

# Clinical Outcomes of Male Gynecomastia Surgery: A cohort Study Conducted at Med City Hospital, Islamabad

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## ABSTRACT

**Objective:** To assess both the physical and psychological outcomes of gynecomastia surgery in a Pakistani cohort.

**Methodology:** The study was conducted at Med City Hospital, Islamabad in a 2-year period from January 2021 to December 2023. This study comprised of 150 male patients who underwent gynecomastia surgery. The sample size was estimated based on an anticipated proportion of 89.0% with satisfaction after gynecomastia surgery, a confidence level of 95% and an alpha of 5%. All the male patients were referred to the radiologist to rule out any malignancy. All the 150 patients didn't have any abnormal findings on sonographic or Mammography study. Demographic information, type of surgery, type of anaesthesia given, post operative complication, and satisfaction were noted. Outcomes were assessed by comparison after short-term (1-3 months) and long-term follow-up (6-12 months) periods. Statistical analysis included descriptive statistics as frequency, mean and standard deviation. For comparisons, chi-square tests, and t-tests were applied. .

**Results:** The mean age of patients was 30.5 ± 5.8 ranging from 20-40 years. Most frequent operation was liposuction 85 (56.7%), followed by gland excision and combined operation applied in 40 (26.6%) and 25 (16.7%) cases, respectively. At first follow-up the mean satisfaction score was 8.7 ± 1.1, which improved to 9.2 ± 0.8 on second, the long-term follow-up (p-value, 0.001). Pain/discomfort scores were low (2.3 ± 1.5 on a 10-point visual analogue scale), and 90.6% reported psychological gain after surgery. Complications were low, with 15 (10.0%) experiencing minor complications like hematoma and seroma.

**Conclusions:** Gynecomastia surgery is very effective in improving both physical and psychological well-being with minimal complications. Careful patient assessment and customized surgical planning are essential to optimizing results.

**Key words:** Emotional distress, Gynaecomastia, Psychological satisfaction, Self-esteem, Social anxiety.

### Authors' Contribution:

<sup>1,2</sup>Conception; Literature research; manuscript design and drafting; <sup>3,4</sup>Critical analysis and manuscript review; <sup>5,6</sup>Data analysis; Manuscript Editing.

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## Introduction

Gynecomastia, which is the benign enlargement of male breast glandular tissue, is a prevalent clinical condition that profoundly impacts psychosocial quality of life. It occurs in 30% to 40% of adult men,

depending on age, drugs, and hormonal disturbances.<sup>1,2</sup>

It is a common clinical condition that has a significant impact on psychosocial quality of life. It is usually bilateral and frequently asymmetrical. The

idiopathic changes are more frequent which is mainly due to an imbalance in the estradiol and testosterone levels. Drug-induced gynecomastia occurs with drug use that influences the hormone metabolism leading to abnormally elevated levels of estrogen, as well as a side effect of various drugs.<sup>3</sup> This led to ductal hyperplasia with elongation and branching of the ducts.<sup>4</sup> Simon et al. in 1973 graded clinical appearance of gynecomastia into three grades: Grade I: minimal visible enlargement without redundant skin; Grade II: moderate breast enlargement without redundant skin (IIA) and with some redundant skin (IIB); Grade III: gross enlargement with redundant skin, comparing to female breast ptosis.<sup>5</sup>

It most often leads to physical and emotional pain, such as low self-esteem and social anxiety. Surgical intervention — through liposuction, removal of the gland, or both — still defines the gold standard for refractory cases that cannot be managed medically. Contemporary surgery has reduced complications and maximized results but remains rare in terms of extensive studies assessing psychological and physical outcomes. Good aesthetic outcomes in patients with minor and moderate gynecomastia are achievable.<sup>6,7</sup> However, it is highly difficult to get even a good aesthetic result in patients with high-grade gynecomastia.<sup>8</sup> There is a mix of evidence regarding satisfaction after gynecomastia surgery with studies reporting only 60-65% patients to up to 88-90% or higher satisfaction rates witnessed post gynecomastia surgery.<sup>9,10</sup> This variable evidence on the topic mandated a fresh and detailed insight into these cases. The aim of this study was to assess both the physical and psychological outcomes of gynecomastia surgery in a Pakistani population.

## Methodology

It was a prospective cohort study conducted at the Med City Hospital, Islamabad in a duration of 2 years from January 2021 to December 2023. A total of 150 male patients aged 20-40 years were enrolled. A

written informed consent was taken from all patients. The IERB of Medcity Hospital, Islamabad approved the study. The study outcomes were assessed using various tools. For assessing pain, the 10-point visual analogue scale (1=low pain, 10=worst pain) was applied in the study. Similarly, satisfaction after gynecomastia was measured by using body Image Scale (BIS) a 10-item self-administered questionnaire based on 4-point-likert scale. Its purpose is to assess a person's feeling about their body, appearance, and impact on daily life after surgical and oncological procedures. For assessing psychological and physical wellbeing, the BREAST-Q module was utilized. It is a widely used validated tool for assessment after male chest surgeries including gynecomastia. BREAST-Q is a self-administered, 4 or 5 point-Likert-scale which converts to total score of 0-100 with highest score representing highest satisfaction achieved after surgery.

The sample size of 150 cases was calculated using WHO sample calculator and statistical assumptions of 95% confidence level, 5% alpha and an anticipated proportion of 89% [10] patients satisfied post gynecomastia surgery. Consecutive sampling technique was applied and data was retrieved from the hospital files. This included demographics like age, type of surgery done, anaesthesia used, duration of symptoms, and post-operative complications. Follow-up was conducted at 1-3 months (short-term) and 6-12 months (long-term). In this study male patients between 20-40 years of age who were diagnosed as having gynecomastia and underwent either liposuction, gland removal, or combination procedure were included. Patients with incomplete medical records and those aged less than 20 or older than 40 years were excluded. A structured proforma was used to collect study data. SPSS version 23.0 was used for the statistical analysis. Descriptive statistics was employed to measure demographic and clinical variables in terms of frequency, percentage, mean, standard deviation, and ranges. Inferential analyses, such as chi-square

tests, and independent t-tests analysis were applied to compare the outcomes between early and long-term follow-up periods. A p-value of less than 0.05 was considered significant.

**Ethical approval** was taken from the IREB of Med City Hospital on November 23, 2020.

## Results

The average age of patients was  $30.5 \pm 5.8$  years, with an average duration of gynecomastia of  $3.2 \pm 1.1$  years. The most frequently performed operation was liposuction 85 (56.7%), followed by gland excision 40 (26.6%) and combined surgery 25 (16.7%). General anaesthesia was applied in 80% of the surgeries. (Table I)

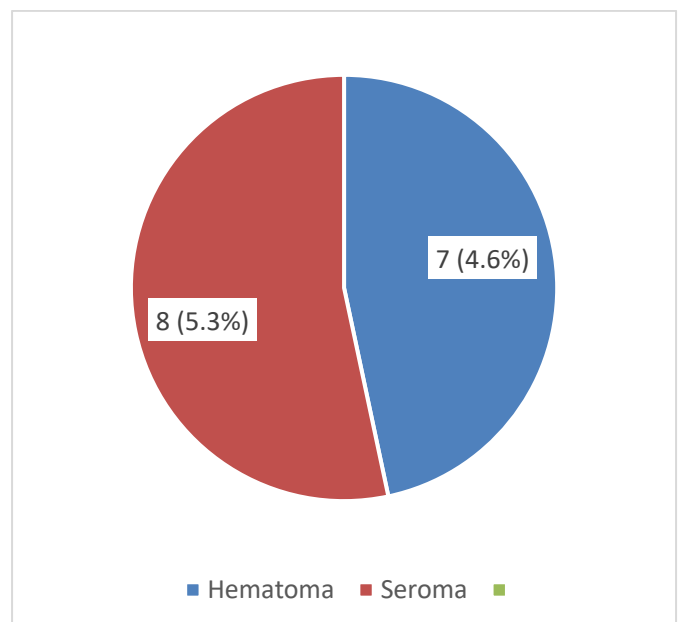
Post-Operatively few complications were observed in 15 (10.0%) of study patients, these were minor side effects like hematoma (n=7) and seroma (n=8). (Figure I) No recurrences or major complications were witnessed in the long-term. Short-term outcomes at 1-3 months post-surgery and long-term outcomes at 6-12 months follow-ups were shown in table no II and table no III, respectively.

	No of cases	Percentage
<b>Age (years)</b>		
Mean $\pm$ SD	$30.5 \pm 5.8$	
Range (min-max)	20 - 40	
<b>Duration of gynecomastia (years)</b>		
Mean $\pm$ SD	$3.2 \pm 1.1$	
Range (min-max)	2.0 – 6.2	
<b>Type of surgical procedure</b>		
Liposuction	85	56.7%
Gland excision	40	26.6%
Combined surgery (liposuction + excision)	25	16.7%

When the outcomes in terms of level of satisfaction from surgery and psychological improvements after surgery was compared between early and long-term

follow-ups, a significant trend of improvement was witnessed. The mean level of satisfaction was  $8.7 \pm 1.1$  immediately after surgery while it increased to  $9.3 \pm 0.9$  as noted on 6-12 months follow-up, and this difference was statistically significant (p-value, 0.001). Similarly, there were 136 (90.6%) cases with improved psychological effect on short-term follow-up after surgery while there was a significant increase to 145 (96.7%) cases with improved psychological effects when noted on the long-term follow-up (6-12 months) and this difference was also statistically significant (p-value, 0.03). (Table IV).

Outcome	Mean $\pm$ SD / Frequency (%)	Range (min-max)
VAS Pain score/Discomfort Level (0–10)		
Mean $\pm$ SD	$2.3 \pm 1.5$	0–6
<b>Satisfaction with Physical Results</b>	$8.7 \pm 1.1$	7–10
Mean $\pm$ SD		
<b>Psychological Effect</b>		
- Improved	136 (90.6%)	
- No Change	14 (9.4%)	



**Figure I: Distribution of complications postsurgical procedures (n=150)**

Table III: Long-Term Follow-Up Results (6–12 months) (n=150)		
Outcomes	Mean ± SD / Frequency (%)	Range (min-max)
<b>Stability of Results</b>		
- Stable	148 (98.7%)	
- Unstable	2 (1.3%)	
<b>Satisfaction with Physical Results</b>		
Mean ± SD	9.2 ± 0.8	8–10
<b>Psychological Effect</b>		
- Improved	145 (96.7%)	
- No Change	5 (3.3%)	
<b>Recurrence of Gynecomastia</b>		
- No	150 (100%)	
- Yes	0 (0%)	



Figure II (A, B, C, D): Patient pictures pre- and post-gynecomastia surgery Figure II (A, B, C, D): Patient pictures pre- and post-gynecomastia surgery

Table IV: Comparison of gynecomastia surgery outcome between early and long-term periods (n=150)			
	Early outcome (1-3 month)	Longterm outcome (6-12 month)	p-value
	Mean ± SD / Frequency (%)	Mean ± SD / Frequency (%)	
<b>Satisfaction with Physical Results</b>			
Mean ± SD	8.5 ± 0.9	9.2 ± 0.8	0.001
<b>Complications</b> (hematoma, seroma)	15 (10.0%)	0 (0.0%)	<0.001
<b>Long-Term Psychological Effect</b>			
- Improved	136 (90.6%)	145 (96.7%)	0.03
- No Change	14 (9.4%)	5 (3.3%)	

## Discussion

This study highlights the short and long-term outcomes of gynecomastia surgery in terms of physical and psychological effects. Gynecomastia is a non-cancerous enlargement of male breasts. Though the word "breasts" is often associated with women, but men also have breast tissues, including ducts and glands—which also make them susceptible to breast cancers. Common signs include hard, painless lump behind the nipple or areola, they many also present with swelling, soreness, redness or discharge from the nipples. In this regard lack of awareness lead to delayed diagnosis and poor outcomes in men. In most cases men over 60 years get affected, however, younger men are prone too. The primary diagnostic options include ultrasound, x-ray mammogram and confirmation is done via biopsy. Breast cancer either in males or females brings sufferings and has high fatality rate if picked late. Thus, picking and managing the early conditions like gynecomastia which is of benign nature is crucial and necessary.<sup>1,2</sup>

Gynecomastia surgery has evolved into an effective and safe surgery for the correction of physical and psychological abnormalities of the condition. Our findings are congruent with newer studies reporting the positive impact of gynecomastia surgery on physical satisfaction and psychological condition.<sup>11,12</sup> In this study, satisfactory levels of short-term and long-term results were determined. The levels of satisfaction reported in our study are similar to findings reported by Fagerlund et al..<sup>13</sup> Rayamajhi J and Abdali research also demonstrated the same findings.<sup>14,15</sup> Our long-term psychological outcome data is as expected with improvement as reported by Hussain et al., at Nishtar Medical University, where post-operative self-esteem was considerably improved.<sup>2</sup> Notably, fewer complication rates were observed in patients who underwent liposuction-alone surgeries, which was also reflected in the CMH Rawalpindi study.<sup>1</sup> The findings reinforce the trend of minimal invasive procedures in suitable patients.

Further, more advanced technologies like VASER-assisted liposuction and the pull-through technique also enhanced outcomes, as reflected from Indian and European studies.<sup>16,17,18</sup> Aesthetic results, contouring and scarring, remain central to patient satisfaction. Methods of reducing scarring, described by Frigerio et al., must be adapted in high-demand settings like Pakistan.<sup>19</sup> Procedures like J-Plasma and NAC lifting have also been shown to improve upper chest definition and symmetry.<sup>20</sup> These advancements are crucial in responding to rising expectations in aesthetic surgery. Our detailed analysis also validated prior findings that decreased post-op pain and overall surgery (excision and liposuction) are correlated with greater satisfaction — consistent with observations by Akhtar et al. and Tripathy et al.<sup>16</sup> All in all, our study lends support to growing regional and international agreement that well-planned, individualized gynecomastia surgery carries outstanding results with little risk.<sup>20</sup> In a study from Shifa hospital Islamabad, liposuction alone had less scarring and better results than combination surgery.<sup>4</sup> A Pakistani study at Nishtar Medical University reported the significant improvement in the quality-of-life post-surgery, especially in young adults. Results were also reported similarly across the world, with techniques like power-assisted liposuction and microdebrider excision showing uniform aesthetic and psychological gains.<sup>8,11,21</sup> In spite of the strengths of the study such as a solid sample size and a standardized management of surgery and follow-up, some limitations have to be borne in mind. The single-centre design restricts the generalizability of our results. Also, the rather short follow-up period for examining long-term complications and recurrence requires longer longitudinal studies.

## Conclusion

Gynecomastia surgery is very effective in improving both physical and psychological well-being with minimal complications. Thus, this study identifies the effectiveness of gynecomastia surgery. The

results support the necessity of individualized surgical planning to achieve optimal patient satisfaction and prevent complications.

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