

Psychosocial Impact of Abdominoplasty

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Abstract

Background The number of patients desiring reconstructive surgery after a huge weight loss achieved with gastric banding is increasing. This study was undertaken to determine whether plastic surgical removal of an overlap flap has a psychosocial effect on patients.

Methods Thirty-women and four men who underwent overlap flap surgery were interviewed 1 day before, and again 3 and approximately 12 months after the procedure using a series of instruments: Strauss and Appelt's Questionnaire for assessing one's body, the Body Perception Questionnaire by Paulus, the questionnaire for satisfaction of life by Fahrenberg, Myrtek, Schumacher, and Brähler, the Hospital Anxiety and Depression Scale (German version) by Herrmann, Buss, and Snaith, and the authors' general questionnaire after surgery. The same clinical parameters were also investigated in a control group of persons who did not undergo plastic surgery. Comparisons were made before and after surgery between and in both groups.

Results In contrast to the control group, surgical patients reported a highly significant increase in self-confidence and the feeling of being attractive ($p \leq 0.001$); 75% of the

surgical patients stated that their expectations were met by the plastic surgical intervention.

Conclusion Plastic surgery after weight loss improves body image and subjective quality of life. These results will influence the indication for a reconstructive operation in future.

Keywords Body image · Plastic surgery · Overlap flap · Weight reduction

Introduction

Morbid obesity is a disease with epidemic status in countries with a high gross national product. To lose weight and improve their health conditions, obese persons go on various kinds of diet or have surgery to reduce gastric volume. An important reason why many patients undergo stomach reduction (e.g., gastric banding) is because they desire to have an attractive exterior, which they associate with the loss of their overweight. However, massive weight loss leaves skin folds irregularly distributed among limbs, abdomen and breasts, increasing the occurrence of skin infection such as intertrigo. These factors may reduce the advantages of weight loss in various psychosocial regard such as quality of life, body image perception, and sexuality, which numerous authors have investigated [1, 2].

Several researchers have indicated that excess and rapid weight loss has partly negative body consequences and that, after laparoscopic banding, there is an increased demand for plastic surgery to remove redundant skin [3, 4]. Mostly, patients are unsatisfied with their abdomen, and abdominal flaps of various sizes can cause physiological and psychological problems [5, 6]. The importance of evaluating the psychological motivations and outcomes of patients

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undergoing cosmetic surgery has long been recognized [7]. Progress in evaluating these patients has primarily focused on developing preoperative screening methods to identify patients who may be dissatisfied or psychologically harmed as a result of surgical procedures and to identify patient psychopathology [8, 9].

A productive direction for clinical care and research is to integrate body image evaluation into the quality-of-life assessment of cosmetic surgery and ask the question how patients benefit from plastic surgery. Body image, defined as perceptions, thoughts, and feelings about the body and bodily experiences [10], is considered central to our understanding of the psychological issues of cosmetic surgery patients. According to Gillies [11], the concept of body image includes the inner picture one has of one's physical being, together with a heavy overlay of feelings about that structure. One's body image is an emotional view of one's physical self as seen in the mind's eye.

This study prospectively examined the consequences of abdominoplasty as follow-up treatment after morbid obesity with regard to quality of life, body image, anxiety, and depression.

Although studies have reported that most people undergoing cosmetic interventions are satisfied with the result, what has been less studied is the outcome in psychosocial terms [12], especially for plastic surgery after massive weight loss. Over and above that, few methodologically robust studies have been done [13].

Patients and Methods

Thirty consecutive female and four male patients requesting abdominoplasty at the Department of Plastic Surgery of Innsbruck Medical University Hospital and the Department of Plastic Surgery of the Linz Hospital of Sisters of mercy were evaluated 1 day before and approximately 3 and 12 months after the procedure between 2000 and 2003. All gave informed consent to participate in this study. The ethics committee of our institution approved the study protocol.

A letter reminding about the purpose of the study was included with the postoperative surveys. Patients were asked to complete and return the questionnaire sealed in an envelope provided. The same procedure was applied for our controls. This group consisted of 26 gastric banding patients from Innsbruck Medical University Hospital, who lost weight but did not undergo plastic surgery.

Three patients in the surgery group changed their address, and thus, no further data on them were obtained postoperatively.

The following psychological questionnaires were administered:

1. Strauss and Appelts' Questionnaire for assessing one's own body [14]. This questionnaire consisting of 52 items, which are to be answered with "true" or "not true," covers four factors. "Attractiveness/self-confidence": This scale above all describes the satisfaction and joy with one's own body or the opposite, for instance "I wish I had a different body." "Accentuation of external appearance": e.g., "I often look at myself in the mirror." "Worry about possible physical deficits": This scale focuses primarily on a marked attention directed to one's own body and an uncertainty about or a lack of faith in physical functioning such as "I can rely on my body." "Problems regarding sexuality": This scale is concerned with sexual dissatisfaction, sense of shame regarding sexuality, and unhappy sexual feelings, for example, "I don't like to be touched."
2. Subscale "Emphasis on attractiveness" of the Body Perception Questionnaire by Paulus [15]. The 22 items in this scale assess the extent to which appearance is adjusted to meet social norms, e.g., "I try to meet the ideals of beauty as envisaged by our society".
3. The Life Satisfaction Questionnaire [16] contains ten areas of life and an index of general life satisfaction. It covers ten dimensions of life: healthiness, work life, financial status, leisure, partnership, relationship to own children, own person, sexuality, friends/relatives, and residence.
4. The Hospital Anxiety and Depression Scale (HADS) [17] is a widely used self-rating scale for detecting states of depression and anxiety and has been shown to have good psychometric properties. The anxiety (HADS-A) and depression (HADS-D) subscales (each with 7 items, from 0, 'no distress', to 21 'maximum distress') have also been shown to be valid measures of the severity of the emotional disorders in clinical populations with symptoms of physical disease.
5. The authors' general questionnaire after surgery asks about financing, expectations, reasons, desire for any other plastic surgery, dealing with the scar, satisfaction, effects on leisure activities, sexuality and inhibitions, and preoperative surgical information.

Statistical Analysis

All responses were entered in a database, and statistical analysis was performed with the statistical package SPSS. Significance was accepted with 95% confidence.

Initial assessment of metric data for normal distribution showed that they were normally distributed. Thus, a repeated-measures model analysis of variance was performed to test whether the difference between the group means over the three measuring points is statistically significant. To test for intergroup differences in ordinal variables, the Mann–Whitney *U* test was computed. Nominal variables were analyzed with the Pearson chi-square test.

Results

As Table 1 shows, there was no statistically significant difference in sociodemographic or clinical parameters between the two groups.

Emphasis on Attractiveness

Patients' (surgery and control group) initial mean scores for emphasis on attractiveness on body perception question-

naire were lower than the scores in the Paulus study. No significant differences were seen between the surgery and the control group.

Body Image

Consequences to body image is demonstrated in Table 2.

There are statistically significant differences among the two groups, namely a significant postsurgical improvement in the subscale attractiveness/self-esteem for body image in the surgery group, whereas patient scores in the control group first decrease and then rise at the second follow-up.

Life Satisfaction, Anxiety, and Depression

No change was evident, either in life satisfaction or in anxiety and depression. Furthermore, pretest values for each of these measures were comparable to reported adult norms, suggesting that this patient sample generally reported normal levels of psychosocial well-being.

Table 1 Sociodemographic and clinical parameters of patients with and without abdominoplasty

Groups	With abdominoplasty (<i>n</i> =34) Mean±SD	Frequency/%	Without abdominoplasty (<i>n</i> =26) Mean±SD	Frequency/%	<i>p</i> value
Age	37.1±9.3		39.9±7.2		0.105
BMI					0.835
Before weight loss	43.1±7.8		43.6±4.7		
At time	27.1±5.1		27.9±3.7		0.321
Gastric banding					
With		18/52.9%		26/100%	
Without		16/47.1		0	0.683
Gender					
Male		4/88.2%		4/15.4%	
Female		30/11.8%		22/84.6%	0.061
Marital status					
Single		0		3/11.5%	
Single, but with a steady partner		8/23.5%		1/3.8%	
Married		19/55.9%		18/69.2%	
Divorced		7/20.6%		4/15.4%	0.811
Education					
Compulsory schooling		9/26.5%		7/26.9%	
Vocational training		19/55.9%		14/53.8%	
Higher Education		6/17.6%		5/19.2%	0.419
Job					
Employed		23/67.6%		20/76.9%	
Homemaker		8/23.5%		5/19.2%	
Retired		1/2.9%		0	
In education		2/5.9%		1/3.8%	

Table 2 Body image of both groups at three different measuring times

Groups	With abdominoplasty (n=34)			Without abdominoplasty (n=26)			F	p value
	T0 Mean	T1 Mean	T2 Mean	T0 Mean	T1 Mean	T2 Mean		
Measuring-points								
Body Image Questionnaire								
Attractiveness/self-confidence	5.73	8.83	10.52	8.50	7.41	9.45	7.543	0.001***
Accentuation of external appearance	7.52	8.14	8.35	7.31	7.22	7.37	0.079	0.924
Worry about possible physical deficits	3.73	3.50	4.03	4.38	4.37	3.35	0.978	0.379
Problems regarding sexuality	2.24	2.36	2.42	1.88	2.43	1.45	0.532	0.570

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

Authors' General Questionnaire after Surgery

After surgery, 24 (80%) of the patients reported that the plastic surgery was their own decision and the main reason for it was the feeling of being unattractive. Ten patients reported difficulties with their clothing, and eight patients had sore skin under the flap. All patients would recommend the plastic surgery to others, and all would undergo the procedure again. All surgical interventions were paid by public health insurance. Eleven (36.7%) patients would have paid the surgery on their own. The expectations that 24 patients (80%) had placed in abdominoplasty were met. Twenty patients reported that they did not mind the long scar on their abdomen. Nineteen patients would advocate extensive surgical consultation before surgery, e.g., with photo. Six (20%) of the patients reported wound-healing complications. Loss of the overlap flap was associated by 21 (67.7%) of the patients with a change in leisure activities (e.g., doing sports, going swimming), by 20 (64.5%) with reduced inhibitions (e.g., toward a partner or about showing his/her body), and 27 (87.1%) reported an improvement in their sexual relationship.

At the time of the second follow-up, eight (25.8%) of the patients had undergone a second plastic surgery operation for pendulous breasts or flabby skin on upper arms or thighs. Twenty-one (87.5%) of the patients stated that the abdominoplasty (first intervention) had intensified their desire or decision to have another other plastic surgery operation.

Discussion

The present study analyzes the psychosocial consequences of abdominoplasty. Only few studies have empirically demonstrated the psychological benefits of cosmetic surgery [13]. In particular, plastic surgery after massive weight loss has not received due psychological attention.

Patients in the present study reported consistent postoperatively improvement in body image. In contrast to the control group, these patients felt more attractive, and they feel more self-confident. This is in contrast to the results of a study by Sarwer et al. [18], which found no such changes. However, their use of a heterogeneous sample may have masked the possibility that such changes occur for abdominoplasty but not for other cosmetic procedures. The changes in body image seen in the present study were not matched by similar changes in psychometric data on satisfaction with life, anxiety, or depression. These findings are not surprising in that there were no indications of preoperative problems in these areas, making it unlikely that we would detect postoperative change. Nevertheless, patients reported an improvement in sexual relationships, in leisure activities (e.g., sports, going swimming), and in avoidance of body exposure in descriptive questions on the authors' general questionnaire after surgery, which they relate to the loss of the overlap flap. These findings are similar to those of Bolton et al. [19].

It is normal for patients to expect positive postoperative change in body image like some studies found out too. However, expecting consistent postoperative changes in general life satisfaction or psychological functioning may be setting surgical expectations too high.

We had predicted that abdominoplasty patients would report making a greater investment toward confirming with social standards for appearance (the greater the investment, the greater the likelihood of undergoing abdominoplasty) as compared with patients without plastic surgery and healthy controls. This assumption was not verified, and the finding is consistent with those documented by Sarwer et al. [10] and Bolton et al. [19].

Consistent with other investigations, the present study found that patients reported a high degree of satisfaction with the results of cosmetic surgery. All patients reported that they would undergo surgery again and would

recommend surgery to others. Patients showed a preference for long scars over surplus tissue. These findings are similar to those of Palmer et al. [6], Savage [7], and Mühlbauer [20].

The present study has several limitations that call for improvement in future studies. Future investigations should strive for larger sample sizes and compare them with persons not at all interested in plastic surgery. Patients in the surgery group should have undergone only one surgical intervention. It will also be important to analyze the body image motivations and changes experienced by male plastic surgery patients, about whom we know little. Similarly, psychosocial outcome must be evaluated in other cosmetic surgery patients to see whether results can be generalized (e.g., for patients seeking surgery for pendulous breasts or flabby skin on upper arms or thighs or rejuvenating facial procedures).

We feel that these data provide valuable insights into important aspects of plastic surgery, namely body image and life satisfaction. A person who seeks such a surgical procedure should not be considered psychologically disturbed, and preoperatively, cases should be evaluated thoroughly and on a person-to-person basis.

The present study can be used to counsel patients considering plastic surgery after massive weight loss. Of the patients, 61% would recommend intense postoperative counseling with photos and more information. In general, more studies of the relationship between body image, sociocultural factors, and plastic surgery should be made.

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