

Assessment of health-related quality of life in patients with cosmetic abdominoplasty

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Original Article

PLASTIC SURGERY



Abstract: Introduction: Abdominoplasty is one of the top six cosmetic procedures performed. There is scarcity of data regarding the effects of nonpostbariatric (aesthetic) abdominoplasty on various aspects of quality of life so, we decided to assess the effects of abdominoplasty on health related quality of life.

Methods: The study included 82 prospective female patients coming to Plastic Surgery Department with the concern of aesthetic abdominoplasty. The RAND 36-Item Short-Form Health Survey was chosen for measuring the quality of life. Participants filled the questionnaire both preoperatively and postoperatively. The average length of follow-up was 06 months. The difference in the scores shows the change in the quality of life.

Results: The mean age of the participants was 44 ± 9.9 years. The physical functioning score improved from a mean score of 65.91 preoperative to 95.73 postoperative. The variable, Energy showed a significant improvement from baseline 57.81 to follow-up 87.80. Preoperative emotional well-being was boosted from 72.93 to 95.27 after the surgery. The variable of pain showed great resolution. The overall general health was significantly improved from 59.02 to 92.56.

Conclusion: Aesthetic abdominoplasty patients show significant improvement in their quality of life in terms of general health, physical functioning, emotional well-being and energy levels. Cosmetic abdominoplasty has a direct impact on social and psychological well-being of the patients and surely is an indication if a patient's self-esteem or social life is compromised because of their external appearance.

Keywords: Abdominoplasty, RAND-36.

Introduction

Abdominoplasty was introduced by Kelly in 1910¹ and is long been considered as a cosmetic surgery. United States cosmetic surgery national data bank statistics affirms abdominoplasty as one of the top six cosmetic procedures performed.^{2,4} Despite the fact that among all cosmetic procedures it carries the highest risk of complications its demand is on the rise.⁵ The compelling reason behind this upsurge in demand is not just the increase in the obesity⁶ but also the intensifying rates of patients' satisfaction.

A number of studies have proven the health benefit of post-bariatric abdominoplasty⁷⁻¹¹ however there is scarcity of such studies in cosmetic (non-post bariatric) abdominoplasty.¹²⁻¹⁵ The various aspects of quality of life like body image, self-esteem, mental health, sexual relations, everyday functioning and satisfaction has been observed in these studies but the level of evidence is reflected weak.¹⁶

In up to the minute health management, quality of life is increasingly accepted as a relevant endpoint.¹⁵ Along with an excellent surgical technique

outcome of surgery.¹⁷ Often in aesthetic surgery the improvement in quality of life represents the only surgical indication and the surgical success depends primarily on the subjective experience of the patients.^{18,19} This effect on the quality of life does not only provide us with the knowledge about the success of the surgery but is also used as a tool for the future surgical patients' treatment plan.²⁰ Whether cosmetic surgery is subject to value-added tax (VAT) or not, raised the need to study the effects of such procedures on the quality of life. Taking into consideration all these notions and the scarcity of prospective studies on the effects of cosmetic abdominoplasty on the quality of life, we decided to conduct a prospective study in our region.

Methods

The study included 82 prospective female patients coming to Plastic Surgery Department with concern of aesthetic abdominoplasty over a period of 2 years from March 2018 to February 2020.

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BMI (kg/m ²)	Frequency (n)	(%)
Normal	2	2.4
Over weight (25-29)	10	12
Class I (30-34.9)	29	34.9
Class II (35-39.9)	40	48.2
Class III (>40)	2	2.4
TOTAL	83	100

Table 1. Data distribution according to the WHO classification.

Ethics Research Committee provided ethical approval. Post-bariatric patients and those undergoing multiple operative procedures at one time, participating in other studies at our department; planned for secondary abdominoplasty, modified incision techniques, having preexisting mesh in the anterior abdominal wall or having body dysmorphic disorder were all excluded from the study. Patients with multiple comorbidities and requiring hernioplasty were also excluded from the study. Patients undergoing aesthetic abdominoplasty were included in the study and were interviewed and consented. Demographic data and body mass index were recorded. Participants in the research group were required to fill the validated 36-item short form health survey (SF-36) before the surgery and at a minimum follow up of 04 months. The average length of follow-up was 06 months.

All operations were performed by one of the three plastic surgeons in the department, following same operative technique. Preoperative markings were performed in the standing position. All operations were done under general anesthesia. A bikini line incision was made with an undermining of the abdominal flap up to the xiphoid process with umbilical preservation (i.e., traditional abdominoplasty). Rectus fascia was plicated with nonresorbable sutures. If required liposuction of the flanks was performed. All patients received perioperative deep venous thrombosis prophylaxis. Two closed vacuum system drains were placed and removed when output is below 20 cc per day in each drain. Postoperative therapy involved the use of an abdominal binder, starting at the operating table at the end of the procedure in all the patients and continuing for 4 to 6 weeks. Patients were advised avoidance of heavy lifts (>10 kg) and strenuous exercise for four to five weeks. All the patients were discharged on the following day after mobilization.

Statistical Analysis Tools

The RAND 36-Item Short-Form Health Survey was chosen as the tool for measuring quality of life. There are a total of eight variables in the questionnaire, namely, physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning, pain and general health. Each of the variables is scored both preoperatively and postoperatively, where 0 is poor and 100 is excellent. The difference in the scores shows change in the quality of life. The distributions of the variables are given as the mean and SD, and median and range for continuous variables; and as the numbers and percentages for categorical variables. For comparison between the preoperative and postoperative scores of the variables paired t-test was used. The overall statistical level of significance was set at $p < 0.05$.

Results

The mean age of the participants was 44 years (SD 9.9). According to WHO Classification of obesity majority 47.6% of our patients were from Class II category followed by 35.4% from Class I obesity (Table 1). Liposuction of the flanks was performed in sixty patients, out of these only 21 patients had more than 500mls of liposuction.

All of the eight variables of SF-36 questionnaire were analyzed preoperatively and postoperatively (Table 2). The physical functioning score was improved from a mean score of 65.91 preoperative to 95.73 postoperative. Role limitations either due to physical or emotional health (variable no 2 and 3) are decreased markedly, as shown by the improvement in scores of these two variables the former improved from 42.07 to 96.65 and the later from 53.25 to 100. The variable, Energy/Fatigue showed an increase in the vigor from 57.87 to 87.80. Preoperative emotional well-being was boosted from 72.93 to 95.27 after the surgery. No change in the preoperative and postoperative social functioning variable was observed. The variable of pain showed improved resolution from 64.66 to 95.98. The overall general health was greatly improved from 59.02 to 92.56. Regarding complications, only one woman required exploration due to hematoma. Blood transfusion was not needed in any case. Most common complication was development of seroma (6.3%), requiring conservative management. None of the patients developed DVT, pulmonary embolism or wound dehiscence. Five (6.09%) women had superficial knot fistulation and infection managed with antibiotics and local wound care. The overall major complication rate was 1.2% and minor complication

Variable	PRE OPERATIVE SCORES		POST OPERATIVE SCORES	
	MEAN	STD. DEVIATION	MEAN	STD. DEVIATION
Physical Functioning	65.91	26.424	95.73	8.393
Role Limitation Due To Physical Health	42.07	46.461	96.65	16.083
Role Limitation Due To Emotional Health	53.25	47.1	100	0
Energy/Fatigue	57.87	21.33	87.8	15.696
Emotional Wellbeing	72.93	22.639	95.27	9.921
Social Functioning	99.39	3.88	99.39	3.88
Pain	64.66	28.845	95.98	8.649
General Health	59.02	29.684	92.56	12.304

Table 2. Patients' Pre and Post-Operative scores in SF36 variables.

rate was 13.2%. Whereby major complications were defined as seromas requiring aspiration, hematomas requiring evacuation, deep venous thrombosis, pulmonary embolism and infections requiring intravenous antibiotics. Minor complications were defined as seromas and hematomas not requiring surgical intervention, stitch abscess, fat necrosis, wound dehiscence, hypertrophic scarring and umbilical necrosis managed conservatively.

Discussion

They say, true beauty comes from within. Physical beauty is valued so much socially and psychologically that it has a direct effect on our nature, social life, behavior and our being.¹⁸ Physical beauty has a proportionate effect on the quality of life.¹⁷ If this holds true, can the quality of life be increased by undergoing elective aesthetic surgery? Moreover, does the risk of an aesthetic surgical procedure justified by the cost to benefit ratio regarding the quality of life.

To solve this quest we conducted a study in our region using RAND 36 item short form health survey (SF-36). Our study shows statistically significant levels of improvement in the quality of life after abdominoplasty. Overall, most of the patients have significantly increased scores in six out of the eight variables of the SF-36 questionnaire. The level of satisfaction of the patients is the compelling reason behind increase in the demand of the procedure. A study by Bragg et al. showed a high satisfaction rate of 77 percent, with 62 percent of patients would agree to have the surgery repeated.²¹ Hensel et al, showed 86 percent satisfaction rate. However, the questionnaire used in these studies were self-developed and not standardized²²

A prospective study in nonpostbariatric abdominoplasty by Saariniemi et al showed significantly improved overall quality of life, body satisfaction, effectiveness, sexual functioning and self-esteem, with a decrease in level of depression.²³

Similar results have been proven in the previous studies as well.^{13-15,18}

Our study showed a marked increase in general health of the patients postoperatively, whereas the study by Staleesan et al. showed a decrease in the general health of the postbariatric abdominoplasty patients.²⁴ Our study showed no difference in the social functioning of the patients, whereas Staleesan et al²⁴ showed a slight decrease in the social functioning of the postbariatric abdominoplasty patients and attributed it to the lax redundant skin on the other areas of the body and the same reason holds true for the negative impact of abdominoplasty on their mental health. In contrary to this, our study showed is positive impact on the emotional wellbeing of our aesthetic patients. Likewise Papadopulos et al showed improvement in the self-esteem and well balanced emotional stability in operated patients.¹⁸ The improvement in the pain score in our study is comparable to results proved in other studies^{18,24} Taylor reported alleviation of lower back pain, as proven by a decrease in Oswestry Disability Index from 10.9 to 1.58 irrespective of the type of abdominoplasty done.^{25,26}

In contrast to the decrease in the vitality of the postoperative patients in Staalesen²⁴ study, our study showed remarkably improved levels of energy. Similarly, energy score were superior in post-operative patients as compared to norm data in study by Nikolaos.¹⁸

The role limitation in terms of physical and emotional health faced by the preoperative patients is substantially decreased in our study thus increasing the post-operative patients' performance and productivity. Analogous results in terms of improvement in motility, independence from assistance, and physical function is proven in a number of studies.^{18,25} Staalesan showed improvement in the physical function in plicated as well as non-plicated group.²⁴

In our study patients with higher BMI developed more complications. Similar relationship

was proven in a study by Murshid et al.⁵ Whereas a study conducted by Joseph et al reported similar perioperative complications rate in both obese and non-obese patients.²⁷

Our seroma rate is 6.30%, this varies from 2.3 to 17 percent.²⁷⁻²⁹ The infection rate in our study is very low as compared to that found in the literature reported to be 2.7 to 10%.²⁸ Because of the strict DVT prophylaxis measures taken none of our patients developed deep venous thrombosis or pulmonary embolism, which is comparable to the results of Batac and Durot.^{27,28}

The strengths of our study include its prospective nature. To enhance the homogeneity of the data all the participants of the study were female seeking abdominoplasty as a cosmetic procedure rather than as an adjunct in post bariatric surgery. There is no such study in literature conducted from Pakistan. The operative technique, pre and post-operative protocols followed were similar in all the patients, thus increasing its reliability. To limit bias patients undergoing multiple surgeries were excluded. Standardized and validated questionnaire³⁰ was used for the evaluation of quality of life. Our study showed statistically significant result.

The limitations of our study include short follow-up time. Because of the reluctance of the cosmetic patients to remain in research for protracted period this short mean follow up time was accepted. Moreover, early interview time has an advantage in terms of recollection of patients' preoperative expectations, facts of her recovery period, postoperative complications and physical and psychological impact of the procedure.

Conflicts of interests

There is no conflict of interest to disclose. This study is not funded by any agency with proprietary or financial interest in the outcome of this work.

Acknowledgements

Foremost, I want to offer this endeavor to God Almighty for the wisdom He bestowed upon me and the strength in order to complete this research.

I would like to express my special gratitude and thanks to my supervisor Dr. Mamoon Rashid for his generous help and for imparting his knowledge and expertise in this study.

I am highly indebted to my teachers, Dr. Saleem Malik, Dr. Saad Ur Rehman and Dr. Muhammad Ibrahim for their guidance and constant supervision as well as for providing necessary information regarding this research.

I would like to express my gratitude towards my family for the love, prayers and encouragement which helped me in the completion of this paper. My thanks and appreciation go to my friends and colleagues especially Dr. Mehreen, Dr. Zarghoona, Miss Memoona and Miss Baririah who have willingly helped me out with their abilities.

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