

LOWER BODY CONTOURING POST MASSIVE WEIGHT LOSS

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ABSTRACT

Background: The lower body contouring surgeries are aiming to improve the contour of the waist, buttocks and thighs. It targets the lower truncal subunit and thighs as a one unit to improve the lower body contour. The aim of the present study was to assess surgical outcomes of the patients in lower body contouring after massive weight loss. **Patients and methods:** This study was conducted on 10 patients to describe and appraise the different modalities of lower body contouring after massive weight loss at Plastic Surgery Unit, General Surgery Department, Faculty of Medicine, Zagazig University Hospitals. Clinical assesment, scar placement and meticulous marking, surgical procedure and post operative care were performed. **Results:** The mean of operation time was 213.2 ± 28.36 min with a range from 165 to 250 min. The mean of Lipoaspirate amount was 1213 ± 216.9 ml with a range from 850 to 1500 ml. The mean of time to drain removal was 4 ± 1.3 days with a range from 2 to 6 days, while Length of hospital stay was 2.5 ± 0.84 days with a range from 1 to 4 days. Most of operated cases had no complications (80 %), while complication either in the form of infection or seroma occurs in 10% respectively. There was positive correlation between lipoaspirate amount and length of hospital stay among the studied group. **Conclusion:** Lower body lift is a safe surgery with no undermining or liposuction in short operative times. The reasonable overall complications rate and the surprisingly lower rate of dehiscence and skin necrosis combined with a pleasant aesthetic result make the lower body Contouring an easy and secure procedure, when applied to the appropriate patient population.

Keywords: Lower Body Contouring; Massive weight loss; Post Bariatric Surgery

INTRODUCTION

The massive weight loss anatomical deformity is characterized by excess skin in almost every area of the body including the face and neck, arms, breasts, abdomen, buttocks, and thighs (1). One significant sequelae of massive weight loss with excess skin, 70-96% of the patients who have undergone bariatric surgery report that they are bothered by excess skin (2). Concerning the post bariatric patients, apparent histological changes in the dermis including degradation of collagen and elastin can be found (3).

Most massive weight loss patients presenting for body contouring express interest in the lower trunk first. This is important because a lower body procedure not only improves the lower trunk but also may have an effect on the thighs and back and, to a lesser degree, the chest. In some male patients, a lower body procedure may have enough of an effect on the thighs and chest to negate the need for additional procedures (4 ;5).

The common complication of body lift/belt lipectomy, outside of small non-healing areas along the incision line, is seroma. As a matter of fact, if the surgeon elects to operate on patients presenting with BMIs >35, they should expect a seroma in almost all cases. It has become apparent that the presence of a seroma capsule is not an indication for operating on a seroma, as is traditionally believed (6).

Therefore, the current study aimed to assess the surgical outcomes of the patients in lower body contouring after massive weight loss.

PATIENTS AND METHODS

A prospective cohort study included 10 patients who underwent lower body contouring after massive weight loss at Plastic Surgery Unit, Departemnet of General Surgery, Faculty of Medicine, Zagazig University Hospitals.

Clinical assesment, scar placement and meticulous marking, surgical procedure and post operative care were performed. Informed written consent was taken from the patient to participate in the study.

Inclusion and exclusion criteria: All patients must have lost more than 30 kg of their weight with a body weight stable for 3 months at the time of undergoing lower body contouring. While, patients who had lost weight due to haemmatological and vascular disorders, uncontrolled diabetes, sepsis and cancer patients were excluded.

Preoperative assessment:

preoperative evaluation was mandatory because the body-contouring procedures following MWL were often extensive with the potential for significant morbidity and even mortality. Meticulous markings were done for the selected procedure at least one day before the scheduled date for surgery with patients placed in standing position.

Surgical technique:

Surgery was performed using a prone-to-supine approach by surgeon and two assistants divided into two groups (right and left sides), with the leading surgeon supervising the entire procedure. All patients underwent general anaesthesia. The epidermis and upper part of dermis were incised with a scalpel, with the rest of the procedure carried out by monopolar diathermy cautery. Posterior excision was performed without undermining.

In the buttocks area, the surgeon left a moderate quantity of areolar adipose tissue to improve the gluteal region shape; at the flanks, the level of dissection laid just above the external oblique muscle fascia. The wounds were closed in three layers: Scarpa's layer with vicryl 2/0, dermis with monocryl 3/0 and nylon 3/0 for the subcuticular stitch.

At the flank, on both sides three stitches of vicryl 1 suture were placed to improve the wound closure strength and avoid wound breaking while the patient was rotated. The patient was turned to the supine position, re-prepped and draped. The flap was elevated widely to the umbilical horizontal line.

Slightly above and below the umbilicus, the fascia was sutured with vicryl 1 in order to secure the stalk and prevent future dislocation. The umbilicus was sutured to the rectus sheath with interrupted suture at 3, 6, 9, 12 o'clock. Two large suction Blake 19F drains were left in situ. The circumferential surgical wound was covered with mesh tape and cyanoacrylate glue to prevent contamination.

Postoperative care and follow up:

A second-generation cephalosporin was given intraoperatively and for 7 days postoperatively. Graded compression stockings and pneumatic calf compression boots were worn throughout the operation, and the stockings also postoperatively. The drains were removed when output was less than 40 cc in a 24h period. Follow up was

done to the patient for 6 months at least and asking the patient about his satisfaction, measuring pre and post circumferential diameters and process of care.

Statistical Analysis:

Data were analyzed using Statistical Package of Social Services version 24 (SPSS). Data were represented in graphs and tables, continuous quantitative variables e.g age was expressed as the mean \pm SD and median (range), and categorical qualitative variables were expressed as absolute frequencies (number) and relative frequencies (percentage). P-value of (<0.05) was considered statistically significant.

RESULTS

The present study included 10 patients enrolled for lower body contouring after massive weight loss with mean age of the studied patients was 38.50 ± 6.98 years old. The most of the studied patients were female (80 %) (**Figure 1**).

The mean of operation time was 213.2 ± 28.36 min with a range from 165 to 250 min (**Table 1**).

The mean of Lipoaspirate amount was 1213 ± 216.9 ml with a range from 850 to 1500 ml (**Figure 2**).

The mean of time to drain removal was 4 ± 1.3 days with a range from 2 to 6 days, while Length of hospital stay was 2.5 ± 0.84 days with a range from 1 to 4 days (**Figure 3**).

Most of operated cases had no complications (80 %), while complication either in the form of infection or seroma occurs in 10% respectively (**Figure 4**).

Correlation between lipoaspirate amount and length of hospital stay among the studied group was shown in **Figure(5)**.

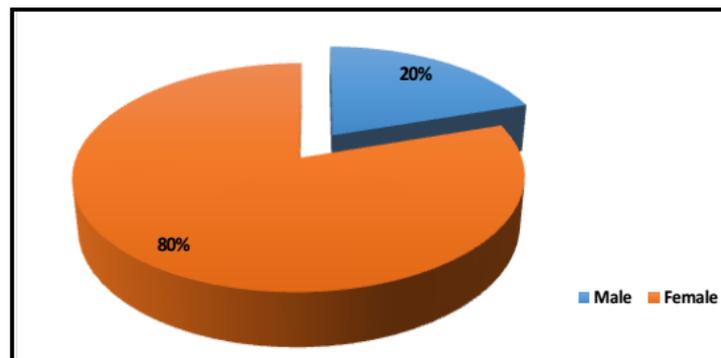


Figure (1): Pie diagram showing sex distribution among the studied patients.

Table (1): Operation time among the studied group

studied patients (N=10)	
Operation time (min)	
Mean \pm SD	213.2 \pm 28.36
Median (Range)	214(165-250)

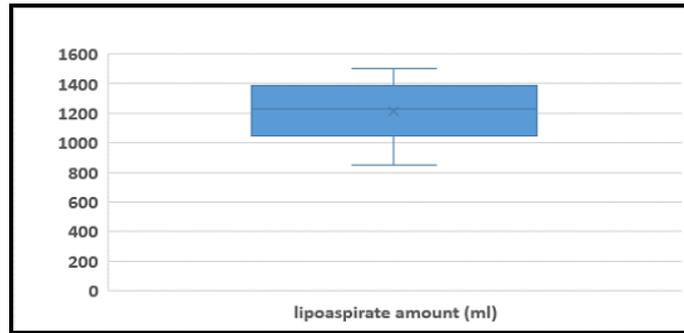


Figure (2): Lipoaspirate amount among the studied group

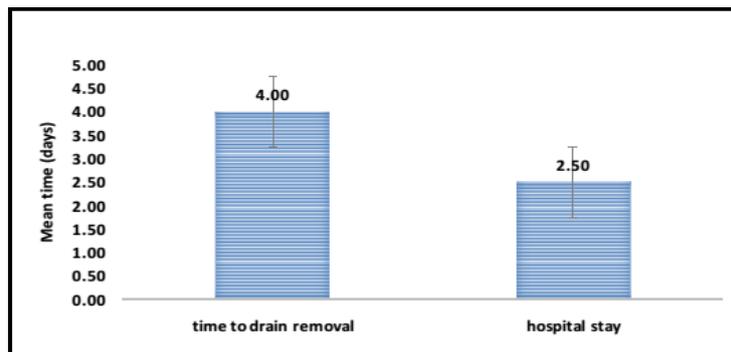


Figure (3): Time to drain removal and length of hospital stay among the studied group.

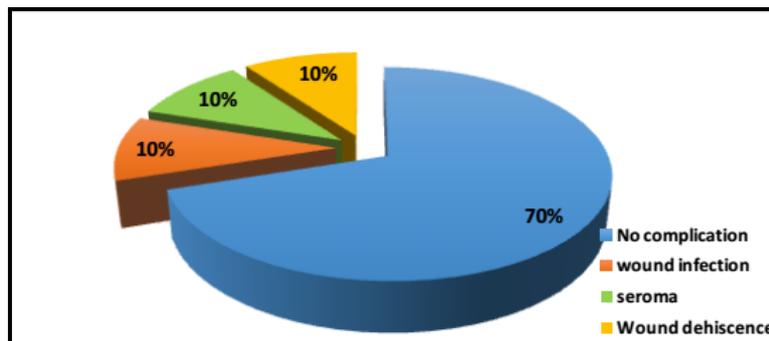


Figure (4): Pie diagram showing complications among the studied group

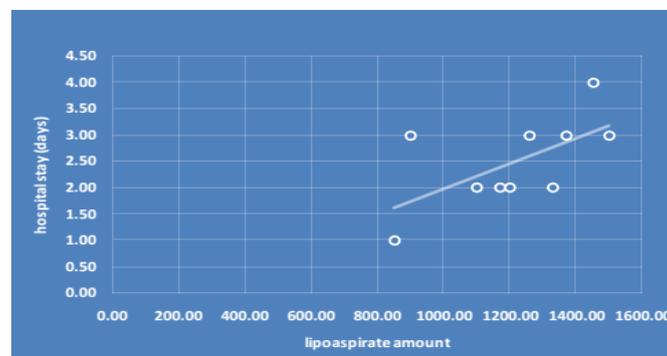


Figure (5): Scatter diagram showing correlation between lipoaspirate amount and length of hospital stay among the studied group

DISCUSSION:

In spite of satisfactory weight loss and maintenance, some individuals still disparage their body image after bariatric surgery, and seek body contouring procedures in order to improve their physical appearance (7).

The aim of this study to assess the surgical outcomes of the patients in lower body contouring after massive weight loss.

The present study concur with the study of **Richter et al., (8)** that attempts to manage the postbariatric patient with abdominoplasty alone are likely to result in an unsatisfactory outcome. For patients with saddlebags and laxity of the lower trunk, thighs and buttock region, a lower body lift could be a treatment of choice.

Our study showed that that mean operative time was 213.2 ± 28.36 min with a range from 165 to 250 min. We did not observe any differences in duration of the intervention, because the liposuction was performed on a very limited surface. So, it was completed by the surgeon in a short time; furthermore, the cut was bloodless, in this way, we proceeded faster as we should not coagulate the dermis. Regarding liposuction volume, our study showed that was 1213 ± 216.9 ml with a range from 850 to 1500 ml, while mean of resection weight (gm) was 939 ± 209.25 gm with a range from 670 to 1250 gm. This goes with **Bertheuil et al. (9)** that found that the mean operative time was 229 ± 34 minutes, and the mean mass of resected skin was 986 ± 386 g.

Yet, mean liposuction volume in their study was 2760 ± 1011 ml which was way higher than the volume in our results which contradicts our study. Our results also agree with **Losco et al. (10)** that found the mean operative time was 222 ± 20.7 min. Although body contouring procedures in massive weight loss patients (MWL) are associated with an increase in quality of life and high patient satisfaction, the relatively high complication rates can affect these positive experiences negatively: Minor complications are very common, and major complications, even if rare, are troublesome for surgeons, and threaten the patients.

Most of our operated cases had no complications (70%), while complications either in the form of infection, seroma and wound dehiscence occur in 10% respectively. All the complications were managed on an outpatient basis. The cases of wound infection were treated with local medications and oral antibiotics, while the seroma was treated by fine needle aspirations. We have had no cases of skin necrosis or postoperative persistent edema clearly confirms the benefits of liposuction. Our cut was bloodless and there was no need to coagulate the dermis which then healed better and faster. The absence of thermal dermis injury also improved the quality of the scars. No cases of scar enlargements or migration were observed.

Lievain et al., (11) reported that Postbariatric patients were associated with a higher complications rate during abdominoplasties, especially healing problems. It is reported that bariatric surgery has an effect on skin structure and function as well as susceptibility to diseases; tissue collected from both normal appearing skin and from striae exhibited inflammation, scarring, collagen resorption and elastin degradation.

On the other hand, **De Kerviler et al. (12)** conducted 104 patients who had undergone bariatric surgery didn't suffer an increase in drawbacks in subsequent body contouring procedures, when compared to massive dietetic weight reduction.

Patients aiming for body contouring procedures after MWL, and particularly those with a BMI greater than 30, have an increased risk of postoperative complications after body contouring surgery, including wound healing problems, wound infections with subsequent necessary treatment, hematomas and seromas (13).

Also, **Saldanha et al. (14)** reported a seroma rate of only 0.4 percent in a series of 445 lipoabdominoplasty patients.

Our results were in line with **Bertheuil et al. (9)** found that 40 percent experienced at least one complication; 12 percent had two or more complications. No patient experienced any major complication (i.e., hematoma, thromboembolism, bleeding, skin necrosis, or need for revision surgery).

Minor complications in our included wound dehiscence [10 cases (40 percent)] treated by healing with secondary intention, and wound infection [two cases (8 percent)] and fat necrosis (8 percent). Wound dehiscence was isolated in six patients and multiple in four patients, and the mean size per defect was 2.5 cm² (range, 0.5 to 9 cm²). However, there were no reported seroma cases in his study while we had one patient suffering wound seroma which subsided with conservative treatment.

Losco et al. (10) found that the overall complications rate related to lower body lift was 42 percent including 45 dehiscences smaller than 2 cm in length (14%) and 3 hematomas (1%) which goes to some extent with our results. Yet, the seroma rate was higher constituting 35% of their complications while it was lower in our study representing only 10% of the complications.

Our study showed that there is significant positive correlation between lipoaspirate amount and hospital stay, which means that hospital stay is prolonged according to the amount of lipoaspirate, the more the amount of lipoaspirate, the longer hospital stay ($r=0.647$ and $p\text{-value}=0.043$). While **Losco et al. (10)** found that the hospital stay was significantly associated with patient general conditions and operative time, but not with lipoaspirate amount.

Moreover, **Gmur et al. (15)** found male sex, age greater than 41 years, BMI greater than 30 kg/m², operative time longer than 3 h, and blood loss greater than 1L to significantly influence complications rates.

In our opinion, the lipo-body lift is an optimal technique when it is used to perform high-quality, safe, circumferential lower trunk contouring on normal or overweight patients who have experienced massive weight loss. The learning curve is five to 10 procedures. At the start of the learning curve, undercorrection of the abdominal pannus is common because of inadequate liposuction under the superficial fascia.

It is obvious to us that the fullest liposuction possible must be achieved even if the ratio of volume to body mass index is highest, because postoperative complications were dominated by wound dehiscence that were easily treated in the ambulatory setting by secondary wound healing. It is more acceptable for the patient and the surgeon than an undercorrection, which requires a second operative procedure, adding to the cost and the operative risk.

CONCLUSION:

Lower body lift is a safe surgery with no undermining or liposuction in short operative times. A recipe to perform a simple surgery in a short time with a low complication rate and pleasing aesthetic result should be advocated.

The reasonable overall complications rate and the surprisingly lower rate of dehiscence and skin necrosis combined with a pleasant aesthetic result make the lower body Contouring an easy and secure procedure, when applied to the appropriate patient population.

No Conflict of interest.

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