

MINIMALLY INVASIVE SURGICAL MANAGEMENT OF SEVERE GYNAECOMASTIA – PERSONAL EXPERIENCE

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Abstract

Background: Male breast enlargement due to ductal, stromal and fatty proliferation is called gynecomastia. Gynecomastia is common in 65% of men but surgery is not indicated in all the cases. In paediatric gynecomastia there is a multifactorial imbalance in the ratio of oestrogen to androgens tissue levels. In more than 95% of the cases gynecomastia development is idiopathic. **Materials and Methods:** A prospective study was conducted on minimally invasive surgical management of severe gynecomastia patients, admitted in the Department of Plastic Surgery, from October 2023 to September 2024. About 16 patients with severe gynecomastia were studied. All patients underwent thorough investigations to exclude any underlying cause for their gynecomastia. Minimally invasive surgical management of severe gynecomastia was done by Webster method. The procedure was carried out by a single consultant surgeon and the tissue was sent for histopathological examination. **Result:** All the patients had bilateral gynecomastia. There was no family history of gynecomastia in all the patients. Nine patients were in the 10 to 20 age group and seven patients were in the 21 to 30 age group. Postoperatively three patients had seroma collection, one patient had wound dehiscence on one side and two patients had mild nipple retraction. All the patients were satisfied with the outcome of the surgery. **Conclusion:** Many surgical techniques are described for correcting severe gynecomastia. Webster operation with a small incision yields satisfactory aesthetic results with minimal complications.

INTRODUCTION

Gynecomastia is the benign enlargement of breast's the glandular tissue in male population.^[1] Gynecomastia can involve fatty and/or glandular tissue. This condition may be unilateral or bilateral, symmetric or asymmetric. Gynecomastia is thought to result from a number of mechanisms including an imbalance in the testosterone to oestrogen ratio as well as an increase in human chorionic gonadotropin receptors and luteinizing hormone receptors in male breast tissue.^[2] About 60% of all boys develop transient pubertal breast enlargement.^[3] This condition differs from pseudo gynecomastia (fatty breasts), which usually occurs in obese men, due to increased local fat deposition without glandular enlargement.^[4] Many of these patients show poor self-image, depression, anxiety, and social phobia.^[5,6] Patient-reported outcome after definitive surgical correction has been shown to have a clear positive impact, especially on physical and psychological wellbeing.^[7] Overall patient satisfaction after

surgical correction has been reported with an average of 84.5%.^[8] Multiple surgical approaches for the correction of gynecomastia have been described, including minimally invasive techniques such as liposuction, vacuum-assisted mastectomy, and endoscopic mastectomy (pull-through techniques). Surgical glandular resection is commonly done utilizing a hemi- areolar incision.^[9] In this study, personal experience of minimally invasive surgical management of severe gynecomastia through a single peri areolar incision is described.

MATERIALS AND METHODS

A prospective study was conducted on minimally invasive surgical management of severe gynecomastia patients, admitted in the Department of Plastic Surgery, from October 2023 to September 2024. About sixteen patients with severe gynecomastia (Grade III) were studied. As per Simon's classification we identified four grades of gynecomastia: - Grade I: small enlargement without

skin excess, Grade II a: moderate enlargement without skin excess, Grade IIb: moderate enlargement with minor skin excess and Grade III: Marked enlargement with excess skin.

All patients underwent thorough investigations to exclude any underlying cause for their gynaecomastia. Ultrasound examination of the breast, abdomen and scrotum were done. Liver function tests, serum levels of testosterone, LH, FSH, 17β -oestradiol, β hCG and thyroid function tests had been done for all patients. Karyotyping was done in selective patients to exclude genetic chromosomal syndromes.

After giving a pre operative counselling all the sixteen patients had undergone minimally invasive surgical management by Webster method. Preoperative marking of the extent of gynaecomastia was done in the sitting position. A small peri areolar incision was made. and all breast and fatty tissues were removed. Meticulous haemostasis was achieved throughout with electrocautery. A disc of tissue underneath the areola had been preserved to prevent retraction of the nipple and areola postoperatively. Care was taken to excise the entire gland as one entity, resulting in a single specimen. Drain was kept in all the cases. Compression dressing was applied over the surgical site for 3 to 5 days. The procedure was carried out by a single consultant surgeon and the tissue was sent for histopathological examination. Preoperative, per operative and post operative photos were taken and documented. [Figure 1,2]

Patients were asked to restrict their physical work for at least 1 to 2 weeks. Modified activity was resumed after 1-week follow-up with light, non-chest-related exercises for 2 to 3 weeks. Any exercise resulting in movement of the pectoralis muscles, including lifting, extension, or abduction of the shoulders, was discouraged. Patients had been advised to wear chest binders for three weeks to avoid seroma collection. A regular chest exercise regimen was resumed after 4 to 6 weeks.

RESULTS



Figure 1: Severe grade III gynaecomastia in a sixteen-year-old

All the patients had bilateral gynaecomastia. There was no family history of gynaecomastia in all the patients. Nine patients were in the 10 to 20 age group and seven patients were in the 21 to 30 age group. Postoperatively three patients had seroma collection, one patient had wound dehiscence on one side and two patients had mild nipple retraction. One patient had mild discoloration of the areola on one side and it was settled in two weeks.

The histopathology of excised specimens of all the patients revealed glandular and fatty tissue suggestive of gynaecomastia. Postoperative follow up for 6 months revealed very minimal scar. The psychological satisfaction following surgery was very high in all the patients. [Figure 3,4]



Figure 2: Minimal postoperative necrosis of left areola



Figure 3: Severe grade III gynaecomastia in a twelve-year-old boy



Figure 4: Grade III gynaecomastia in a twenty-year-old

DISCUSSION

Gynecomastia is a benign clinical finding characterized by enlargement of the male breast, due to proliferation of glandular tissue.^[10] This condition differs from pseudo gynecomastia (fatty breasts) due to increased local fat deposition without glandular enlargement. Gynecomastia can be seen as part of the

normal physiological development in the new-born and adolescent boys. In paediatric population more the 95% of cases of gynecomastia are idiopathic, unlike adult population in which secondary gynecomastia is more frequent.^[11] In our experience all patients were affected by idiopathic gynecomastia. The majority of boys affected by gynecomastia are asymptomatic, while those referred to the specialist present persistently tenderness of the breasts, palpable lump or unsatisfactory body image with important psychological repercussions.^[12] The timing of the onset of gynecomastia is very important: the greatest psychological impact occurs with onset in adolescence as compared with young childhood.

The Simon classification system was described in 1973 and focused on a qualitative assessment of skin redundancy and breast volume.^[13] Rohrich et al proposed a new classification system in 2003, which focused on estimates of total mass requiring excision and these categories were then further divided based upon tissue-type predominance.^[14]

Sonography is widely used in all breast's diseases. Typical findings in case of gynecomastia include hypochoic retro areolar masses (nodular, poorly defined or flame-shaped), with increased anteroposterior depth at the nipple.^[15] This evaluation is able to settle the composition of the breast (fat tissue and glandular tissue). Preoperative hormonal evaluation must be done to exclude secondary gynecomastia. Pubertal gynecomastia is self-limited and regresses in 1-3 years in 84%, 47% and 20% of adolescents with mild, moderate and severe gynecomastia.

If patient's condition of breast is caused by an underlying hormonal disorder, its treatment is generally sufficient to cause regression of gynecomastia. If gynecomastia either persists or becomes more severe and symptomatic with reduced quality of life (pain, unsatisfactory body image with psychological distress), pharmacological and surgical treatment should be considered, especially if the patient is compliant.^[16] The aim of medical treatment of gynecomastia is the correction of oestrogen-androgen imbalance.

Different surgical techniques share the same goals of restoring a pleasant chest shape with limited scar extension and the choice of surgeon depends on the severity of breast enlargement, the presence of skin excess and surgeon and patient preference.^[17]

Learning messages

1. Preoperative evaluation is very important in all cases of gynaecomastia.
2. Patients' psychological status must be taken into consideration.
3. The extent of removal of breast tissue should be marked preoperatively in standing/sitting position.

4. A disc of tissue must be preserved beneath the nipple-areola complex to avoid post operative retraction.
5. Post operatively patients should wear binders for three weeks to prevent seroma.

CONCLUSION

Multiple surgical approaches for the correction of gynecomastia have been described, including minimally invasive techniques such as liposuction, vacuum-assisted mastectomy, and endoscopic mastectomy (pull-through techniques). We present this study because surgical glandular resection with peri areolar incision is minimally invasive with aesthetic results.

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