

Current Surgical Treatment of Gynecomastia

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ABSTRACT

Gynecomastia is the proper growth in size and proportion of glandular breast tissue in men. It has various etiologies. Regardless of the stimulus or etiology, whether physiological or pathological, histologically the same changes will occur. The most used categorization for patients with gynecomastia is that of Simon BE. The management of each patient must be staggered, individualized and always offering the greatest safety. The surgeon must know this pathology to know all the therapeutic targets and their arsenal for management, surgical treatment must be reserved for selected cases and is an excellent alternative.

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INTRODUCTION

Gynecomastia is the proper growth in size and proportion of glandular breast tissue in men. It has various etiologies; however, all agree on an imbalance between testosterone and estrogen, in favor of the latter. It is usually bilateral. In most cases it yields spontaneously, but in those that do not yield, the most correct thing is to perform a medical procedure with extended criteria, since it produces an emotional, psychological, organic and physical effect and, in cases refractory to this procedure, the operation is surgical. Gynecomastia is the leading male breast disease, occurring in 38% of adolescents ¹.

Regardless of the stimulus or etiology, whether physiological or pathological, histologically the same changes will occur, which are usually separated by the early or augmented stage and the late or fibrotic stage. In the first phase, there is hyperplasia and elongation of the ducts, with a marked proliferation of inflammatory cells and periductal edema, which results in pain and hypersensitivity, particular during the first 6 months, while in the fibrous stage, at 12 months, the number of ducts increases, with the disappearance of the inflammatory attitude which, associated with stromal fibrosis, reduces the frequency of pain. In this last phase, it is not recommended to resort to medical treatment because of its low effectiveness ².

THEORETICAL FRAMEWORK

The most used categorization for patients with gynecomastia is that of Simon BE, who divides it into 3 degrees ³:

Level 1- there is slight breast growth, especially near the areola, without excess skin and a fatty chest; usually resolves spontaneously.

Level 2: there is moderate growth in breast volume, there is a more obese chest, not determined in the margins. It is divided in parallel into level 2A, which has no excess skin, and level 2B, where there is excess skin. Liposuction is basic and mostly requires surgery.

Level 3: simulates a female breast and, therefore, there is an increase in breast volume, with excess skin, which requires its resection. It is usually present in tall adults.

Generally, physiological gynecomastia does not require special studies, only observation and monitoring, however, in pathologies, the probability of endocrine origin must be decided, for which morning serum testosterone levels (9 a.m.), sex hormone binding globulin (free testosterone), estradiol, thyroid hormones (TSH), gonadotropic hormone, luteinizing hormone, follicle stimulating hormone and prolactin. If abnormal ratios are discovered, the patient should be referred to endocrinology. Additionally, renal and hepatic functionality and, on some occasions, karyotypes or tumor markers are assessed ⁴.

In the situation of atypical gynecomastia, ultrasound of the soft tissues of the breast should be performed to exclude the existence of masses or other injuries, mammography or fine needle aspiration biopsy (FNAB) or TRU-needle CUT in elderly patients to exclude neoplasms. Faced with the belief in testicular tumors, it is necessary to solicit beta human chorionic gonadotropin, alpha-fetoprotein and lactic dehydrogenase ⁴.

Current Surgical Treatment of Gynecomastia

The beginnings of the gynecomastia procedure depend primarily on the etiology, followed by the duration, level, severity and tenderness present, for which the following steps should be considered ⁵:

The first step in the operation for current drug-induced gynecomastia is not the procedure or the pharmacological observation, but to avoid or suspend, as much as possible, the use of drugs that cause it, such as the spironolactone, isoniazid, omeprazole, methotrexate, imatinib, amiodarone and alcohol. This should promote regression of glandular breast tissue approximately one month after discontinuation of the drug or procedure causing the underlying disorder, with resolution within 3 months for current-onset gynecomastia. However, if gynecomastia is not present and has been present continuously for well over 12 months, discontinuation of a medication may have no therapeutic impact on the regression of glandular tissue through elaborate fibrosis.

The second stage is observation of the patient for one year, based on the appearance of spontaneous regression of neonatal (less than 6 months) and pubertal gynecomastia, which were reported in 70% and 80% of cases respectively. If this does not happen, the next step is the pharmacological procedure.

Pharmacological treatment ⁵

Before starting any specific procedure, it is suggested to check for treatable underlying conditions, such as hyperthyroidism and hypogonadism, and if diagnosed, the next step might be to try these conditions and to examine the mammary glands by means of a physical examination 3 months later.

Early pharmacological procedure will only be indicated in patients with visible breast enlargement, and with general signs of pain, hypersensitivity, and social and psychological conditions that impair daily living. The procedure will not continually cause regression of gynecomastia, but it can mean relief from symptoms such as pain and a decrease in size, which will result in a better quality of life.

The main drug in patients with gynecomastia exclusively, without other diseases, is the selective estrogen receptor modulator (SERM) Tamoxifen, at a dose of 20 milligrams daily for 1 year. In boys and young people with severe gynecomastia (grade 2-3) and impairing social history, tamoxifen 20 milligrams every 24 hours or 10 milligrams every 12 hours for 3 months is suggested as a test to examine regression or not of the disease. In adults with gynecomastia older than 3 months, who have been under observation and the cause could not be determined, a brief 6-month test with Tamoxifen 20 mg every 24 hours is recommended, to assess the improvement or not of their condition. Regression of glandular tissue with Tamoxifen compared to Danazol is recorded in 78.2% of cases.

Tamoxifen is safer and more effective than danazol, however, in patients with solitary gynecomastia, it can cause side effects such as gastrointestinal disturbances, severe post-traumatic venous thrombosis, and cardiovascular events. It

causes toxicity in less than 5% of men in several studies, indicating that it may be well tolerated by the 28 male population, which is why it is preferred over other SERMs such as raloxifene.

One of the contraindications of Tamoxifen in gynecomastia disappears as soon as the patient suffers from hypogonadism, in which case an androgen or testosterone hormone replacement therapy procedure is recommended. However, this testosterone procedure, paradoxically, can cause the side effect of gynecomastia by aromatizing testosterone with estradiol. Although this procedure does not provide enough information to be effective in eugonadal men, dihydrotestosterone, a non-aromatizable androgen, has shown good results in patients with long-term pubertal gynecomastia.

As with the observation phase, pharmacological efficacy will only be effective in the early and non-fibrotic stages of gynecomastia, that is, up to the first year. In addition, the severity of this should be considered, since severe gynecomastia (grade 3) with pendulum nipples is unlikely to respond to a pharmacological procedure.

Aromatase inhibitors such as anastrozole and letrozole could theoretically be effective in gynecomastia by blocking estrogen biosynthesis, helping to minimize the estrogen/androgen differential in favor of testosterone, however, their usefulness has not been clinically demonstrated at this time and for unknown reasons. Studies for use in pubertal gynecomastia or senile patients with prostate cancer.

The earlier gynecomastia, the more symptomatic and treatable it will be. Meanwhile, surgery will be indicated for persistent or resistant gynecomastia and will be performed after the underlying cause is known.

Surgical treatment ⁶

The choice of surgical procedure is usually due to the defeat of spontaneous involution, the defeat of the medical procedure, or the patient's discomfort or embarrassment with the social and family environment, caused by the physical discomfort of the female aspect in a man, who it must be very well discussed with the patient or his guardian, in the situation of minors or young people.

Corrections should consider the inferior position of the nipple-area plate in relation to the inframammary fold, the magnitude of the areola, the touch in relation to adipose and glandular tissue, and the elasticity of the dermis.

The techniques of simple subcutaneous mastectomy plus flaps most used in general surgery for grade 1 and 2 gynecomastia according to Simon BE's categorization are those of Webster JP and Benelli L. Despite the new classifications of gynecomastia, the wide variety of surgical techniques in allows us to understand the efforts that the general surgeon faces in patients diagnosed with gynecomastia of a preeminent degree. There are few current references that have demonstrated success in psychological and self-esteem results.

Current Surgical Treatment of Gynecomastia

Unilateral or bilateral subcutaneous mastectomy is an outpatient method, which can be performed by several disciplines, preferably under inhalational general anesthesia, although it can be performed with local anesthesia and sedation in these level 1 cases, in mature, calm and cooperative patients.

With the patient in the supine position, prior asepsis and antisepsis of the anterior chest and placement of surgical drapes, the Braunstein maneuver is performed prior to the inferior periareolar incision, which involves skin and subcutaneous cellular tissue. The inferior and lateral flaps are sculpted and the areola-nipple complex is dissected, separating it from the fibroglandular tissue and preserving its vascular pedicle. Then, a sufficiently prominent flap is carved, without compromising its irrigation and, therefore, its viability, until reaching the prepectoral fascia, preserving it; A greater danger of hematoma or seroma formation in the future is prevented with an en bloc dissection with the fibroglandular tissue and sent for analysis of the disease. Precise hemostasis is performed, flaps and nipples are fixed with 3/0 absorbable thread, 1/8-inch closed drainage remains, or with fine Penrose (cigar) for those institutions that do not have this device. The dermis was closed with 3/0 monofilament non-absorbable suture, with separate points of view to avoid periareolar flap ischemia, after confirmation of normotension and absence of bleeding from the operative bed.

The mean age of the bilateral method is 55 min +/- 10 min, discharged from anesthetic recovery and verification of the absence of bleeding, outpatient surgery with paracetamol 1 g every 8 hours orally for 3 days and daily cures with saline solution; the use of antibiotics is prohibited, based on protocols for cleaning surgical wounds. The drainage is then withdrawn according to its production (about 3 days), thus preventing the formation of seromas. Dermal sutures are removed in 10 to 12 days. The procedure generally leads to great personal satisfaction in most patients (84.5% to 100%), but it is not without risks. In the literature there are reports of seromas (2.4% to 12.5%); bruising (5.8%) and ecchymosis (10%), despite meticulous hemostasis (Figure 7); some related to the use of drains 44,45. Other complications reported are keloids (2.5%), impaired sensitivity (3 - 14%), asymmetry (7%) due to skin redundancy, necrosis of the areola or flap and retractions, hypertrophy (14%), insufficient or incomplete resection with glandular persistence or recurrence (8%) 47. This occurs especially in those patients with grade 3 gynecomastia, so in these cases, it is recommended that the management be done in conjunction with plastic surgery, associating liposuction, and the use of the VASER technique. It should be clarified to the patient that the main objective of the procedure is the functional. Ultimately, the surgical procedure for gynecomastia in adolescents has been shown to have a positive impact on quality of life with improvements in physical function, general health, vitality, and psychological and psychosocial

health. The greatest developmental changes towards improved postoperative quality of life are achieved in adolescents and obese patients with moderate to severe gynecomastia.

CONCLUSION

The management of each patient must be staggered, individualized and always offering the greatest safety. The surgeon must know this pathology to know all the therapeutic targets and their arsenal for management, surgical treatment must be reserved for selected cases and is an excellent alternative.

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