

Abdominoplasty in Morbidly Obese Patients, Benefits and Risks Is it Valuable?

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ABSTRACT

Background: Obesity is a growing problem worldwide, with morbidly obese patients frequently presenting with redundant panniculus causing physical, social, and emotional problems. Functional abdominoplasty may be offered for those patients who refused bariatric surgery to alleviate these problems. Controlling co-morbid diseases and risk factors was done to decrease risks of abdominoplasty.

Purpose: The objective of this article is to evaluate the effectiveness, benefits, and risks of abdominoplasty in morbidly obese patients on a functional basis.

Patients and Methods: 19 patients included in this study, 7 males and 12 females from February 2012 to March 2014.

They were underwent abdominoplasty after strict controlling of co-morbid diseases and risk factors and the results were evaluated in light of the incidence of complications and a questionnaire measuring subjective opinions about postoperative improvements.

Results: 19 patients (7 males and 12 females) were included. Their age ranged from 33 to 56 years. Their (BMI) ranged from 35 to 51 kgm². Their panniculus ranged from grade 2 to 4. All the patients were satisfied by their improvements in life style, psychological status, and sexual activities. There were 2 patients with seroma, 2 patients with wound infection, 3 patients with major flap necrosis and 5 patients with delayed wound healing.

Conclusion: Morbid obesity should not preclude abdominoplasty. On the contrary, the patients benefit in many ways from the operation. Strict controlling of co-morbid diseases and risk factors is a preoperative requisite to decrease the incidence of complications.

INTRODUCTION

Obesity is a growing problem worldwide, with a mean prevalence of approximately 20-30% in adults in Europe and USA, while morbid obesity rates range from 4.7 to 6% in the adult population. Obesity is defined as a body mass index (BMI) above 30, and morbid obesity as a BMI above 40kgm² [1-3].

The Morbidly obese patients present with a myriad of problems, a frequent one being a redun-

dant panniculus. The extents of the panniculus has been described as small, moderate, or sever [4].

Although bariatric surgery has been shown to be the most effective method in providing substantial long-term weight loss obese patients, yet some obese patients decline the surgery and prefer to spend more time on exercise and dieting trying to lose weight. Unfortunately, they mostly fail, resulting in a miserable life style, having a pendulous abdomen with back pain, bad odor caused by fungal infection in the skin folds, low self esteem, and sexual relation problems [5].

Although abdominoplasty is an aesthetic procedure used to make the abdomen tighter and of more aesthetic shape, yet it can be done as an immediate and definitive functional management for the above mentioned category of patients to remove their aprons (panniculus) to improve their quality of life, psychological status, sexual relations and self hygiene [6].

The aim of this article is to evaluate the effectiveness, benefits, and risks of the functional abdominoplasty in managing morbidly obese patients to get red off their panniculus and its related bad squeale.

PATIENTS AND METHODS

This study was done at the Departments of Plastic Surgery, of both Ain Sham and Menoufia University Hospitals in the period from February 2012 to March 2014 with a follow-up period of about 12 months.

The study included 19 morbidly obese patients, 7 males and twelve females. Their age ranged from 33 to 56 years. Their body mass index (BMI) ranged from 35 to 51kgm². The patients were assessed for risk factors and co-morbid diseases including diabetes mellitus, hypertension, smoking,

contraceptive pills use and previous thromboembolic disease.

The extent of their panniculus had been graded according to the grading system devised by Daniel et al. [4] as follows, Grade 1: Panniculus covering pubic hair line but not entire mons pubis; Grade 2: Panniculus extended to cover entire mons pubis; Grade 3: Panniculus extended to cover the upper thigh; Grade 4: Panniculus extended to mid thigh; and Grade 5: Panniculus extended to the knee and beyond.

A questionnaire was formulated on a subjective basis to evaluate the results and benefits about 6 months postoperatively. It had scores from 0 to 10 with three grades as follows; (unsatisfied: scoring from 0 to 3), (satisfied: scoring from 4 to 7), and (well satisfied: scoring from 8 to 10). The questionnaire included the following items, scarring, abdominal shape, backache, weight loss, skin intertrigo, daily activity and life style, psychological satisfaction, sexual satisfaction, sleep comfort, diet and exercise compliance.

Preoperative preparation of patients:

The aim was to control the co-morbid conditions and risk factors to decrease the incidence of complications:

- Diabetic patients were hospitalized one day before surgery, and subjected to strict diabetes control by regular insulin scale supervised by our endocrinology colleagues.
- Hypertensive patients had their blood pressure controlled by proper medications.
- Patients with intertrigo and fungal infections were treated by dermatologists before surgery.
- Smoking was ceased about 8 weeks before surgery.
- The patients were examined for the presence of umbilical hernias and divarication of recti.

Preoperative markings:

The patients were marked the day of surgery in a standing position. The inferior incision extended inferiorly above the inguinal ligament and pubic crease, and laterally to encompass the panniculus. The superior mark was arbitrarily at the level of the umbilicus.

Surgical technique:

The patients were operated on under general anesthesia, prepped and draped in the usual fashion. The panniculus was retracted by one assistant surgeon, then the inferior incision was done just

above the pubic and inguinal creases (including any cesarean scar) extending laterally beyond the anterior superior iliac spine to include the panniculus, and carried down through the subcutaneous tissue until the external oblique fascia was reached. The superficial inferior epigastric vessels were ligated. The dissection was carried above the external oblique fascia within the confines of the inferior incision in a cephalad direction until the umbilicus is reached. The periumbilical perforators were ligated by vicryle 2/0. The umbilicus was dissected free by a scissors and prepared for repositioning during closure of the superior tissue flap. Dissection above the umbilicus is narrowed only to the extent needed for placation of divaricated recti to preserve the blood and nerve supply from the subcostal region to the flap. If there was divarication of recti, placation of the rectus sheath was done using double layer of prolene zero from the xephoid to the pubic region.

At this point, the entire flap was pulled down by the assistant surgeon, bringing the superior marked line close to the inferior incision. The superior incision was now made following the estimated line or a few centimeters below, such that the edge of the superior flap could be approximated to the inferior skin margin without tension. Having excised the redundant pannus, closure of the wound was started. Perfect hemostasis was done. Two suction drains were inserted on either side of the anterior fascia, under the superior flap and brought out through a stab wound on either side of mons pubis. The umbilicus was refashioned to a smaller size if necessary and brought out through the superior flap about the level of the iliac crest, without angulation or tension. The superior and inferior skin flaps were closed in a 3 layer tension free manner. The scarpa,s fascia was closed by interrupted no 1 vicryle sutures, the subcutaneous layer was closed with interrupted no 2/0 vicryle sutures, and the skin was closed with prolene no 2/0 running subcuticluar suture. Dry gauze and adhesive tape was then applied.

Postoperative care:

- Anticoagulation was initiated on the first postoperative day (clexan 40mg per day).
- Leg exercise, early ambulation, adequate hydration and chest physiotherapy were encouraged.
- Blood glucose was strictly controlled by crystal-line insulin scale in diabetic patients.
- Drains were remove when the output fallen below 50ml over 24 hours.

RESULTS

This study included 19 morbidly obese patients, 7 males and 12 females. Their panniculus ranged from grade 2 to grade 4. Their age ranged from 33 to 56 years. Their body mass index (BMI) ranged from 35 to 51kgm².

The study sample included 4 smokers, all were males, (who stopped smoking 4 weeks before surgery), five diabetic patients (3 females and 2 males), and six hypertensive patients (4 males and 2 females), and five female patients with history of caesarian section.

As regards patient improvements, the results were shown in the 6-month postoperative questionnaire in Table (1).

All the patients were satisfied by their improvement in life style, psychological status, abdominal shape, general appearance and sexual activities (Figs. 1-6).

As regards the complications, they were shown in Table (2).

There were 2 patients having seroma treated by repeated aseptic aspiration and pressure garments. Three patients had major flap necrosis, underwent surgical debridement and repeated dressing and healed by secondary intention in 5 to 9 weeks. The two patients with abdominal wound infection treated with culture specific antibiotics and repeated dressing.

The majority of complications occurred in patients having co-morbid disease, rather than the isolated high BMI.

Table (1): Subjective improvements 6-month postoperatively.

Item	Average scoring	Grading
Scarring	4	Satisfied
Abdominal shape	6	Satisfied
Backache	8	Well satisfied
Skin intertrigo	8	Well satisfied
Weight loss	5	Satisfied
Daily activity and life style	7	Satisfied
Psychological satisfaction	7	Satisfied
Sexual satisfaction	7	Satisfied
Sleep comfort	8	Well satisfied
Exercise compliance	6	Satisfied

Table (2): Complications and their association with co-morbid diseases.

Complication	Co-morbid disease association	Number of patients Total (19)
Seroma	100% (D.M.- smoking)	2 patients (10.5%)
Hematoma	None	None
Wound infection	100% (D.M.)	2 patients (10.5%)
Major skin necrosis	100% (D.M.- smoking)	3 patients (15.7%)
Delayed wound healing	60% (D.M.)	5 patients (26.3%)
DVT and pulmonary embolism	None	None



Fig. (1): Preoperative frontal view of male patient (BMI 48kg.m²) with grade 4 panniculus.



Fig. (2): Postoperative frontal view of patient in Fig. (1) after panniculectomy.

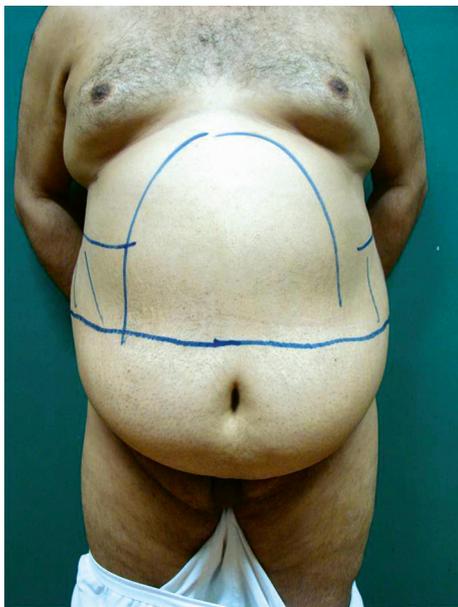


Fig. (3): Preoperative frontal view of male patient (BMI 41kg.m²) with grade 3 panniculus.



Fig. (4): Postoperative frontal view of patient in Fig. (3) after panniculectomy



Fig. (5): Preoperative frontal view of female patient (BMI 38kg.m²) with grade 3 panniculus.



Fig. (6): Postoperative frontal view of patient in Fig. (5) after panniculectomy.

DISCUSSION

Body contouring surgery especially abdominoplasty, has become an increasingly popular procedure not only for aesthetic purposes, but also for its preventive and therapeutic effect on back pain [7].

Abdominoplasty can also improve the quality of life, in terms of daily physical activity and sexual life, and improves the relationship with the other partner [8]. Abdominoplasty also benefits in

the elimination of fungal infection, ability to wear fitted garments and improvement of psychiatric status [9].

Although the complication rates for abdominoplasty are significantly higher in smokers [10], or in co-morbid conditions like diabetes or hypertension [11,12], the effect of the body mass index is always argued [13,14].

Comparing our results with those of Daniel et al. [4] who did 428 panniculectomies concurrently

with bariatric surgery on morbidly obese patients, they had a wound necrosis and dehiscence of about (9.8%), seroma about (4.2%), wound infection about (2.3%), and hematoma (1.9%), respectively.

Murshid et al., had done abdominoplasty on 100 morbidly obese patients. They had a major necrosis about (3%), seroma about (6%), wound infection about (3%) and hematoma about (1%), respectively.

Our results were, wound necrosis about (15.7%), seroma about (10.5%), wound infection about (10.5%), and no hematomas. The complications encountered in this study were more common in patients presenting with co-morbid diseases like diabetes mellitus or hypertension or were smokers. Strict controlling and elimination of these co-morbid/risk factors decreases the risks of abdominoplasty.

In conclusion, morbid obesity should not preclude an abdominoplasty. On the contrary, the patients benefit in many ways from the operation even if it is performed as a functional procedure and not a cosmetic one, provided the risk factors and co-morbid conditions are controlled.

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