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Research Paper

Comprehensive Surgical Management of Gynecomastia: A Case Series

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Summary :
Male breast glandular enlargement, commonly known as gynecomastia, is a frequent condition that can lead to both physical discomfort and psychological distress. In cases where the condition persists or significantly affects aesthetics, surgery remains the treatment of choice.
This study reviews the clinical experience of our department over a three-year period, analyzing the outcomes of surgical intervention in 7 male patients treated between May 2020 and March 2023. The mean patient age was 25 years. Inclusion required a confirmed diagnosis of gynecomastia (clinical and imaging) and a minimum postoperative follow-up of six months.
Bilateral involvement with glandular predominance was the most prevalent presentation. Most patients underwent a combination of subcutaneous gland excision via an inferior periareolar incision and adjunct liposuction. Aesthetic and psychological improvements were generally reported. Minor complications were noted: one hematoma, one seroma, and one superficial infection. No major complications or recurrences occurred during follow-up.
These findings align with current literature, underscoring that surgical treatment—when adapted to gynecomastia grade and patient anatomy—yields consistent, satisfactory outcomes. Advances in technique and standardized outcome evaluation may further enhance results.

Key worlds: *Male breast hypertrophy; subcutaneous resection; periareolar incision; liposuction; surgical outcomes; body image.*

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I. Introduction

Gynecomastia is a benign proliferation of glandular breast tissue in males, primarily resulting from an imbalance between the stimulatory effects of estrogens and the inhibitory role of androgens on mammary epithelial cells [1,2]. It is recognized as the most frequent male breast condition, with a reported prevalence ranging from 30% to 65%, depending on age, diagnostic criteria, and population studied [3,4].

From a pathophysiological standpoint, gynecomastia can be classified into three main categories:

Physiological, occurring during distinct hormonal periods such as the neonatal stage, puberty, or in elderly men;

Pathological, secondary to systemic diseases (e.g., liver cirrhosis, testicular or adrenal tumors), endocrine dysfunction, or adverse drug reactions (e.g., antiandrogens, spironolactone, cannabis use);

Idiopathic, where no underlying cause can be clearly identified [5–7].

Clinically, gynecomastia presents variably, ranging from localized retroareolar fullness to diffuse, firm breast enlargement. In some cases, pain, asymmetry, or nipple sensitivity may be present. However, beyond physical discomfort, the psychological burden is often significant—particularly among adolescents—leading to body image disturbance, embarrassment, and social withdrawal [8,9].

Initial management may involve observation or pharmacological therapy, particularly during the early proliferative phase (<6 months). Agents such as tamoxifen and raloxifene, acting as selective estrogen receptor modulators (SERMs), have shown modest efficacy in selected cases [10]. Nonetheless, surgery remains the definitive treatment for long-standing, symptomatic, or cosmetically significant gynecomastia.

Multiple operative techniques exist and are selected based on clinical grade and tissue composition. These range from liposuction for adipose-predominant forms to subcutaneous mastectomy for dense glandular tissue. Additional procedures such as skin resection or areolar repositioning may be necessary in advanced cases. The Simon classification remains a widely used framework for guiding therapeutic decisions [11–13].

In this context, we report our surgical experience with gynecomastia correction in a tertiary referral center in Morocco. This retrospective series analyzes the clinical profiles, operative techniques, complication rates, and patient satisfaction in a cohort treated between 2021 and 2024 at the Department of Plastic and Reconstructive Surgery of Ibn Sina University Hospital, Rabat. Our aim is to evaluate outcomes and propose practical recommendations to optimize the surgical management of gynecomastia in similar resource settings.

II. Materials and Methods

This retrospective descriptive study was conducted within the Department of Plastic and Reconstructive Surgery at Ibn Sina University Hospital in Rabat. The analysis covers a three-year period, from May 2020 to March 2023, and focuses on the surgical management of male patients diagnosed with gynecomastia.

Inclusion Criteria

Eligible patients met the following conditions:

- Clinical and radiological confirmation of gynecomastia;
- Underwent surgical correction in the department during the study period;
- Complete medical documentation, including a minimum postoperative follow-up of 6 months.

Exclusion Criteria

The study excluded:

- Patients presenting with isolated lipomastia (pseudogynecomastia);
- Cases linked to malignant breast pathology;
- Incomplete records or follow-up less than six months.

Preoperative Evaluation

Each patient underwent a standardized diagnostic protocol aimed at identifying potential secondary causes. This included:

- A thorough clinical interview investigating endocrine disorders, drug history (e.g., antiandrogens, anabolic steroids), and lifestyle factors (e.g., alcohol, cannabis use) [14,15];
- A comprehensive physical examination, with classification of gynecomastia severity based on a modified Simon grading system [11];
- Hormonal profiling with serum levels of estradiol, testosterone, LH, FSH, prolactin, and β-hCG [16];
- Imaging via breast or testicular ultrasound depending on clinical suspicion, to exclude neoplastic or hormonal sources [6,17].

Surgical Approach

The surgical technique was tailored to the clinical grade of gynecomastia:

- **Grade I and IIa:** Direct subareolar excision through a lower crescent-shaped periareolar incision;
- **Grade IIb and III:** Glandular excision combined with liposuction and, when required, skin resection using round-block or omega-type mastopexy techniques [12,18];
- All patients received closed suction drains, systematically removed on postoperative day two.

Postoperative Follow-Up

Patients were reviewed systematically at 1 week, 1 month, 3 months, and 6 months post-surgery. Outcome evaluation focused on:

- **Aesthetic parameters:** breast symmetry, scar quality, and contour regularity;
- **Patient satisfaction:** assessed via a simplified visual analogue scale (VAS);
- **Complications:** including hematoma, infection, sensory changes, hypertrophic scarring, or recurrence [19,20].

All procedures were performed by senior surgeons experienced in aesthetic and reconstructive breast surgery, following current safety and ethical standards.

III. Results :

- This study included eight male patients with a mean age of 25 years, ranging from 18 to 38 years. A majority (75%) resided in urban areas. The leading reason for seeking consultation was a combination of aesthetic

dissatisfaction and emotional discomfort due to visible breast enlargement—a concern widely reported in the literature, especially among younger males [21].

Bilateral gynecomastia was diagnosed in 85% of patients. In 87.5% of the cases, the glandular component was dominant. The most frequently encountered clinical presentation corresponded to Simon grade IIb, characterized by moderate hypertrophy with excess skin and firm glandular tissue.

All patients underwent a comprehensive hormonal evaluation, which revealed normal endocrine profiles. No secondary causes such as neoplasia or systemic disorders were identified, and imaging studies confirmed the benign nature of the breast tissue in every case.

The anatomical forms of gynecomastia observed were:

- Dendritic distribution in 50% of cases;
- Diffuse glandular hypertrophy in 37.5%;
- Localized nodular presentation in 12.5%.

Surgical management strategies varied according to the severity and composition of the breast tissue. Approaches included:

- Isolated subcutaneous glandular excision;
- Liposuction alone in selected adipose-predominant forms;
- Combined excision and liposuction, which was the most frequently applied technique;
- Reduction mammoplasty in patients with considerable skin excess.

Postoperative recovery was generally uncomplicated. Three patients experienced minor complications, each representing 12.5% of the cohort: one developed a hematoma, another a seroma, and a third a superficial wound infection. All complications resolved with appropriate conservative management.

No recurrence of gynecomastia was observed during the minimum six-month follow-up period. These results are in line with published data suggesting low recurrence rates when glandular excision is complete and well-indicated [22,23].

Patients reported a high level of satisfaction with the surgical outcomes, particularly regarding chest contour and body image. Although no standardized satisfaction scale was employed, postoperative interviews consistently indicated improvement in quality of life and self-confidence, findings that echo those of prior studies on male breast reduction [24].

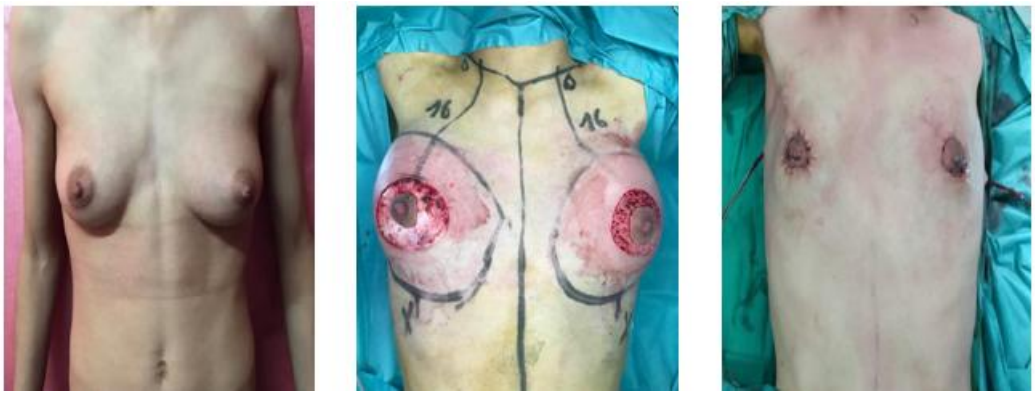

Figure 1 : pre-operative, per-operative and immediate post-operative pictures of an 18-year-old patient presenting with grade 2B gynecomastia of purely glandular consistency, treated with bilateral subcutaneous mastectomy using a round block technique to correct the skin excess.

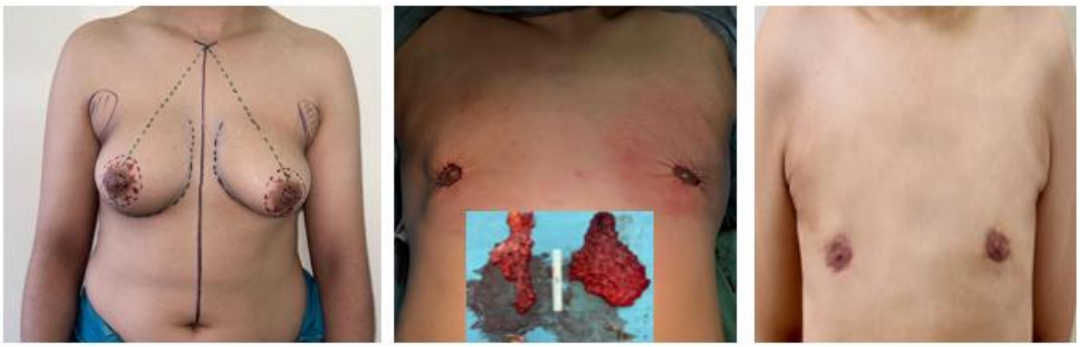

Figure 2 : pre-operative, per-operative and 1 yearpost-operative pictures of a 38-year-old patient presenting with grade 2B gynecomastia of mixed consistency. Correction was performed through a combination of liposuction and subcutaneous mastectomy using a round block technique, which yielded very good results.

IV. Discussion :

Gynecomastia is a benign enlargement of male breast tissue, caused by an imbalance between the estrogenic stimulation and androgenic inhibition of mammary gland development [25]. It should be distinguished from pseudogynecomastia, which involves adipose excess without glandular proliferation and is typically associated with obesity [26].

The condition is highly prevalent, particularly during adolescence and in aging men, with reported rates reaching up to 65% depending on the population studied [27]. In the Moroccan context, although national epidemiological data remain limited, hospital-based series suggest comparable frequencies.

Multiple etiologies contribute to gynecomastia, including idiopathic forms, hormonal imbalances, chronic liver disease, testicular or adrenal tumors, and medication-induced causes (such as antiandrogens, spironolactone, or anabolic steroids) [28]. Risk factors such as cannabis use, alcohol consumption, or metabolic disorders also warrant consideration in the diagnostic process.

Surgical treatment remains the gold standard for persistent or psychologically burdensome forms. Our experience confirms the relevance of combining subcutaneous gland excision via a lower periareolar incision with liposuction, particularly in cases involving both glandular and fatty components. This technique offers satisfactory exposure, minimal visible scarring, and effective contour remodeling, which is consistent with current surgical recommendations [12,29].

The complication rate in our series was low and included only minor events (hematoma, seroma, and wound infection), all of which resolved without sequelae. No recurrence was noted during the follow-up, supporting the effectiveness of complete and well-indicated excision, as shown in previous series [22,30].

While patient satisfaction was not measured using standardized tools, subjective feedback indicated improved body image and confidence, which aligns with the literature describing the positive psychosocial impact of surgical correction [24].

Nonetheless, our study has limitations. The small sample size limits generalization, and the absence of validated quality-of-life measures restricts the objectivity of patient-reported outcomes. Future work should integrate long-term follow-up protocols and quantitative evaluation scales to enhance scientific robustness.

Minimally invasive options, such as ultrasound-assisted or radiofrequency-assisted liposuction, may represent promising developments to reduce trauma and optimize aesthetic results. These techniques, along with newer approaches involving small lateral or endoscopic incisions, deserve further evaluation for selected cases.

V. Conclusion

Gynecomastia remains a frequent and often distressing condition in men, with notable repercussions on self-image and psychological well-being, especially among adolescents and young adults. This retrospective study reinforces the therapeutic value of surgery in managing persistent, advanced, or aesthetically disruptive cases.
The combined use of subcutaneous gland excision through a lower periareolar approach and selective liposuction has demonstrated encouraging outcomes in terms of aesthetics, patient satisfaction, and safety. Despite these

favorable results, limitations such as the small sample size and the relatively short follow-up period must be acknowledged.

Looking ahead, improving surgical management will require the incorporation of less invasive techniques, the implementation of standardized assessment tools for functional and psychological outcomes, and the development of larger, multicentric studies. Greater uniformity in indications, operative strategies, and outcome evaluation would contribute to more consistent and reproducible results across different practice settings.

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