate with liposuction to attain complete cosmesis. The present study helps to identify those cases which can't be benefitted with surgery alone.

Short term outcome after subcutaneous mastectomy in thin lean patients were good as compared to obese patients, however results were not statistically significant ($p > 0.05$) in our study. Innocenti A¹⁴ et al, observed lower rate of seroma formation i.e. 1.9% in overweight patients as compared to present study i.e. 5.0% in obese patients, and similar to our study, seromas were drained percutaneously. Hematoma formation was noticed in 0.9% patients in a study by Innocenti A¹⁴ et al, which required immediate exploration, however in the present study, none of the patients developed hematoma though postoperative bleeding was reported in 2.5% obese patients which was managed conservatively. Basnet SJ⁷ et al, Blau M¹⁷ et al and Kasielska A¹⁸ et al, reported higher rate of seroma and hematoma formation i.e. 9.5% vs. 4.7%, 12.0% vs. 6.0% and 7.07% vs. 3.53%, respectively. Risk of seroma can be minimized by reducing dead space by approximately skin flaps and pectoralis fascia with absorbable sutures but this can cause the dis-contouring of chest in some patients. In our study, we utilized vacuum drain and compression bandage to lessen the risk of fluid and blood collections postoperatively. Precise attention was paid in our study to attain good quality hemostasis while dealing with perforating branches of internal mammary artery to avoid hematoma formation and sever postoperative hemorrhage so none of our patients required a second tour to operation room for wound exploration to achieve hemostasis. Kasielska A¹⁸ et al and Coskun A¹⁹ et al, reported nipple-areola complex necrosis in 0.88% and 3.12% patients however, skin/

nipple-areola necrosis was not observed in any patient (0.0%) in present study. Wound infection rate was found higher i.e. 2.5% in obese patients, in present study which was managed conservatively as compared to infection rate (0.88%) reported by Kasielska A¹⁸ et al. None of the thin lean and obese patient (0.0%) underwent revision surgery in our study. As purely operated for cosmesis, so the patient's satisfaction is the prime factor to be achieved in this surgery. In literature, there are few studies which reported variable satisfaction rate among patients of different body physique after subcutaneous mastectomy for gynecomastia. Innocenti A¹⁴ et al, reported a lower satisfaction rate among overweight patients who underwent subcutaneous mastectomy ± liposuction. Blau M¹⁷ et al, achieved 98% patient satisfaction by combining mastectomy with lipectomy. Muneer A⁴ et al, reported a satisfaction rate of 81.80% after subcutaneous mastectomy alone. The reason of lower satisfaction rate in obese patients i.e. 52.5% in present study was nipple-areola complex collapse (Figure 2B & C). Retraced scar after subcutaneous mastectomy was noted in 2.38% patients in a study by Basnet SJ⁷ et al, and they reported 88% satisfaction rate. Nipple-areola complex sits over pectoralis fascia after complete eradication of glandular tissue and this appears as a crater over the chest in obese patients because of excessive surrounding subcutaneous fat beneath skin flaps around areola. This crater is another cosmetic issue (Out of the frying pan, into the fire) for some males. Though, few men sanction this nipple-areola complex depression as this can easily be hide under the cloths but this deformity appeals cosmetic rectification after all. Blau M¹⁷ et al, reported nipple-areola complex depression in 1.0% patients however, Muneer A⁴ et al, and Mohan A²⁰ et al, put fat and breast tissue beneath complex to prevent its fall down. Babigian A and Silverman RT²¹ reported a recurrence rate of 15.0% in body builders after retained subareolar mammary tissue.

Small sample size is the limitation of this study. Further studies on larger population size and subtotal subcutaneous mastectomy (by leaving piece of glandular tissue beneath nipple-areola complex) in obese patients, to avoid its sinking, are required to make guidelines.

CONCLUSION

It is concluded that for grade I & II gynecomastia, subcutaneous mastectomy yields substantial short term outcome and desirable cosmetic results in thin lean patients. However, nipple-areola complex depression significantly lowers the satisfaction rate among obese patients after subcutaneous mastectomy alone. Leaving a disc of glandular tissue below nipple-areola complex is the commonest option that can be availed to even out this depression while sowing the seed for the recurrence risk simultaneously.

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Table 1: Characteristics of patients and disease (n=80)

Variables	Thin lean patients (n=40)	Obese patients (n=40)	P-value*	
Age (Mean±SD)	24.07±1.94 years	31.81±3.06 years	0.131**	
BMI (Mean±SD)	18.63±2.54 Kg/ m ²	28.91±0.62 Kg/ m ²	0.540**	
Serum testosterone level (Mean±SD)	564.57±100.32 ng/dL	381.08±63.74 ng/dL	1.983**	
Comorbidity	Diabetes mellitus	0 (0.0%)	1.0**	
	Hypertension	0 (0.0%)	1.0**	
	Chronic liver disease	0 (0.0%)	1.0**	
Gynecomastia	Unilateral	26 (76.47%)	2.361**	
	Right sided			
	Left sided	8 (23.52%)	0.429**	
Etiology	Bilateral	6 (15.0%)	0.743**	
	Grade I	5 (12.5%)	1.598**	
	Grade II	35 (87.5%)	0.610**	
	Raised estrogen	0 (0.0%)	3.638**	
	Drugs	6 (15.0%)	0 (0.0%)	1.209**
	Hypothyroidism	0 (0.0%)	1.0**	
	Idiopathic	34 (85.0%)	40 (100.0%)	1.872**

* Independent T test

** Not significant

Table 2: Short term outcomes and satisfaction rate for thin lean versus obese Patients following subcutaneous mastectomy (n=80)

	Thin lean patients (n=40)	Obese patients (n=40)	P-value*
Operative outcomes			
Operative time (Mean±SD)	50.97±9.01 min.	63.98±26.87 min.	1.405**
Duration of wound drainage (Mean±SD)	7.68±1.47 days	8.43±0.96 days	0.531**
Mean hospital stay	2.31±1.04 days	2.98±1.63 days	0.092**
Short term outcome			
Bleeding	0 (0.0%)	1 (2.5%)	1.419**
Hematoma	0 (0.0%)	0 (0.0%)	1.0**
Seroma	0 (0.0%)	2 (5.0%)	1.480**
SSI	0 (0.0%)	1 (2.5%)	2.642**
Skin/ nipple areola necrosis	0 (0.0%)	0 (0.0%)	1.0**
Revision surgery	0 (0.0%)	0 (0.0%)	1.0**
Satisfaction rate			
Unsatisfied	0 (0.0%)	19 (47.5%)	0.0001***
Satisfied	40 (100.0%)	21 (52.5%)	

*Independent T test

** Not significant

*** Significant