Original Article

Gynecomastia Grades 1 and 2: Evaluating Surgical Outcomes by combining Glandular Excision with Liposuction

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ABSTRACT

Objective: This study evaluates the results of integrating liposuction with glandular excision for grade 1 and 2 gynecomastia, focusing on both complications and patient satisfaction.

Study Design: Observational study

Place and Duration of Study: This study was conducted at the Plastic Surgery clinic, Institution Based Private Practice, lady Reading Hospital Peshawar from April 2023 to December 2023.

Methods: The study included 40 participants aged 18 and above, specifically targeting individuals with grade 1 and 2 gynecomastia, as well as idiopathic cases. Data was recorded in a specified Performa and was analyzed using spss version 20. All enrolled patients underwent same treatment involving both liposuction and glandular excision.

Results: age range observed was between 19-27 years, with grade 2a as the most prevalent grade observed (n=28), followed by grade 2b (n=7) and grade 1 (n=5). A total of 85% patients considered the procedure satisfactory. The observed complication rate was 10%, with hematoma, nipple retraction, and asymmetry being the most frequently encountered issues.

Conclusion: A uniform surgical approach was employed for all the patients, resulting in satisfaction of the majority, as their concerns were effectively addressed.

Key Words: Liposuction, Glandular Excision, Gynecomastia

Citation of article: Afridi RAK, Tauqeer Z, Obaid S, Hussain S, Afzal A, Kakar B. Gynecomastia Grades 1 and 2: Evaluating Surgical Outcomes by combining Glandular Excision with Liposuction. Med Forum 2024;35(3):27-30. doi:10.60110/medforum.350306.

INTRODUCTION

Gynecomastia, a benign condition characterized by enlargement of male breast tissue, involving histological changes in glandular size, stromal, and fatty elements. It can occur bilaterally or unilaterally, affecting individuals across different age groups with varying severity.[1] Patients seek medical attention due to psychosocial and cosmetic concerns.[2]

While most of the cases are idiopathic, thorough systemic and hormonal assessments are essential for gynecomastia patients to exclude potential contributing factors like renal insufficiency, hypogonadism, testicular tumors, liver cirrhosis, and hyperthyroidism.[3]

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Received: January, 2024
Accepted: February, 2024
Printed: March, 2024

A common factor among all these causes is either an imbalance in hormones mainly estrogens and androgens or increased responsiveness of breast glands to circulating estrogen, leading to glandular hyperplasia, followed by fibroblast proliferation, and neovascularization.[4,5,6]

The Simon classification system, widely employed for grading gynecomastia, categorizes it into four grades based on breast enlargement and skin excess. Grade 1 involves minor enlargement without skin excess, Grade IIA features moderate enlargement without excess skin. Grade IIB shows moderate enlargement with slight skin redundancy, and Grade III includes significant breast enlargement with noticeable skin excess resembling pendulous female breast.[7,8] Management of gynecomastia involves addressing the underlying cause. However, in idiopathic cases if the condition persists for over a year, surgical intervention becomes the primary option.[9,10]

Depending on the grade, various surgical modalities have been described for correcting gynecomastia. Liposuction without glandular excision has shown several disadvantages.[10] This study aims to assess the efficacy of combining glandular excision with liposuction in patients classified as grade 1 and 2, considering patient satisfaction scores and potential complications.

METHODS

This descriptive study was conducted at Plastic Surgery clinic, Institution based private practice, lady Reading Hospital Peshawar from April 2023- DEC 2023 following approval from institutional ethical board. After explaining the study protocol, informed consent was signed by all participating patients.

Inclusion criteria: Patients having grade 1 and 2 gynecomastia persisting for more than 1 year, only idiopathic cases and individuals aged 18 years and above.

Exclusion criteria: Pseudo gynecomastia patients (defined as breast enlargement only due to fatty tissue) were excluded.

Data Collection Procedure: After hospital admission, detailed clinical history, physical examination and investigations for anesthesia and surgical fitness was recorded. Patients were monitored on the fourteenth and twenty-first days post-operatively, and a follow-up visit was conducted at three-month for any complications. level of discomfort and satisfactory scores were recorded and analyzed using self-assessment sheets. Variables like age, grade of gynecomastia, concern of patient, lipoaspirate suctioned out, complications and patient satisfaction score were analyzed. Patient satisfaction score was rated as 1-5, with 1 being dissatisfied and 5 being the most satisfied.

A single observer collected the data, and a different author conducted the analysis to minimize any potential bias.

Surgical Technique: All the surgeries were performed by single expert surgeon. Pre-operative marking was performed in the upright position followed by photographic documentation. Procedure was performed in supine position; tumescent fluid infiltration was carried out through a 1 mm incision at the lateral to inframammary fold. This tumescent fluid, composed of 10ml of 20mg bupivacaine, 10ml of 2% lidocaine, and 1ml of adrenaline in 1L of Ringer lactate, served to emulsify fats, disrupt fibro-fatty elements, and provide a hemostatic effect. The addition of bupivacaine helps in alleviating the pain for almost 12 hours post operatively.

After allowing 10 minutes for the tumescent fluid to take effect, liposuction commenced using a 3mm cannula through the same lateral incision, followed by a 2mm cannula to address fine irregularities. Gland excision was then performed through a per areolar incision, sparing a 1cm cuff of retro areolar tissue to prevent nipple retraction and preserve sensation. Finally, liposuction was conducted for the final contour. No drains were utilized, and postoperative compression was initiated immediately after the procedure. Patients were scheduled for follow-up visits on 14^{th} day, 30^{th} day, and 6 months postoperatively.

RESULTS

A total of 40 patients were enrolled in this study, with a mean age of 24.2 years, (range:19-27 years) and an average weight of 74.5 kg.

The study recorded a mean lipoaspirate volume of 231 ml.

Pre-operative grading was done using Simons classification. The most prevalent gynecomastia grade observed and treated was 2a, accounting for 70% (28 patients), followed by 2b at 17.5% (7 patients), and only 12.5% (5 patients) presented with grade 1 gynecomastia.

21 Patients sought treatment primarily for cosmetic reasons, while others underwent surgery due to concerns about carcinoma, pain, and psychosocial issues.

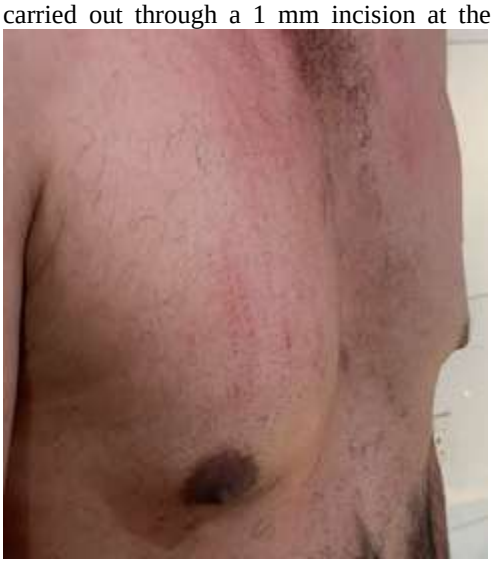
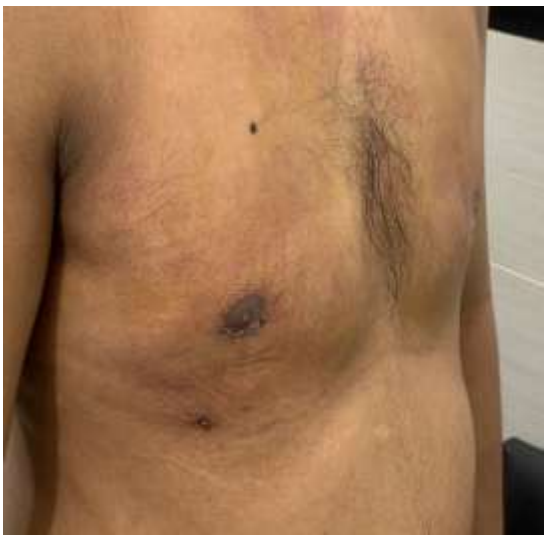
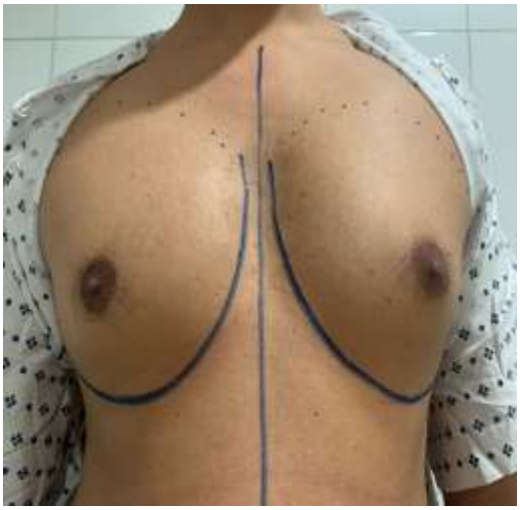


Figure No.1: Oblique view of patient Showing Grade 1



2-weeks Post-op



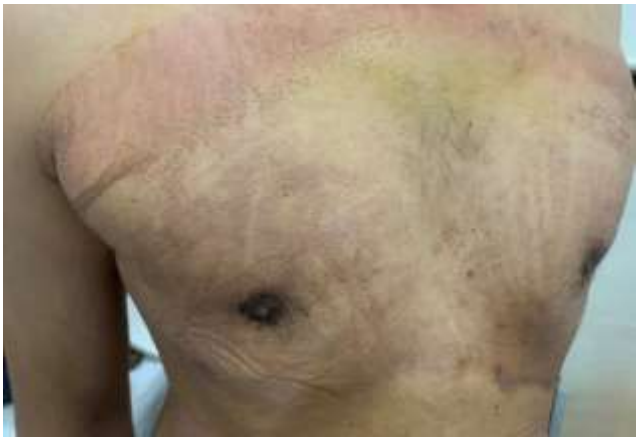


Figure No.2: Frontal view of patient showing grade 2a **2 weeks post op**

Table No.1: Cross Tabulations of Complications with Grade

Complications		Grading of the Disease according to Simon Criteria			Total
		1	2a	2b	
	Nil	4	26	6	36
	Asymmetry	0	1	1	2
	Nipple Retraction	0	1	0	1
	Hematoma Formation	1	0	0	1
Total		5	28	7	40

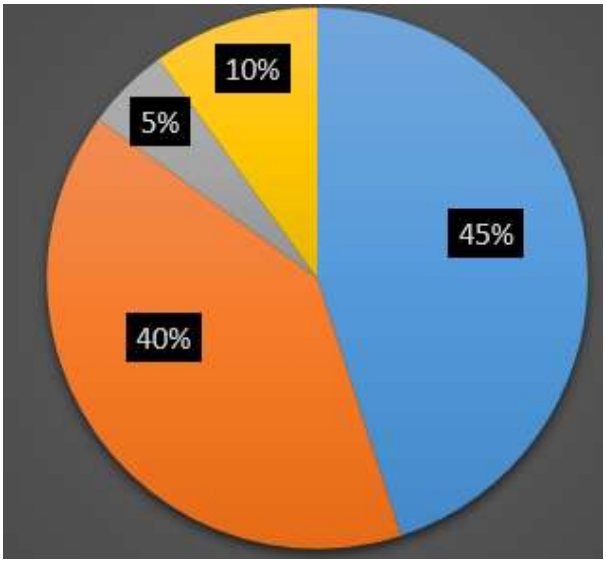


Figure No.3; Satisfaction Scores

Regarding the technique of combining glandular excision with liposuction, 45% of patients expressed satisfaction, while an additional 40% fell into the highly satisfied category. Consequently, a total of 85% of patients deemed the procedure satisfactory. In contrast, 10% remained neutral in their opinion, and 5% expressed dissatisfaction. (fig:3)

Complications were identified in four patients, all of which underwent surgery for bilateral disease. which was subsequently evacuated. Two patients exhibited asymmetry on both sides, while one patient experienced nipple retraction. Similarly, another patient presented with hematoma, which needed evacuated. (table: 1)

DISCUSSION

Plastic surgeons commonly encounter patients with gynecomastia due to its high prevalence. When selecting patients and devising surgical plans, it is important to consider redundant skin, tissue parenchyma, and adipose tissue.[11] Surgery remains the primary and most effective modality for treating grade I and II gynecomastia in adults, especially when medical treatments prove ineffective within a year. Liposuction combined with glandular excision offers multiple advantages compared to either surgery or liposuction alone.[12]

In numerous studies, liposapirate volumes have been documented to be up to 300ml; [13,14] however, our observations revealed an average volume of 230ml.

In our research, 85% of patients expressed satisfaction, whereas only 5% reported dissatisfaction. This differs from another comparative study conducted in Pakistan, where patients undergoing simple liposuction were more satisfied than those who had both liposuction and an incision.[16] Nevertheless, the majority of studies revealed that patients were completely satisfied with the outcomes of the combined approach.[12-15]

The complication rate in our study was only 10% in contrast to other studies where a slightly higher rate of complications (12%) was recorded. Hematoma, nipple retraction and asymmetry were the main complications in our patients and was common in bilateral cases.

whereas, A German study identified bleeding as the sole postoperative complication.[12] In other studies hematoma and seroma were the most prevalent issues. [15,16]

We observed nipple retraction in only 1 patient, a result consistent with the 3 patients reported in a study conducted in Egypt.[17]

CONCLUSION

Main goal of any surgical procedure is to address the patient's concern and achieve satisfactory results with possible minimal complications. Since, various surgical interventions are defined in literature for managing different grades of gynecomastia, our research strongly advocates for the combined approach involving liposuction and glandular excision. This technique emerges as a reliable and satisfactory solution, particularly for individuals with gynecomastia Grades 1 and 2.

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Author's Contribution:

Concept & Design of Study:	Riaz Ahmed Khan Afridi
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Revisiting Critically:	Riaz Ahmed Khan Afridi, Sadaf Obaid
Final Approval of version:	Riaz Ahmed Khan Afridi, Sadaf Obaid

Conflict of Interest: The study has no conflict of interest to declare by any author.

Source of Funding: None
Ethical Approval: No. 706/LRH/MTI dated 21.03.2023

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