



Original Research Article

Comparative evaluation of liposuction to liposuction with endoscope assisted glandular excision in Indian subjects with gynecomastia.

		Abstract: Background: Gynecomastia affect nearly 30% of the young males and is been growingly managed using surgical treatments which have shown transition from conventional excision methods to contemporary surgical management as liposuction. There is association of emotional distress when glandular tissue is inadequately assessed, it is vital to assess combined glandular excision and liposuction procedures. Aim: The present study was aimed to comparatively evaluate liposuction to liposuction with endoscope assisted glandular excision in Indian subjects with gynecomastia. Methods: The study assessed 64 subjects with gynecomastia that underwent surgery for gynecomastia within the defined study period. In all the subjects, demographic data were assessed along with medical history and grade of gynecomastia. Surgical procedure done was either liposuction or liposuction with glandular excision. Endoscopy was done to assess fibroglandular tissue presence and need for the glandular excision. Postoperative assessment along with patient questionnaire was assessed at 6 months. Results: In 32 breast surgeries, in 30 subjects, liposuction with glandular excision and 34 subjects, liposuction alone was done. in subjects that underwent liposuction alone, bruising and four hematomas were seen along with puffy nipples that warranted one re-surgery. Glandular excision led to 8 cases of crater deformity and two cases of seroma, hematoma, and superficial skin necrosis each. Cosmetic assessment depicted similar outcomes with higher re-surgeries in liposuction alone group. Conclusion: The present study concludes that combination of glandular excision and liposuction shows comparable results to liposuction alone for management of gynecomastia. Despite the associated complexity, combined liposuction with glandular excision is efficacious and helps in making decision focusing on the need for individualized techniques and for optimum treatment strategies. Keywords: aesthetic outcomes, gynecomastia, liposuction, peri-areolar glandular excision.
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INTRODUCTION

Gynecomastia is a condition that referred to as benign growth in the breast of the males having a prevalence of 30% in young males across the globe. Gynecomastia result from imbalance in the ratio of estrogen to testosterone. The most effective way to assess physiological gynecomastia is via reassurance. The underlying disease must be considered to manage the pathological gynecomastia. With time, surgical treatment for gynecomastia has evolved with

advancement from breast tissue excision with or without removal of the skin using lunate inframammary incisions to the intra-areolar incision and finally to liposuction.¹

Subjects that have gynecomastia also feel low self-esteem, poor body image, and sadness. Any procedure that triggers memories before disease is definitive to have adverse effect on the mental health of the patient and might not fully depict the disease. Hence, the major

aim of the surgery for gynecomastia is less scar or not scar. The disease is solved effectively using the liposuction which leaves very little or hardly any scar.² Despite adipose tissue can be removed using the liposuction, the glandular tissue which is usually left behind lead to unacceptable and unesthetic end results which continue to give embarrassment and emotional distress in the subject. It is considered that management of grade IIb and III gynecomastia using liposuction only does not address the skin excess issue.³

The primary aim of gynecomastia surgery will be violated when extra skin is removed as it would leave unpleasant scars. In gynecomastia of severe grade, liposuction along with gland excision is an efficacious management option. The present study was aimed to comparatively evaluate liposuction to liposuction with endoscope assisted glandular excision in Indian subjects with gynecomastia.

MATERIALS AND METHODS

The present clinico-observational study was aimed to comparatively evaluate liposuction to liposuction with endoscope assisted glandular excision in Indian subjects with gynecomastia. The study subjects were from Department of General Surgery, Shri Balaji Institute of Medical Science, Raipur, Chhattisgarh and Abhishek I Mishra Memorial Medical College and Research Centre, Bhilai, Chhattisgarh. Verbal and written informed consent were taken from all the subjects before study participation.

The study assessed 64 subjects with gynecomastia that underwent surgery for gynecomastia within the defined study period of 1st January 2024 to 31st March 2026 [27 months]. In all the subjects, demographic data were assessed along with medical history and grade of gynecomastia. Surgical procedure done was either liposuction or liposuction with glandular excision. Endoscopy was done to assess fibroglandular tissue presence and need for the glandular excision. Postoperative assessment along with patient questionnaire was assessed at 6 months.

In all the subjects, comprehensive history was recorded including jaundice and drug use. Grade of gynecomastia was assessed by comprehensive examination. Abdomen was also examined along with secondary sexual characteristics assessment and examination of testes to rule out any cancers. Blood tests were done as pre-anesthetic work to rule out liver diseases and checking the hormone levels when required. Breast imaging was

done using the ultrasound.

Before surgery, preoperative markings were made with subject standing and all surgeries were done under general anesthesia. In liposuction, surgery was done with subject in supine position and both arms at 90 degrees of abduction. A 4mm stab incision was made in anterior axillary line within the anterior axillary fold. Tumescence solution infiltration was done in the breast tissue and surrounding area using blunt-tipped 4-mm infiltrating cannula (Klein's infiltration cannula).

Second stab incision was made in anterior axillary line at the level of the inframammary fold after 7 minutes allowing for the tumescence to start its action. A 3.5-mm blunt-tip cannula was inserted and VAL (vacuum-assisted liposuction) was done meticulously. To remove fat with precision towards completion of procedure, a cannula was placed. Desired chest contour was done meticulously. An endoscope was given via liposuction port. Suture packet technique was used where skin and subcutaneous tissue was lifted and pectoralis muscle and fascia to create visualization of space. Extra-glandular tissue was removed whenever visible. This was followed by compression dressing.

In glandular excision, an inferior periareolar incision was made that ran from the 3 o'clock position to the 9 o'clock position. Glandular tissue was cut and made free from anterior skin attachment using scissor, the gland was grabbed and excised and extracted from incision. To avoid the adhesions, care was made to not breach the pectoralis fascia. After attained the hemostasis, suction drain was placed to prevent complications as seroma or hematoma. Incision line was closed using sutures and compression dressing was placed. Excised tissue was sent for histopathology. Drains were removed when output was <30mL in 24 hours. The dressing was changed on 5th postoperative day.

Subjects were recalled on 3rd, 5th, and 14th day postoperative and every month for 6 months. Cosmetic assessment was done on 5-point Likert scale by plastic surgeons concerning flatness, scar, NAC, and symmetry as (1: very dissatisfied; 2: dissatisfied; 3 - neither; 4: satisfied; and 5: very satisfied). At 6 months follow-up, subjects were asked to fill breast evaluation form at 6 months. The questionnaire included three parts with satisfaction assessed on 5-point Likert scale as 1: very dissatisfied; 2: dissatisfied; 3: neither; 4: satisfied; and 5: very satisfied.

RESULTS

The present clinico-observational study was aimed to comparatively evaluate liposuction to liposuction with endoscope assisted glandular excision in Indian subjects with gynecomastia. The study assessed 64 subjects with gynecomastia that underwent surgery for gynecomastia within the defined study period. In 34 subjects, liposuction with glandular excision was done and in 30 subjects liposuction alone was done. bilateral gynecomastia was seen in 12 subjects and 16 subjects had asymmetrical breasts. In liposuction and glandular excision group, 6 subjects from 8 breasts had Simon's grade IIb and III gynecomastia. Demographic data were comparable in two groups with $p > 0.05$. Majority of the cases were

idiopathic and 6 subjects were on steroids. Increased glandular tissue and adipose tissue was seen on USG in all the subjects. Drains were removed on 3rd day postoperative and subjects were discharged on day 3 or 5.

It was seen that in liposuction only group, skin bruising was seen in 6 subjects from the 8 breasts that resolved spontaneously without any intervention. Hematoma was seen in 4 subjects that were managed conservatively. There was no immediate postoperative deformity in the contour. All but two subjects depicted the satisfaction from the surgery. Two subjects needed a revision surgery at the 3 months postoperative follow-up owing to persistence of the puffy nipples (Table 2).

In the liposuction with glandular excision group, 6 subjects from 8 breasts developed a crater like deformity below nipple areola complex which was attributed to the over resection and was corrected with fine-tuning liposuction using smaller-diameter spiral cannulas. Remaining crater deformity resolved with time from tissue remodelling. Two subjects reported superficial skin necrosis in nipple-areola complex that healed with dressings. Seroma and hematoma was seen in one breast each with both resolved without management. Hypopigmented scar was seen in two subjects.

At 6 months follow-up, four subjects with redundant skin attained a normal appearance of the chest without the need of any additional management. Subjects that underwent liposuction with glandular excision had cosmetic results that were comparable to the liposuction alone. Higher rate of revision surgery was seen in liposuction only group.

Table 1: Demographic data and clinical features in two groups of study subjects

S. No	Parameter	Liposuction with glandular excision	Liposuction alone
1.	Number of breasts	30	34
2.	Mean age (years)	23.6	22.4
3.	Mean BMI (kg/m ²)	25.6	26.0
4.	Grade (n)		
a)	I	10	16
b)	II a	12	12
c)	II b	6	6
d)	III	2	0
5.	Mean surgery time (min)	63	44
6.	Aspirated fat volume (mL)	308	323
7.	Duration of hospitalization (days)	4.4	3.7
8.	Mean follow-up (months)	6.6	7.2

Table 2: Complications in study subjects

S. No	Complications	Liposuction with glandular excision	Liposuction alone
1.	Re-surgery	0	4
2.	Superficial skin necrosis	2	0
3.	Partial/total NAC necrosis	0	0
4.	Irregularities	8 (crater)	4 (puffy nipples)
5.	Infection	0	0
6.	Wound dehiscence	0	0
7.	Hypo or hyperesthesia	10	2
8.	Seroma	2	0
9.	Hematoma	2	4
10.	Bruising	2	8

DISCUSSION

The present study assessed 64 subjects with gynecomastia that underwent surgery for gynecomastia within the defined study period. In 34 subjects, liposuction with glandular excision was done and in 30 subjects liposuction alone was done. bilateral gynecomastia was seen in 12 subjects and 16 subjects had asymmetrical breasts. In liposuction and glandular excision group, 6 subjects from 8 breasts had Simon's grade IIb and III gynecomastia. Demographic data were

comparable in two groups with $p > 0.05$. Majority of the cases were idiopathic and 6 subjects were on steroids. Increased glandular tissue and adipose tissue was seen on USG in all the subjects. Drains were removed on 3rd day postoperative and subjects were discharged on day 3 or 5. These data correlated with the findings of Alnaim MF et al⁵ in 2022 and Abdelrahman I et al⁶ in 2018 where data comparable to the present study was also reported by the authors.

The study results showed that in liposuction only group, skin bruising was seen in 6 subjects from the 8 breasts that resolved spontaneously without any intervention. Hematoma was seen in 4 subjects that were managed conservatively. There was no immediate postoperative deformity in the contour. All but two subjects depicted the satisfaction from the surgery. Two subjects needed a revision surgery at the 3 months postoperative follow-up owing to persistence of the puffy nipples. These results were in line with the findings of Hasanyan MA et al⁷ in 2022 and Tarallo M et al⁸ in 2019 where results for liposuction only reported by the authors were comparable to the results of the present study.

It was seen in the liposuction with glandular excision group, 6 subjects from 8 breasts developed a crater like deformity below nipple areola complex which was attributed to the over resection and was corrected with fine-tuning liposuction using smaller-diameter spiral cannulas. Remaining crater deformity resolved with time from tissue remodelling. Two subjects reported superficial skin necrosis in nipple-areola complex that healed with dressings. Seroma and hematoma were seen in one breast each with both resolved without management. Hypopigmented scar was seen in two subjects. These findings were consistent with the results of Caridi RC⁹ in 2022 and Prasetyono TOH et al¹⁰ in 2022 where results for liposuction with glandular excision comparable to the present study were also reported by the authors.

Concerning the 6 months follow-up, four subjects with redundant skin attained a normal appearance of the chest without the need of any additional management. Subjects that underwent liposuction with glandular excision had cosmetic results that were comparable to the liposuction alone. Higher rate of revision surgery was seen in liposuction only group. These results were in agreement with the findings of Asal M et al¹¹ in 2023 and Abdali H et al¹² in 2023 where results comparable to the present study were also reported by the authors.

CONCLUSION

Within its limitations, the present study concludes that combination of glandular excision and liposuction shows comparable results to liposuction alone for management of gynecomastia. Despite the associated complexity, combined liposuction with glandular excision is efficacious and helps in making decision

focusing on the need for individualized techniques and for optimum treatment strategies.

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