

Quality of Life in the Surgical Treatment of Gynecomastia

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Abstract

Background Gynecomastia has an incidence of up to 60% of adolescents, causing pain and self-image disorders for the patient, leading to emotional and physical problems that can be reversed with treatment. This prospective case control study assessed the surgical treatment of gynecomastia and its impact on quality of life.

Methods Thirty-three patients aged 18–50 years and with 2–21 years of gynecomastia progression were included in the study. Adenectomy was performed. Preoperatively and 6 months postoperatively, patients completed the Brazilian version of the Short-Form 36 (SF-36) quality of life questionnaire.

Results There was improvement in the SF-36 domains of General Health, Functional Capacity, Social Aspects, Vitality, and Mental Health.

Conclusion The Short-Form 36 questionnaire demonstrated that surgical treatment of gynecomastia afforded positive changes in quality of life.

Keywords Gynecomastia · Quality of life · SF-36 · Questionnaire

Introduction

Gynecomastia is the most common breast disease in men. It is noteworthy because of its incidence, up to 8 in 100,000 men [1, 2], and its prevalence, 65% among boys 14 and 15 years old but affecting all age brackets, with peaks even after the fifth decade of life. Although it may reverse spontaneously or with medication, it persists in 7.5% of these patients. Treatment is preferably surgical, whether the gynecomastia results from glandular hypertrophy, fat accumulation, or both [3, 4].

Gynecomastia may be caused directly or indirectly by endocrine modifications leading to increased estrogens or decreased androgens and their receptors. The presence of neoplasms, whether local or as a paraneoplastic syndrome, and the use of medications should always be investigated as causes [1–3, 5].

When gynecomastia develops during puberty, slowly, symmetrically, and with no clinical signs of systemic disease, the patient's condition should be kept under observation [1, 6]. Treatment choice depends on neoplasm tracking and investigation of the use of certain types of medications. Surgical treatment is indicated only when there is treatment failure with specific drugs or no spontaneous regression [7–10].

Psychological repercussions of gynecomastia lead the patient avoiding social situations, especially group activities, and postural changes to hide gynecomastia represent one of the main complaints and are an indication for surgical treatment [6, 11, 12].

Gynecomastia has a great impact on the patient's quality of life, especially since it leads him giving up certain activities because of his problem. Among the instruments currently used to measure quality of life after medical intervention, the Medical Outcomes Study Short Form 36-

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Item Health Survey (SF-36) has been established as a generic instrument for measuring quality of life that provides a sensitive and detailed assessment [13]. Surgical treatment of gynecomastia has the objective of alleviating or lessening these effects on the patient's quality of life. Therefore, the objective of this study was to evaluate the quality of life of the surgically treated patient with gynecomastia.

Patients and Methods

Thirty-three male patients were selected from the 60 patients of the Plastic Surgery Breast Reconstruction Sector Ambulatory of UNIFESP with a clinical diagnosis of gynecomastia. Inclusion criteria for the study were clinical diagnosis of bilateral gynecomastia, prior endocrinologic investigation of the cause, completion of clinical treatment and release for surgery by the endocrinologist, approval in assessment of clinical and laboratory conditions, prior informed consent provided by the patient or his legal guardian for surgical treatment and study participation, 18 years of age or older, and completion of at least elementary school. Exclusion criteria were the presence of clinically decompensated etiology for gynecomastia, breast neoplasm, nonconsent by the patient for study participation, inability of following instructions for the operation or outpatient follow-up, clinical or psychological decompensation incompatible with surgery, including obesity (body mass index ≥ 30 kg/m²), known hypersensitivity to lidocaine or anesthetics, and cognitive incapacity to answer questionnaires. The study was approved by the Ethics in Research Committee of UNIFESP (No. 166/02). Each selected patient signed an informed consent form, with two copies, containing explanations about the definition, characteristics, study rationale, surgical procedure, complications, and freedom of the patient to leave the study if desired.

For surgery, the patients received general anesthesia and were submitted to adenectomy as per Webster's technique [7], preceded by liposuction. Patients were released from the hospital after evaluation for possible immediate complications. Treatment continued at the outpatient clinic where the surgical wound was evaluated for the presence of abnormal fluid collections or complications.

The quality-of-life evaluation instrument was the Short-Form 36-Item Health Survey (SF-36) questionnaire self-applied at the ambulatory sector 1 week before surgery and 6 months after. At the end of this period, results were tabulated and analyzed. Descriptive analysis was performed with Wilcoxon's nonparametric test [14] using the pre- and postoperative scores (at 6 months) of the eight SF-36 domains. The significance level adopted was $\alpha \leq 0.05$ (or 5%).

Results

Our subjects ranged in age from 18 to 50 years, with a mean of 25.1 years and a standard deviation of 8.8 years. Their body mass index (BMI) varied from 21.0 to 28.4 kg/m², with a mean of 25.16 kg/m² and standard deviation of 4.2 kg/m². As to race, 58% were white, 18% were black, and 24% were brown. The predominant level of education was high school (33.85%). Time with gynecomastia varied from 2 to 21 years, with a mean of 17 years. The most frequent etiology was puberal in 91% of the patients. Use of anabolic steroids, Klinefelter syndrome, and hypophyseal adenoma were the other causes identified. The mean age of patients with puberal gynecomastia was 20 years and the mean age at onset was 11.21 years. For patients with gynecomastia resulting from anabolic steroid use, the mean age was 29 years with a 3-year progression time. In patients with Klinefelter syndrome, the mean age was 37 years with a 10-year progression, and for those with a diagnosis of hypophyseal adenoma, the mean age was 20 years with a 2-year progression.

Data from the eight domains of the SF-36 were analyzed by Wilcoxon's nonparametric test both preoperatively and 6 months postoperatively for a sample of 33 patients. A statistically significant difference was noted (Table 1) for the following domains: General Health (SfGH), $P = 0.001$; Functional Capacity (SfFC), $P = 0.002$; Social Aspects (SfSA), $P = 0.002$; and Mental Health (SfMH), $P = 0.004$. In the Vitality domain (SfVt), there was a statistical difference with $P = 0.007$. For the Physical Aspects domain (SfPA), no statistically significant difference was found and $P = 0.097$. For the Emotional Aspects domain (SfEA), no statistically significant difference was found and $P = 0.142$. For the Pain domain (SfPain), no statistically significant difference was found and $P = 0.211$.

Discussion

Gynecomastia is a breast disease with a strong impact on men, especially during the puberal phase [1]. Besides the great prevalence, there is also a need to identify its diverse causes: congenital or acquired [15], use of licit or illicit drugs [5, 16], neoplasms, and paraneoplastic syndromes of nonbreast cancers. Treatment varies according to the cause, but correction of excessive breast tissue is surgical.

Our collection of cases showed the predominance of puberal etiology, i.e., 90.1% of cases. There were equal incidences of 3.03% of gynecomastia due to anabolic steroid use, Klinefelter syndrome, and hypophyseal adenoma (prolactinoma). Age at onset of gynecomastia of puberal cause, as described by Webster [7] and Mahoney [1], was between 11 and 14 years and is therefore a strong indicator

Table 1 Calculated values and significance for Wilcoxon's test for the domains of the SF-36 and Rosenberg preoperatively (pre) and at 6 months postoperatively (po6m) ($n = 33$)

Data ^a	Variation	Minimum	Maximum	Mean	SD	<i>P</i> (Wilcoxon)
SfGH-pre	63.0	37.0	100.0	80.515	13.5557	0.001*
SfGH-po6m	38.0	62.0	100.0	89.242	11.8481	
SfFC-pre	50.0	50.0	100.0	91.818	11.5798	0.002*
SfFC-po6m	30.0	70.0	100.0	96.970	6.4879	
SfLPA-pre	75.0	25.0	100.0	86.364	22.6134	0.097
SfLPA-po6m	75.0	25.0	100.0	92.424	18.2055	
SfEA-pre	66.7	33.3	100.0	83.838	26.5125	0.142
SfEA-po6m	66.7	33.3	100.0	87.879	21.7599	
SfSA-pre	87.5	12.5	100.0	80.288	24.6237	0.002*
SfSA-po6m	75.0	25.0	100.0	92.500	18.6246	
SfPain-pre	59.0	41.0	100.0	85.485	16.6829	0.211
SfPain-po6m	68.0	32.0	100.0	81.545	19.9266	
SfVIT-pre	85.0	15.0	100.0	72.727	20.6190	0.007*
SfVIT-po6m	45.0	55.0	100.0	82.182	11.2039	
SfMH-pre	64.0	36.0	100.0	76.000	14.2478	0.004*
SfMH-po6m	40.0	60.0	100.0	83.273	10.0227	
ROS-pre	13.0	0	13	6.364	3.4984	0.215
ROS-po6m	13.0	0	13	5.667	3.7053	

^a Short-form 36 domains:
SfGH = general health,
SfFC = functional capacity,
SfLPA = limitations due to
physical aspects,
SfEA = emotional aspects,
SfSA = social aspects,
SfPain = limitations due to
pain, SfVIT = vitality,
SfMH = mental health,
ROS = Rosenberg
questionnaire

* $P < 0.05$

of the diagnosis. For the other causes, progression times varied from 2 to 3 years and patients' ages varied from 20 to 37 years.

Body deformities may cause limitations and interfere in the emotional and social aspects of the patient's quality of life [13, 17, 18]. The multicentric Short-Form 36 questionnaire was chosen as a tool for assessment because it is recognized by the World Health Organization as an appropriate instrument for assessing quality of life and it has already been validated in Brazil [19]. The structure of the SF-36 questionnaire allows identification of two different domain groups: one encompassing the physical role and the other the emotional role [20]. The physical role includes General Health, Functional Capacity, Physical Aspects, and Pain. The emotional role includes Mental Health, Social Aspects, Vitality, and Emotional Aspects.

In the physical role group, there was improvement in our subjects with statistical significance in General Health and Functional Capacity. In the emotional role group, there was improvement with statistical significance in Mental Health, Social Aspects, and Vitality. Limitations by Physical Aspects, Pain, and Emotional Aspects showed no statistical relevance. On the other hand, in the General Health domain the improvement was relevant ($P = 0.001$). This domain represents the patient's perception and expectations regarding his own health [20]. Although gynecomastia does not cause any apparent serious health detriment, the patient considers it serious. General Health is the physical role domain that is most closely related to the domains of the emotional role. Therefore, an improvement in this

domain shows the repercussions of treatment for both roles [17, 21].

The Functional Capacity measured before and 6 months after surgical correction of gynecomastia showed a significant increase ($P = 0.002$). This domain shows that for smaller-scale operations, the patient's return to work happens earlier [9].

For Social Aspects, a significant difference was noted ($P = 0.002$). The complaint of social restriction instigated by gynecomastia is the main concern for most patients from its onset. The presence of enlarged breasts is a basis for discrimination [1, 2]. Soon after treatment there is a feeling of relief and freedom, allowing the patient to return to a normal social life [19, 22].

In the Vitality domain, there was a significant increase in means ($P = 0.007$). According to McHorney et al. [20], vitality is related to both physical and emotional health. A good disposition for participation in activities and well-being reflects the awareness of the newly acquired health status.

The greatest variations in SF-36 values were in Social Aspects, Vitality, General Health, and Mental Health.

Conclusion

Surgical treatment for gynecomastia has afforded positive changes in patients' quality of life, in both the physical and emotional realms, represented by pre- and postoperative changes in the domains of the Brazilian version of the SF-36 questionnaire.

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