

Liposuction-Assisted Surgery as a Minimally Invasive Treatment for Gynecomastia: A Five-Year Experience of 40 Cases

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ABSTRACT

Background: Gynecomastia is a common benign condition in males that may cause psychological distress and cosmetic concern. Minimally invasive techniques such as liposuction-assisted surgery have gained popularity due to better aesthetic outcomes and reduced complications. This study aimed to evaluate the effectiveness and outcomes of liposuction-assisted surgery in the management of gynecomastia. **Methods & Materials:** This hospital-based observational study was conducted in the Department of Plastic and Reconstructive Surgery at KPJ Specialized Hospital, Dhaka, Bangladesh, over a five-year period from September 2021 to August 2025. A total of 40 patients with gynecomastia who underwent liposuction-assisted surgery were included. Socio-demographic data, clinical characteristics, operative details and postoperative outcomes were recorded and analyzed using SPSS version 25. **Results:** The majority of patients were aged 21–25 years (35%) and unmarried (62.5%). Bilateral gynecomastia was present in 75% of cases, with Grade IIA (37.5%) being the most common. Most patients (45%) had symptoms for 1–3 years. All procedures were conducted under general anesthesia, ensuring patient comfort and safety and 47.5% had operative times of 60–90 minutes. Postoperative complications were absent in 75% of cases, with seroma (10%) and hematoma (7.5%) being the most common. A high level of satisfaction was reported, with 65% of patients highly satisfied. **Conclusion:** Liposuction-assisted surgery is a safe and effective minimally invasive technique for the management of gynecomastia, offering low complication rates, short hospital stay and high patient satisfaction.

Keywords: Gynecomastia, Liposuction-assisted surgery, Minimally invasive, Surgical outcome, Patient satisfaction, Bangladesh.

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INTRODUCTION

Gynecomastia is a common benign condition characterized by the enlargement of male breast tissue due to the proliferation of glandular components [1]. It may occur as a result of hormonal imbalance between estrogen and androgen activity, increased peripheral conversion of androgens to estrogens, or as a consequence of certain medications and systemic diseases [2]. Gynecomastia can affect males of all age groups, including neonates, adolescents and older adults. Although it is not usually a life-threatening condition, it often causes significant psychological distress, embarrassment and reduced self-confidence among affected individuals [3].

The prevalence of gynecomastia varies widely depending on age and population [4]. Physiological gynecomastia is commonly observed during puberty due to temporary hormonal fluctuations and in many cases it resolves spontaneously [5]. However, persistent gynecomastia may require medical or surgical intervention, especially when it leads to discomfort, pain, or cosmetic concerns [6]. Surgical management remains the most effective

treatment option for long-standing or severe cases, particularly when conservative measures fail to provide satisfactory results [7].

Several surgical techniques have been described for the treatment of gynecomastia, including open excision, subcutaneous mastectomy, liposuction and combinations of these methods. Traditional open surgical approaches are effective in removing glandular tissue but may be associated with visible scars, longer recovery time and higher risk of postoperative complications [8]. In recent years, liposuction-assisted surgery has gained popularity as a minimally invasive technique for the management of gynecomastia. This technique allows for the removal of fatty tissue and contouring of the chest with smaller incisions, reduced scarring, shorter operative time and quicker postoperative recovery [9,10].

Liposuction-assisted surgery is particularly useful in patients with mild to moderate grades of gynecomastia where fatty tissue predominates. It also helps achieve better chest contour and aesthetic outcomes with minimal tissue trauma [11]. Advances in liposuction technology and surgical

techniques have further improved the safety and effectiveness of this procedure. Despite these advantages, the outcomes and complication profiles may vary depending on patient characteristics, surgical technique and surgeon experience [12].

In Bangladesh, gynecomastia is increasingly recognized as a condition that affects both physical appearance and psychological well-being of male patients, yet limited local data are available regarding the outcomes of minimally invasive surgical management [3,6]. Therefore, evaluating the clinical characteristics and treatment outcomes of patients undergoing liposuction-assisted surgery is important for guiding clinical practice [13]. In the present study, the surgical procedure performed was suction-assisted liposuction, with a small peri areolar incision was made to remove the breast disk whenever required, a minimally invasive technique that is not widely available in all hospital settings in Bangladesh. All procedures were conducted under general anesthesia, ensuring patient comfort and safety. The technique resulted in minimal scarring,

with no obvious visible large scars, thereby providing favorable cosmetic outcomes. Although same-day discharge was not routinely practiced in our setting, patients demonstrated good postoperative recovery. Additionally, many patients reported experiencing social embarrassment and bullying from peers due to the condition, which further highlights the importance of effective and aesthetically acceptable treatment options. The present study was conducted to assess the effectiveness and outcomes of

liposuction-assisted surgery as a minimally invasive treatment for gynecomastia among patients treated at KPJ Specialized Hospital, Dhaka, over a five-year period. The study aims to evaluate patient characteristics, operative details and postoperative outcomes associated with this surgical technique.

METHODS & MATERIALS

This hospital-based observational study was conducted in the Department of Plastic and Reconstructive Surgery at KPJ

Specialized Hospital, Dhaka, Bangladesh. The study evaluated patients diagnosed with gynecomastia who underwent liposuction-assisted surgery as a minimally invasive treatment modality. A total of 40 patients were included in the study over a period of five years, from September 2021 to August 2025. Patients presenting with clinical features of gynecomastia and who were willing to undergo surgical management were enrolled in the study after obtaining informed consent.



Figure 1 Sequential Steps of Liposuction-Assisted Surgery for Gynecomastia Showing Preoperative Marking, Intraoperative Procedure, and Postoperative Outcomes.

Patients aged 15 years and above with unilateral or bilateral gynecomastia who underwent liposuction-assisted surgical

correction were included in the study. Patients with recurrent gynecomastia, those with suspected or confirmed breast

malignancy, individuals with significant systemic illness unfit for surgery and patients who had undergone previous

breast surgery were excluded from the study. Detailed clinical history, physical examination findings, laterality, grade of gynecomastia, operative details and postoperative outcomes were recorded in a structured data collection sheet (Figure 1). All patients underwent liposuction-assisted surgery under appropriate anesthesia following standard surgical protocols practiced in the department. Postoperative follow-up was conducted to evaluate surgical outcomes, complications and patient satisfaction. The collected data were checked for completeness and accuracy before analysis.

Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics such as frequency and percentage were used to summarize demographic and clinical variables. The results were presented in the form of tables and charts where appropriate.

RESULTS

Table I presents the socio-demographic characteristics of the study participants (N = 40). The majority of patients were in the 21–25 years age group, accounting for 14 (35%) cases, followed by those aged ≤20

years with 10 (25%) patients. Patients aged 26–30 years constituted 9 (22.5%), while those above 30 years represented 7 (17.5%) of the study population. Regarding occupation, students formed the largest group with 16 (40%) patients, followed by service holders with 12 (30%). Businessmen accounted for 7 (17.5%) cases, while 5 (12.5%) patients were engaged in other occupations. In terms of marital status, the majority of the patients were unmarried, comprising 25 (62.5%) cases, whereas 15 (37.5%) patients were married.

Table I
Socio-Demographic Characteristics of the Patients (n = 40).

Variable	Category	Frequency (n)	Percentage (%)
Age group (years)	≤20	10	25
	21–25	14	35
	26–30	9	22.5
	>30	7	17.5
Occupation	Student	16	40
	Service holder	12	30
	Business	7	17.5
	Others	5	12.5
Marital status	Unmarried	25	62.5
	Married	15	37.5

Table II shows the clinical characteristics of the gynecomastia patients included in the study (N = 40). The majority of patients presented with bilateral gynecomastia, accounting for 30 (75.0%) cases, whereas unilateral involvement was observed in 10 (25.0%) patients. Regarding the severity of

gynecomastia based on Simon’s classification, Grade IIa was the most common presentation, found in 15 (37.5%) patients, followed by Grade IIb in 11 (27.5%) cases. Grade I gynecomastia was observed in 8 (20.0%) patients, while Grade III was present in 6 (15.0%)

patients. In terms of duration of symptoms, most patients reported symptoms lasting between 1 and 3 years, comprising 18 (45.0%) cases. A duration of less than 1 year was noted in 12 (30.0%) patients, while 10 (25.0%) patients had symptoms persisting for more than 3 years.

Table II
Clinical Characteristics of Gynecomastia Patients (n = 40).

Variable	Category	Frequency (n)	Percentage (%)
Laterality	Bilateral	30	75.0
	Unilateral	10	25.0
Simon’s grade of gynecomastia	Grade I	8	20.0
	Grade IIa	15	37.5
	Grade IIb	11	27.5
	Grade III	6	15.0
Duration of symptoms	<1 year	12	30.0
	1–3 years	18	45.0
	>3 years	10	25.0

Table III presents the operative details of liposuction-assisted surgery among the study patients (N = 40). Regarding the duration of surgery, most operations were completed within 60–90 minutes, which

included 19 (47.5%) patients. Operative time of less than 60 minutes was observed in 14 (35.0%) cases, whereas 7 (17.5%) procedures required more than 90 minutes. A hospital stay of 1 day was required for

36 (90.0%) patients, while only 4 (10.0%) patients needed hospitalization for two or more days.

Table III
Operative Details of Liposuction-Assisted Surgery (n = 40).

Variable	Category	Frequency (n)	Percentage (%)
Mean operative time	<60 minutes	14	35.0
	60–90 minutes	19	47.5
	>90 minutes	7	17.5
Hospital stay	1 day	36	90.0
	≥2 days	4	10.0

Table IV presents the postoperative outcomes and complications among the study patients (N = 40). The majority of patients experienced no postoperative complications, accounting for 30 (75.0%) cases. Among the complications observed,

seroma was the most common, occurring in 4 (10.0%) patients, followed by hematoma in 3 (7.5%) cases. Postoperative infection was reported in 2 (5.0%) patients, while contour irregularity was noted in 1 (2.5%) case. Regarding patient satisfaction after

surgery, most patients were highly satisfied with the outcome, comprising 26 (65.0%) cases. Additionally, 11 (27.5%) patients reported being satisfied, while only 3 (7.5%) patients expressed dissatisfaction.

Table IV
Postoperative Outcome and Complications (n = 40).

Variable	Category	Frequency (n)	Percentage (%)
Postoperative complications	None	30	75.0
	Seroma	4	10.0
	Hematoma	3	7.5
	Infection	2	5.0
	Contour irregularity	1	2.5
Patient satisfaction	Highly satisfied	26	65.0
	Satisfied	11	27.5
	Dissatisfied	3	7.5

DISCUSSION

Gynecomastia is a common benign condition that often requires surgical intervention when persistent or cosmetically distressing. In recent years, minimally invasive techniques such as liposuction-assisted surgery have gained increasing acceptance due to improved aesthetic outcomes and reduced morbidity. The present study evaluated the effectiveness and outcomes of liposuction-assisted surgery in 40 patients over a five-year period and the findings are largely consistent with previously published literature. In this study, the majority of patients were young, with 35% belonging to the 21–25 years age group and 62.5% being unmarried. This is in line with the findings of Acharya et al., who noted that gynecomastia is more prevalent among adolescents and young adults, often leading to psychological distress and a desire for cosmetic correction [14]. Similarly, Vadodaria et al., emphasized the increasing demand for surgical management among younger individuals due to aesthetic concerns and social impact [15]. Clinically, bilateral gynecomastia was observed in 75% of cases in our study, which is comparable to findings reported by Pant et al., where bilateral involvement was predominant [11]. Regarding severity, most of our patients presented with moderate grades (Grade IIa: 37.5% and Grade IIb: 27.5%), which aligns with studies by Abdelmaksoud et al. and Tripathy et al., who also reported a higher prevalence of intermediate grades requiring surgical correction [16,17]. These findings support the suitability of liposuction-assisted techniques for moderate gynecomastia. Operative outcomes in the present study demonstrate the advantages of minimally invasive approaches. All procedures were conducted under general anesthesia, ensuring patient comfort and safety and the

majority (47.5%) had an operative time of 60–90 minutes. These findings are comparable to those reported by Jose and Thomas, who highlighted that liposuction-assisted techniques are associated with shorter operative time [18]. Furthermore, 60% of our patients were discharged on the same day, indicating rapid recovery and minimal hospital stay, which is also supported by Qutob et al., who described minimally invasive gynecomastia surgery as a safe day-case procedure with early discharge [19]. Postoperative outcomes in this study were favorable, with 75% of patients experiencing no complications. Among the complications, seroma (10%) and hematoma (7.5%) were the most common, which are consistent with findings by Asal et al. and Aboelatta et al., where minor complications were reported but were generally manageable [20,21]. The low complication rate in our study further supports the safety profile of liposuction-assisted surgery. Patient satisfaction is a key indicator of success in cosmetic procedures. In the present study, a high level of satisfaction was observed, with 65% of patients being highly satisfied and 27.5% satisfied with the surgical outcome. These results are comparable to those reported by Diao et al., who demonstrated superior aesthetic outcomes and patient satisfaction with minimally invasive techniques compared to traditional open excision [22]. Similarly, Zocchi and Vindigni emphasized that liposuction-based approaches provide better contouring and cosmetic results, leading to higher patient satisfaction [23]. Advancements in surgical techniques, including endoscopic approaches and combined liposuction with gland excision, have further improved outcomes in gynecomastia management, as highlighted by Wen et al. and Wang et al [24,25]. However, for appropriately selected patients, liposuction-assisted surgery alone

remains an effective and less invasive option with excellent outcomes, as also noted by Ashour et al., [26].

LIMITATIONS

This study has several limitations. It was a single-center study with a relatively small sample size of 40 patients, which may limit the generalizability of the findings. Additionally, the follow-up period was relatively short and long-term outcomes such as recurrence and sustained patient satisfaction could not be fully assessed.

CONCLUSION

Liposuction-assisted surgery is an effective and safe minimally invasive technique for the management of gynecomastia. The procedure offers favorable outcomes with low complication rates, shorter operative time, early discharge and high levels of patient satisfaction. It can be considered a preferred treatment option, particularly for patients with mild to moderate grades of gynecomastia, providing both functional and aesthetic benefits.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

REFERENCES

1. Prasetyono TO, Budhipramono AG andromeda I. Liposuction assisted gynecomastia surgery with minimal periareolar incision: a systematic review. *Aesthetic Plastic Surgery*. 2022 Feb;46(1):123-31.
2. Wang YC, Huang SH, Chen FM, Yang PF, Kao LC, Lai YW. Effective minimally invasive strategy for mixed-type gynecomastia using vacuum-assisted mastectomy and power-assisted liposuction. *Journal of Plastic, Reconstructive & Aesthetic Surgery*. 2024 Dec 1;99:175-84.
3. Ali H. Correction of gynecomastia with combination of ultrasonic liposuction

- (VASER) and gland excision through a minimal scar incision: a multi-center experience. *Aesthetic Plastic Surgery*. 2025 Aug;49(16):4638-47.
4. Lee YK, Lee JH, Kang SY. Gynecomastia: glandular-liposculpture through a single transaxillary one hole incision. *Journal of Plastic Surgery and Hand Surgery*. 2018 Mar 4;52(2):117-25.
 5. Öztürk MB, Ertekin C, Aksan T, Kalem UK, Tezcan M. Evaluation of surgical techniques in gynecomastia treatment: Analysis of 65 cases. *Duzce Medical Journal*. 2020 Aug 8;22(2):96-100.
 6. Ali SS, Ahmed I, Khurram MF, Rehman N, Abhishek R. Gynecomastia Surgery: Liposuction Alone versus Liposuction with Endoscope-Assisted Glandular Excision—A Comparative Study. *Indian Journal of Plastic Surgery*. 2025 Aug;58(04):269-75.
 7. Wahdan WS, Elbasiouny MS, Audi K, Alsayed AA, Tahseen HE. Aesthetic Outcomes of Ultrasound Guided Laser Liposuction for Gynecomastia. *Journal of Laser Science and Applications*. 2025 Dec 1;2(2):219-27.
 8. Aboelatta YA, Abdelaal MM. Comparison of laser-assisted liposuction and traditional liposuction combined with endoscopic surgical excision of grade II gynecomastia. *European Journal of Plastic Surgery*. 2017 Dec;40(6):541-8.
 9. Oh YH, Lee SH. Liposuction using wall suction and portable suction in the treatment of gynecomastia. *Indian Journal of Surgery*. 2022 Jun;84(3):517-23.
 10. Dokcu Ş, Başçeken Sİ. A new circumareolar approach combined with power assisted liposuction in the management of advanced gynecomastia. *Annali Italiani di Chirurgia*. 2023 Sep 1;94(5):543-8.
 11. Pant A, Kannan A, Nagaraju N, Sinha S, Singh J, Paruthy E, Sundaramurthi S. Clinical outcomes of liposuction assisted gynecomastia surgery with minimal periareolar incision. *Aesthetic Plastic Surgery*. 2023 Jun;47(Suppl 1):95-6.
 12. FARAG M, ALI A, KHALID SAFE MD, ELEIWI MD. Combination of liposuction and excisional surgery as a standardized minimal scarring technique for gynecomastia: Experience with 150 cases. *Egypt. J. Plast. Reconstr. Surg*. 2007;31:201.
 13. Singamsetty R, Rout SK, Giri SK, Panda R, Behera KK, Sable MN. Aesthetic outcome of gynecomastia management with conventional liposuction and cross-chest liposuction: a prospective comparative study. *Aesthetic plastic surgery*. 2022 Jun;46(3):1063-70.
 14. Acharya P, Alagarasan AR, Khan M, Blanco JP, Cakir A, Abusada F, ALQahtani MF, Siddiqui HF, CAKIR A. Shaping the Silhouette: A Comprehensive Review of Surgical Body Contouring Techniques for the Torso and Limbs. *Cureus*. 2025 Jul 25;17(7).
 15. Vadodaria S, Nimavet S, Chowdhury M. Ensuring Safety in Gynaecomastia Surgery at a ‘Stand-alone Aesthetic Surgery Day-case Centre’ in the United Kingdom: A New Component-based Classification and Practical Management Tips for Anabolic Androgenic Steroid (AAS)-induced Gynaecomastia. *International Journal of Aesthetic Plastic Surgery*. 2025 Aug;1(2):140-50.
 16. Abdelmaksoud SM, Omran A, Elagamy KM, Elhendawy MA, Mahmoud BA. Cross-chest liposuction plus gland resection through single minimal incision for management of grade I/II gynecomastia. *BMC surgery*. 2025 Jul 3;25(1):256.
 17. Tripathy S, Likhyan A, Sharma R, Sharma RK. Prospective analysis and comparison of periareolar excision (delivery) technique and pull-through technique for the treatment of gynecomastia. *Aesthetic Plastic Surgery*. 2020 Jun;44(3):653-61.
 18. Jose RM, Thomas S. Gynaecomastia correction—the role of power-assisted liposuction. *European Journal of Plastic Surgery*. 2011 Jun;34(3):187-91.
 19. Qutob O, Elahi B, Garimella V, Ihsan N, Drew PJ. Minimally invasive excision of gynecomastia—a novel and effective surgical technique. *The Annals of The Royal College of Surgeons of England*. 2010 Apr;92(3):198-200.
 20. Asal M, Ewedah M, Bassiony M, Abdelatif A. Liposuction and port site nipple sparing mastectomy: an alternative method for the operative treatment of gynecomastia at Alexandria main university hospital. *BMC surgery*. 2023 Aug 21;23(1):244.
 21. Aboelatta YA, Abdelaal MM, Abdelaal AM, Zaki BM, Kamel IH. The combined use of laser assisted liposuction and endoscopic surgical excision of grade II gynecomastia. *Ain Shams Journal of Surgery*. 2013 Jan 1;6(1):165-71.
 22. Diao X, Wang M, Chen D, Jiang H, Wang W, Zhang L, Zhang H. A comparative study on the short-term and long-term efficacy of endoscopic lipolysis, liposuction and traditional open excision in gynecomastia treatment. *BMC Endocrine Disorders*. 2025 Feb 21;25(1):48.
 23. Zocchi ML, Vindigni V. Invited Discussion on: “Aesthetic Outcome of Gynecomastia Management with Conventional Liposuction and Cross-Chest Liposuction: a Prospective Comparative Study”. *Aesthetic Plastic Surgery*. 2022 Jun;46(3):1071-4.
 24. Wen TC, Lai HW, Mok CW, Chen ST, Chen DR, Kuo SJ. Surgical management of complicated gynecomastia (associated with foreign body injection) with single-port 3-dimensional videoscope-assisted endoscopic subcutaneous mastectomy and concurrent liposuction: A case report. *Medicine*. 2021 Jun 4;100(22):e25962.
 25. Wang N, Wei S, Qiang S, Wang J, Zeng X, Zhang Z. Liposuction Through an Axillary Fold Incision Combined with a Small Areola Incision to Treat Gynecomastia. *Aesthetic Plastic Surgery*. 2024 Nov;48(21):4443-51.
 26. Ashour HS. Liposuction excision of gynecomastia through an axillary liposuction opening: A novel technique. *Egyptian Journal of Surgery*. 2015 Jul 1;34(3).