



Publisher homepage: www.universepg.com, ISSN: 2663-7529 (Online) & 2663-7510 (Print)

<https://doi.org/10.34104/ejmhs.024.057069>

European Journal of Medical and Health Sciences

Journal homepage: www.universepg.com/journal/ejmhs



Liposuction Assisted Medial Thighplasty: An Objective Assessment Using Thigh Circumference

Ahmed M. Gamal^{1*}, Eduardo Matos², Rui Medeiros², Moustafa Elsonbaty¹, Mohamed Makboul¹, and Wagdi M. Ali¹

¹Department of Plastic Surgery, Faculty of Medicine, Assiut University, Egypt; and ²Department of Plastic Surgery, Hospital de Santa Maria, CHLN, Lisbon, Portugal.

*Correspondence: ahmedM.Gamal@outlook.com (Ahmed M. Gamal, Department of Plastic Surgery, Faculty of Medicine, Assiut University, Egypt).

ABSTRACT

Medial thighplasty is becoming more common among patients who have had massive weight loss (MWL). The excess skin on the inner thigh might create functionality, infection, and mental health difficulties. Popularity notwithstanding, the surgery has a high risk of complications. The purpose of this research was to determine the efficacy and safety of liposuction-assisted medial thighplasty by measuring the effect on thigh circumference in relation to fat aspirate volume and the breadth of the skin that was vertically removed. The Pittsburgh Rating Scale (PRS) was used for patient evaluation. A total of fourteen patients had liposuction-assisted medial thighplasty. Ten patients were categorized as having PRS grade II and four as having PRS grade III, and only those patients were considered for inclusion. The average patient was 48.42 years old, with 12 being female, and their mean body mass index (BMI) was 27.42 kg/m². Among the total complications, wound dehiscence accounted for 35.7% of 50%. Differences in upper ($r=0.75$, $p=0.001$) and middle ($r=0.77$, $p=0.001$) thigh circumferences were positively correlated with the quantity of lipoaspirate. A weak association was found between variations in upper, middle, and lower thigh circumferences and the breadth of skin that was vertically resected. Patient categorization according to their unique demands is of utmost significance, as is a thorough evaluation of patient wants and needs before medial thighplasty. The overall clinical results are improved by this personalized strategy, which guarantees the best selection of surgical procedures.

Keywords: Thighplasty, Thigh lift, Thigh circumference, Liposuction, Weight loss, BMI, and Assessment.

INTRODUCTION:

Obesity has become more common among people of all ages and economic levels as a result of modern lifestyle changes and easy access to fast food. As a result, healthcare delivery systems are under a lot of pressure due to the obesity epidemic and its related comorbidities. However, there is a rising group of people who have successfully lost a lot of weight because of the advent of safe bariatric surgery methods and the increased public awareness of the dangers of obesity (Khan, 2021). The appearance of skin excess is a regrettable consequence of massive

weight loss (MWL) that may affect people's physical and mental health (Khan, 2021). Body contouring surgery (BCS) is a viable option for certain patients seeking reconstruction after experiencing dressing problems, poor cleanliness, dermatological disorders, hampered physical activity, and even challenges with sexual function (Wolfe *et al.*, 2016). Patients often complain of sagging skin and extra fat in many parts of the body, including the breasts, thighs, arms, and abdominal wall (Eduardo MC, 2016). Plastic surgeons encounter a significant task in correcting the complex abnormalities that result

from MWL. Particularly common among those looking for body shaping procedures are abnormalities of the thigh contour, especially those affecting the medial thighs (Capella & Matarasso, 2016). Even though this is a common worry, some plastic surgeons are hesitant to do medial thigh lifts because they fear serious problems and less-than-ideal results (Capella & Matarasso, 2016). The inner thigh presents special difficulties for surgeons due to its damp environment, which slows wound healing; the skin's thinness and weakness, which increases the likelihood of wound complications; and the area's closeness to the anus and external genitalia, which increases the chance of infection (Di Pietro *et al.*, 2019). Some other things to think about are the risks of lymphedema due to the superficial nature of lymphatic vessels, lower limb edema from damage to the superficial venous system, and vulvar deformities and enlargements caused by scars, such as retraction and enlargement in the inguinal fold, which affect the labia majora (Di Pietro *et al.*, 2019). In 2014, 17,109 thighplasty operations were done, marking a 491% rise since 1997 (Tasfap, 2012), according to statistics from the American Society for Aesthetic Plastic Surgery (ASAPS). Similar tendencies are seen in MWL patients who want cosmetic surgery after bariatric treatments; over 75% of females and 68% of males want interventions to shape their bodies (Kitzinger *et al.*, 2012). Despite the growing demand, there is a lack of thorough data about the

rates of complications and risk factors linked with thighplasty (Afshari *et al.*, 2016). This research aims to fill that informational vacuum by providing results that will help surgeons and patients understand what to anticipate. Despite its effectiveness in treating abnormalities in the thigh area, there is surprisingly little evidence, especially in addressing medial thighplasty (MTP) (Mocquard *et al.*, 2020; Biswas *et al.*, 2021; Almomani M. and Almomani M., 2024).

Patients and methods

The 14 participants in this prospective research took place between January 2018 and January 2023 at the North Lisbon University Hospital (Hospital de Santa Maria) in Portugal and the Assiut University Hospital in Egypt. Research on liposuction-assisted medial thighplasty, a surgical technique for correcting abnormalities in the shape of the thighs, was the primary aim of the present investigation. As shown in **Table 1**, the Pittsburgh Rating Scale (PRS) was used for patient evaluation. This scale is a rating system that was developed to determine three levels of abnormalities. The PRS classifies deformities into three degrees: the 'non-deflated type,' marked by an excess of volume but no skin laxity; the 'mixed type,' involving moderate excess of both skin and volume; and the 'deflated type,' marked by minimal volume excess but considerable skin excess. Only individuals with PRS grades II and III abnormalities were considered for inclusion in this research.

Table 1: Pittsburgh Rating Scale (Song *et al.*, 2005).

Classification	Description	Treatment
0	Normal	None
1	Excessive adiposity	UAL and/or SAL ± excisional lifting procedure
2	Severe adiposity and/or severe cellulite	UAL and/or SAL ± excisional lifting procedure
3	Skin folds	Excisional lifting procedure

Preoperative assessment

A thorough preoperative evaluation was conducted on each patient before surgery. The pinch test was used to assess the amount of extra fat. Extreme care was taken to determine the location, direction (vertical, horizontal, or both), and degree of skin laxity. Since smoking might affect the results of surgery, patients who had smoked in the past were told to stop smoking at least three weeks before their planned operation. In order to determine each patient's unique goals and requirements for the procedure, extensive consultations were conducted. There were two main reasons given for seeking surgery:

one, to make clothes fit better, and second, to make the thighs seem younger. Careful consideration of these aims was critical in deciding on the best surgical approach. The surgery and its possible effects were explained in great detail to the patients. Patients were clearly informed about the surgical procedure, its expected final scars, postoperative effects (e.g., ecchymosis and edema), recovery time (estimated) and potential complications (described in detail) in the informed consent form that they signed. All of the patients had their height, weight, and BMI taken. To ensure uniformity, the same surgeon consistently measured the patient's thighs while they

were upright before surgery. The upper and lower thigh circumferences were measured horizontally just beneath the inguinal crease and two centimetres above the upper patellar border respectively. The middle thigh circumference was measured at mid-point of vertical line extending from greater trochanter down to lateral condyle of femur. Preoperative images were methodically captured from three different angles: anteroposterior, posteroanterior, and medial. An extensive visual record of the thigh contour before surgery was possible because of this systematic documenting procedure, which is useful for assessing the success of the operation. This systematic and exacting preoperative approach laid the groundwork for an in-depth examination of the results of liposuction-assisted medial thighplasty by guaranteeing a full comprehension of patient traits, objectives, and architectural factors.

Surgical technique

Marking and positioning

The surgical marks were carefully made while the patients were standing. The location and orientation of the skin redundancy were used to decide the incision design strategically. Patients were instructed to adduct their thigh against resistance and a line was drawn from the proximal thigh following the palpated adductor magnus muscle extending down to the medial epicondyle of femur to determine the vertical scar location. The standard practice was to end the vertical incision a finger or two finger breadths above the patella's top border. It was possible to designate the inguinal crease for the horizontal incision and, if needed, extend it to the cruro-gluteal sulcus. All patients underwent surgery under general anaesthesia. Intraoperatively, Patients assumed the frog leg position, which is defined as the following: hips abducted, knees bent at 90 degrees, and both feet facing each other while the procedure was being performed. In addition, all patients were given a urinary catheter, which was usually withdrawn 24 hours after surgery, in order to promote the best possible intraoperative circumstances (**Fig. 1**). For maximizing surgical accuracy and addressing individual differences in skin redundancy, this standardized approach to operational marks and patient positioning ensures a personalized and successful procedure. An incision that had been originally made at a straight angle was modified to be more obtuse and sloping. The goal of this change was to reduce

the likelihood of wound complications in that particular region.



Fig. 1: Operative Markings with the patient in frog leg position.

The pinch test was used to identify the vertical and horizontal extents of skin to be excised, guaranteeing a precise and personalized approach.

Infiltration and liposuction

The subcutaneous layer inside the specified region of resection was injected with a tumescent solution. A 4 mm blunt-tip cannula was used for aggressive liposuction, which left a visible hollow in the middle of the thigh. It was the goal of the liposuction process, as determined by clinical judgment using methods like the rolling and pinch tests (**Fig. 2**), to completely remove the subcutaneous tissue. Subsequently, the medial knee region and ventral and dorsal proximal thighs were all treated using standard liposuction procedures. In order to get a more balanced result once the surgical incisions were closed, this typical liposuction step helped to smooth out the thigh shape and reduce bulging in the front.

Skin resection and closure

The incisions were performed with great attention to detail, extending to the superficial fascial system. The skin island was then avulsed in a distal-to-proximal manner, as shown in **Fig. 3**, to avoid damaging the subcutaneous connective tissues, veins, nerves, and lymphatic branches in the thigh. Temporary wound closure was accomplished using stapler clips after full hemostasis. Sutures made of 2/0 polypropylene were used to attach the superficial fascial system to Colle's fascia. The placement of a 16-gauge suction drain was deliberate. Two layers of deep dermal sutures (3/0 absorbable interrupted) and intradermal Monocryl sutures (3/0 running) were used to close the wound. Elastic bandages were then placed, starting at the foot and working their way up

to the proximal thigh, after which adhesive strips and dressing were applied. The overall success of the liposuction-assisted medial thighplasty treatment was due in part to this meticulous and multi-step closure approach, which sought to assure optimum wound healing and reduce complications. Elastic bandages were then placed, starting at the foot and

working their way up to the proximal thigh, after which adhesive strips and dressing were applied. The overall success of the liposuction-assisted medial thighplasty treatment was due in part to this meticulous and multi-step closure approach, which sought to assure optimum wound healing and reduce complications.



Fig. 2: Pinch test to ensure thorough evacuation after aggressive liposuction (Note the marked thinning of the area to be resected).

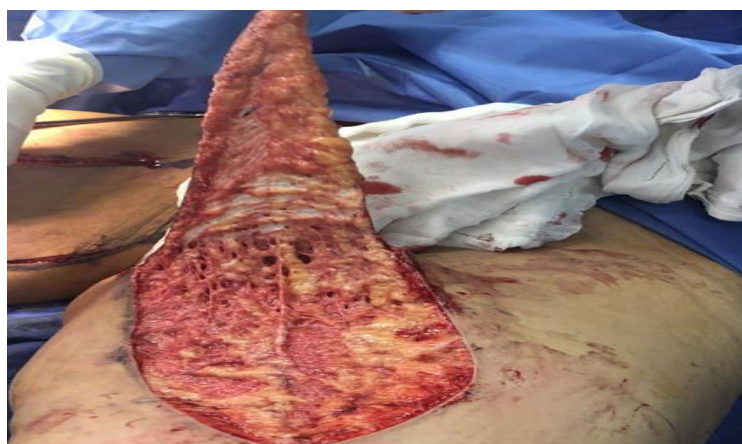


Fig. 3: Skin avulsion at the level of superficial fascial system from distal to proximal (Note the long saphenous vein preserved).

Postoperative care

Prophylaxis against thrombosis was started by administering subcutaneously enoxaparin sodium (Low-molecular-weight heparin LMWH) for 7 days to all patients, and they were all given a thorough broad-spectrum antibacterial treatment. Leg wrapping and early mobilization were part of the protocol, which also stressed the need to keep the hips in an abducted position to avoid friction. It was recommended that patients wear compression garments continuously for at least three weeks, both at night and throughout the day. After the first fifteen days of scheduling regular follow-up sessions every five days to track drug replacement, the plan was changed to weekly check-ups for the first month.

UniversePG | www.universepg.com



Fig. 4: Measurement of the maximum width of vertically resected skin.

The amount of fat aspirate and the maximum width of vertically resected skin were measured to be analyzed in relation to postoperative differences in

thigh circumference (**Fig.4**). The goal of this all-encompassing plan for postoperative care after liposuction-assisted medial thighplasty was to hasten

healing and reduce the likelihood of problems. **Fig. 5** shows the postoperative final scar one month after surgery.



Fig. 5: Postoperative final scar.

Postoperative assessment

The evaluation process was thorough, including questions about patient satisfaction, measuring the variations in thigh circumference objectively, looking for correlations with fat aspirate volume and maximum breadth of vertically resected skin, and evaluating any issues that may have occurred. The results of the operation were evaluated by administering a direct questionnaire to each patient, who was asked to rate their level of satisfaction with the results as outstanding, good, fair, or bad. The clearance of postoperative edema was confirmed three months after surgery by taking objective measures of the upper, middle, and lower thigh circumferences. In order to determine the changes, these measurements were compared to the values that were recorded before the operation. Complication evaluation was performed at various intervals. Within the first two weeks after surgery, surgeons looked for signs of seroma, hematoma, wound dehiscence, infection, skin necrosis, and thromboembolism. When evaluated three months later, late problems included lymphedema, asymmetry, recurrent ptosis, hypertrophic scarring, scar migration and labial spreading.

Statistical analysis

The statistical package used for data collection and analysis was SPSS (Statistical Package for the Social Sciences, version 20, IBM, Armonk, New York). The normality of the data was checked using the Shapiro test. The mean $\pm$ standard deviation (SD) is used to show quantitative data that follows a normal distribution. The Student t test was used for comparison. A Pearson correlation was used to ascertain the relationship between lipoaspirate and resected skin

with respect to the mean difference in thigh circumference. A statistically significant result was determined when the confidence level was maintained at 95%, which is less than 0.05. The statistical approach used in this study was quite rigorous, which allowed for a thorough examination of the data gathered from medial thighplasty surgeries that included liposuction.

RESULTS:

The research results indicated that the average age of the fourteen patients who underwent medial thighplasty with liposuction was 48.42 years. The average body mass index (BMI) of these patients was 27.42 kg/m², and 12 of them were female. It should be noted that a considerable majority of the patients, making up 85.7% (12/14), had previously procedures to alter their body shape, with 64.2% of those procedures being abdominoplasty. One patient had brachioplasty with liposuction-assisted medial thighplasty done simultaneously (**Table 2**). A total of 10 patients out of 14 were found to have undergone MWL. There was one person who lost weight by changing their diet alone and nine others who underwent bariatric surgery. The majority of patients surveyed reported high levels of satisfaction with the results. In **Table 3**, we can see that out of the ten patients who had liposuction-assisted medial thighplasty, two were very satisfied, seven were satisfied, four were neutral, and a single patient was disappointed (**Table 3**). A typical liposuction-assisted medial thighplasty operation took an average of 125.79 minutes, and patients typically stayed in the hospital for an average of 1.74 days after the treatment, according to the study's results.

Table 2: Characteristics of studied patients.

	N= 14
Age (years)	48.42 ± 12.92
Sex	
Male	2 (14.3%)
Female	12 (85.7%)
BMI (kg/m ²)	27.42 ± 2.90
Post-MWL	10 (71.4%)
Previous BCS	12 (85.7%)
Combined with other procedures	1 (7.1%)

Data expressed as frequency (percentage) mean (SD). MWL: Massive Weight Loss.

Table 3: Patient satisfaction.

	N= 14
Excellent	2 (14.3%)
Good	7 (50%)
Fair	4 (28.6%)
Poor	1 (7.1%)

Notably, according to **Table 4**, the average volume of lipoaspirate retrieved from both thighs was 989.28 cc, with a range of 200 to 2100 cc. The findings include important information about the procedure,

such as how long the operation took, how long the patient had to remain in the hospital, and how much lipoaspirate was taken from the thighs.

Table 4: Amount of lipoaspirate, duration of procedure and length of hospital stay.

	N= 14
Duration of procedure (minute)	125.79 ± 14.07
Amount of lipoaspirate (cc)	989.28 ± 148.84
Length of stay (days)	1.74 ± 0.56

Data expressed as mean (SD)

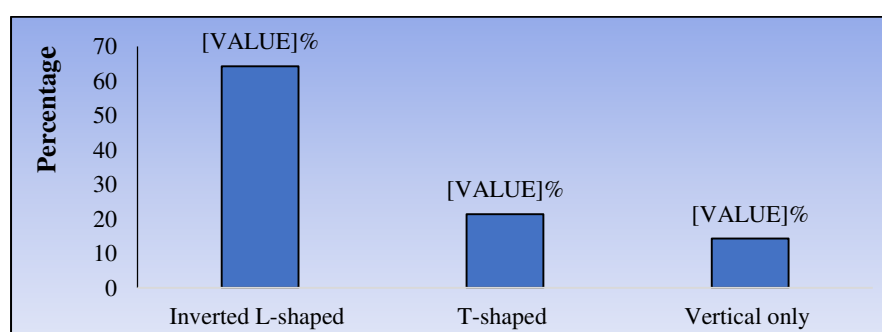
The results showed that the average width of vertically resected skin was 13.29 cm, with a range of 11 to 16 cm (**Table 5**). Regarding the incision design,

an inverted L-shaped incision was performed on 64.3% of the patients. **Table 5** and **Fig. 6** show that 21.4% of instances had a T-shaped incision, whereas 14.3% had an incision that was vertical only.

Table 5: Width of vertically resected skin and incision pattern.

	N= 14
Mean width of resected skin (cm)	13.29 ± 1.67
Incision pattern	
Inverted L-shaped	9 (64.3%)
T-shaped	3 (21.4%)
Vertical only	2 (14.3%)

Data expressed as mean (SD), frequency (percentage).

**Fig. 6:** Incision pattern.

Frequency of complications

The research found that seven patients, or 50% of the total, had problems after liposuction-assisted medial thighplasty. **Table 6** and **Fig. 7** shows that the most prevalent complication was wound dehiscence, which occurred in 35.7% of cases. Hyper-

trophic scar formation followed at 21.4%, seroma at 14.3%, recurrent ptosis at 7.1%, wound infection at 7.1%, and scar migration at 7.1%. A thromboembolism, hematoma, asymmetry, skin necrosis, or lymphedema did not occur in a single patient.

Table 6: Frequency of complications.

Complications	N= 14
Overall	7 (50%)
Dehiscence	5 (35.7%)
Hypertrophic scarring	3 (21.4%)
Seroma	2 (14.3%)
Recurrent ptosis	1 (7.1%)
Infection	1 (7.1%)
Scar migration	1 (7.1%)
Hematoma	0 (0.0%)
Skin necrosis	0 (0.0%)
Asymmetry	0 (0.0%)
lymphedema	0 (0.0%)
Thromboembolism	0 (0.0%)

Data expressed as frequency (percentage)

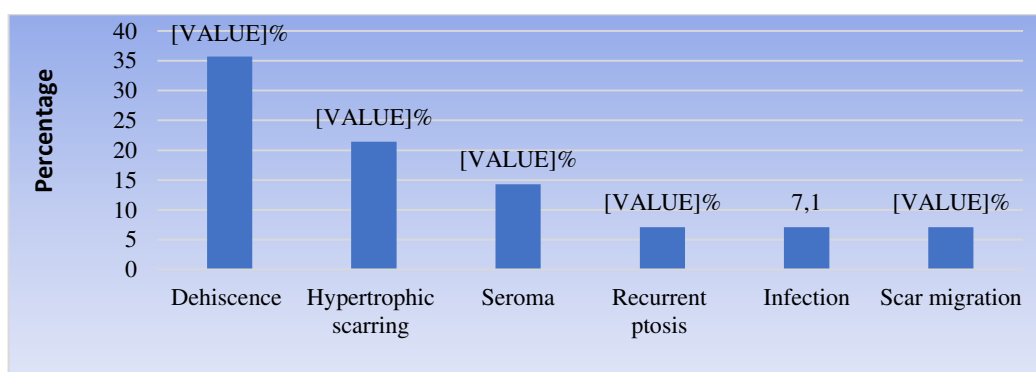


Fig. 7: Frequency of complications among liposuction-assisted medial thigh lift patients.

Mean differences in thigh circumference

Results showed that the average variations in upper, middle, and lower thigh circumferences were 3.57 ± 1.50 , 4.42 ± 1.89 , and 2.50 ± 1.17 cm, respectively (**Table 7 & Fig. 8**). A quantitative understanding of the postoperative changes in thigh dimensions after liposuction-assisted medial thighplasty may be gained from these measures.

Table 7: Mean differences in thigh circumference.

Mean difference	(n= 14)
Upper thigh	3.57 ± 1.50 cm
Middle thigh	4.42 ± 1.89 cm
Lower thigh	2.50 ± 1.17 cm

Data expressed as mean (SD)

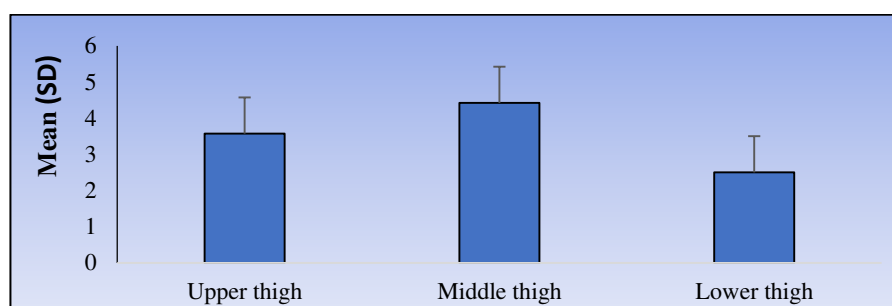


Fig. 8: Mean differences in thigh circumference among studied patients.

Correlation between the amount of lipoaspirate and mean difference in thigh circumference

A significant positive link between the quantity of lipoaspirate and the mean differences in both upper ($r = 0.75$, $p = 0.001$) and middle ($r = 0.77$, $p = 0.001$)

thigh circumferences was shown by the study results (Fig. 9 and Fig. 10). Table 8 shows that there was a weak positive connection ($r = 0.12$, $p = 0.68$) between the quantity of lipoaspirate and the mean change in lower thigh circumference.

Table 8: Correlation between the amount of lipoaspirate and mean differences in thigh circumference.

Mean difference	(n= 14)
Upper thigh circumference	0.75 (0.001)
Middle thigh circumference	0.77 (0.001)
Lower thigh circumference	0.12 (0.68)

Data expressed as r value (p value). P value was significant if < 0.05

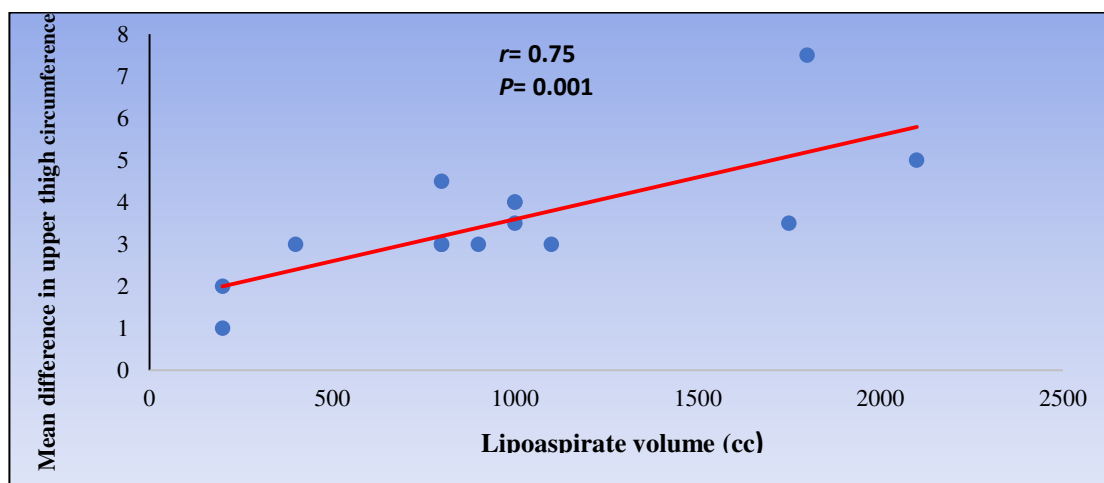


Fig. 9: Correlation between lipoaspirate and mean difference in upper thigh circumference.

Correlation between width of resected skin and mean differences in thigh circumference

According to Table 9, there were no statistically significant relationships between the breadth of the

removed skin and the average differences in upper, middle, and lower thigh circumferences ($r = 0.30$, $p = 0.29$, $r = 0.21$, $p = 0.45$, and $r = 0.10$, $p = 0.73$ respectively).

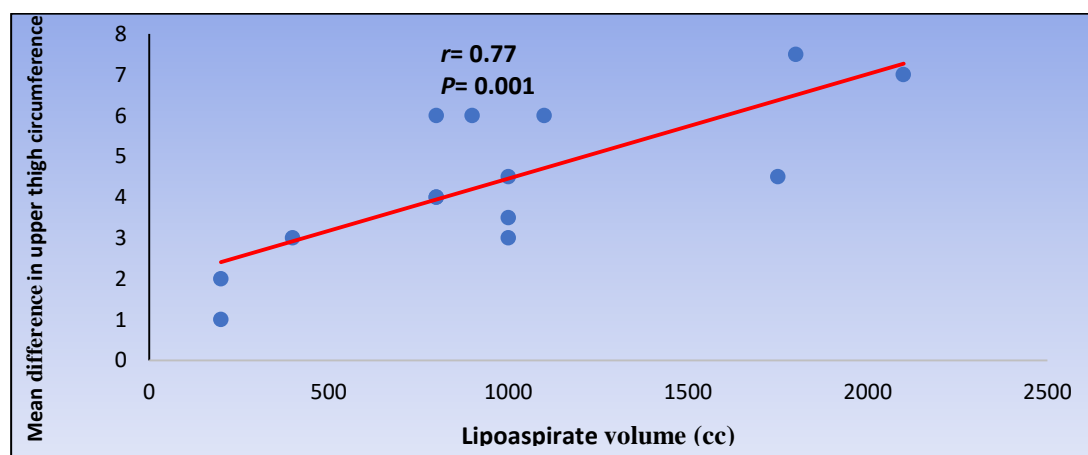


Fig. 10: Correlation between lipoaspirate and mean difference in middle thigh circumference.

Table 9: Correlation between width of resected skin and mean differences in thigh circumference.

	(n= 14)
Upper thigh	0.30 (0.29)
Middle thigh	0.21 (0.45)
Lower thigh	0.10 (0.73)

Data expressed as r value (p value). P value was significant if < 0.05

Association between preoperative BMI and occurrence of complications (n= 14)

There was no significant difference in the baseline preoperative BMI between patients who had issues after surgery and those who did not, according to the study (27.40 ± 4.15 vs. 27.85 ± 2.51 kg/m²; $p=0.77$), as shown in **Table 10**. This finding implies

that the presence of problems after liposuction-assisted medial thighplasty was not exclusively predicted by baseline BMI. Investigating this correlation may shed light on the variables that may affect surgical complications and outcomes in connection to patients' baseline body mass index.

Table 10: Complications and preoperative BMI.

	Mean $\pm$ SD
No complications (n= 7)	27.40 ± 4.15
Complications (n= 7)	27.85 ± 2.51
P value	0.77

Data expressed as mean (SD). P value was significant if < 0.05

Case presentation



Fig. 11: A 42-year-old woman who underwent sleeve gastrectomy and lost about 50 kg presented with grade II PRS medial thigh deformity and underwent inverted L-shaped liposuction-assisted medial thighplasty.

A&B: preoperative A: anteroposterior view. B: posteroanterior view.
C&D: 3 months postoperative C: anteroposterior view. D: posteroanterior view.



Fig. 12: A 52-year-old woman who underwent sleeve gastrectomy and lost 65 kg presented with grade II PRS medial thigh deformity and underwent inverted L-shaped liposuction-assisted medial thighplasty

A&B: preoperative A: anteroposterior view. B: posteroanterior view.
C&D: 3 months postoperative C: anteroposterior view. D: posteroanterior view.

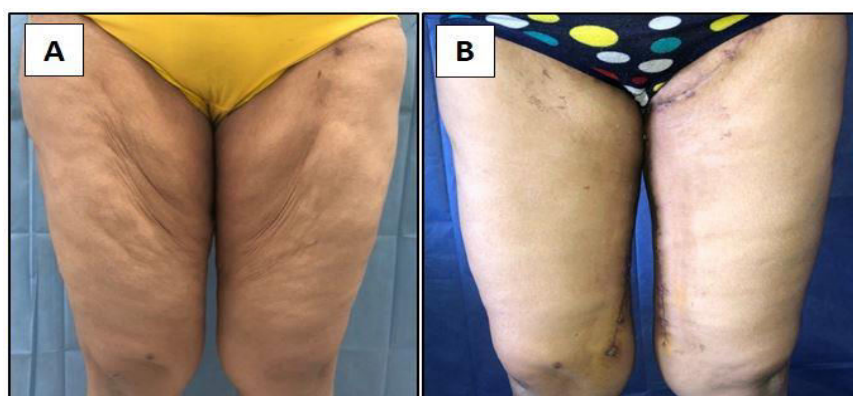


Fig. 13: A 21-year-old woman who underwent one anastomosis gastric bypass and lost 62 kg presented with grade III PRS medial thigh deformity and underwent inverted L-shaped liposuction assisted medial thighplasty

A: preoperative anterior view.

B: postoperative anterior view (Note the scar migration developed in the upper left thigh).

DISCUSSION:

The Pittsburgh Rating Scale (PRS) classifies abnormalities into three degrees: non-deflated, mixed, and deflated forms; thigh lift treatments are essential for removing extra skin after major weight reduction. Patients with PRS grades II and III, namely those with moderate to severe extra skin, were the primary focus of this investigation. Complications like as vulvar distortion, vascular difficulties, lymphatic abnormalities, and early ptosis recurrence have led to several revisions to the medial thigh lift, which Lewis first proposed more than 60 years ago. Lockwood devised the method of superficial fascial suspension, which is especially useful in horizontal surgeries, to alleviate these difficulties (Labardi *et al.*, 2012). Our study's participants averaged 48.42 years of age, with 12 of the 14 participants being female and a mean BMI of 27.42 kg/m². At 84.7%, abdominoplasty was the most prevalent procedure. Notably, nine of the total 14 patients were post-bariatric, demonstrating how often there were cases of substantial weight loss. The results demonstrated a spectrum of patient satisfaction levels, ranging from very delighted to extremely unhappy. After surgery, measuring the circumference of the thighs was more strongly correlated with lipoaspirate volume than with the width of the skin that was removed, indicating that this variable should be included in the development of future objective assessments. Among the patients who had complications, wound dehiscence was the underlying cause in 35.7% of those cases. Beyond conventional liposuction and into more complex procedures like modified stages, medial thigh lifts can be useful comparisons for

future studies. An extensive study conducted by our team assessed the outcomes of liposuction assisted medial thigh lift procedures via a combination of methods. Fundamental components of our assessment were patient satisfaction, objective measures of postoperative thigh circumference changes, and their relationship with the quantity of fat aspirate and breadth of vertically resected skin. The results provide light on the challenges of reaching the best possible results for this group of patients. The results showed a wide range of replies when we asked participants about their level of satisfaction with the outcomes; half were somewhat satisfied, four were fair or mildly satisfied, two were very satisfied, and one was dissatisfied. The wide variety of answers highlights how individual patients' experiences after medial thigh lifts are.

Our investigation into the quantitative components of the outcomes was made possible by objectively assessing the variations in postoperative thigh circumference. The quantity of lipoaspirate was significantly correlated with the postoperative difference in thigh circumference ($r=0.77$, p value= 0.001). Unexpectedly, there was a much lesser connection ($r=0.21$, $p=0.45$) with the quantity of skin that was removed. This fascinating discovery implies that the skin's elastic characteristics were vital and that skin resections mostly affected the skin's appearance, fixing problems with folding and abnormalities rather than significantly reducing size. The findings may be better understood in the light of a 2011 prospective research by Modolin MLA *et al.* who measured thigh volumes both before and after thigh-

plasty. Despite the fact that this research proved a geometric decrease in thigh volume after medial and lateral thigh lift procedures, it failed to examine the precise correlation between size reduction and the quantity of fat aspirate or skin removed (Modolin *et al.*, 2011). In this comprehensive study, we carefully evaluated the rates of complications related to medial thigh lift surgeries, with the goal of providing useful information about the difficulties and differences in results in this particular surgical setting. The total complication rate that our research found was 50%, which is in line with the typical range that has been seen in similar studies. The majority of our patients (35.7%) had wound dehiscence, which was carefully controlled since its severity did not need any further procedures. Wound dehiscence was one of 39.6% of complications found in a 2014 retrospective case study by (Bertheuil *et al.*, 2014). An important takeaway from medial thigh lift procedures is the high rate of wound dehiscence. Hypertrophic scarring affected 21.4% of patients, making it the second most prevalent result, contrary to the trend in comparable studies. While seroma is more common, hypertrophic scarring is a real concern in postoperative treatment for medial thigh lift procedures and further highlights their complexity. The removal of proximal right-angled cuts was a clever adjustment to our method, especially at the intersection of the L-shaped pattern's horizontal and vertical incisions. This alteration was spurred by the increased risk of local wound dehiscence owing to the moist environment and the fact that movement in this region is inevitable. This, in turn, might induce skin necrosis at the margins. Georg and colleagues, (2016) studied 30 people to determine the efficacy of medial thigh lifts with liposuction. With a total complication rate of 36%, the group who had liposuction in addition to excision did not have an increase in wound dehiscence or wound infection. Georg *et al.* demonstrated that liposuction significantly improved limb size/ circumference reduction, patient happiness, and esthetic results. The inability to explicitly evaluate objective criteria was a consequence of their study being retroactive (Schmidt *et al.*, 2016). This data contradicts the results of Gusenoff *et al.* (2015), who found that liposuction-assisted thighplasty was related to a higher risk of infection (68%, 72 out of 106 patients). A full-length vertical incision was linked to the largest number of problems, with wound dehiscence being the most common

(Gusenoff *et al.*, 2015). Sisti *et al.* (2015) used the phrases "medial thighplasty," "medial thigh lifting," and "technique" in their review research. According to a systematic review of sixteen papers published between 1988 and 2015, the most common postoperative complications after medial thigh lift procedures were wound dehiscence and seroma (Sisti *et al.*, 2015). Previous studies had shown that a higher body mass index (BMI) before surgery had a negative effect on postoperative outcomes; however, this study revealed no such correlation. This finding contradicts earlier claims by showing how multifaceted the causes of postoperative problems are. Patients with a higher body mass index (BMI) before surgery and a substantial reduction in weight were more likely to have medial thighplasty complications (Bertheuil *et al.*, 2015).

Pavan *et al.* (2017) presented new parameters that may predict surgical complications and patient outcomes. Patient's postoperative care needs are affected by a variety of factors, including cosmetic treatments, weight reduction strategies, and the existence or absence of prior excisional surgeries (e.g., Brachioplasty, abdominoplasty, or mastopexy) (Pavan *et al.*, 2017). Researching the superficial lymphatic networks, great saphenous vein branches, and the intricacies of medial thigh lift surgery requires caution. Tourani *et al.* (2014) evaluated lymphoscintigraphy and found that thigh lifts change lymphatic outflow from the lower extremities. Recurring lymphomas need surgical removal and percutaneous draining, according to (Tourani *et al.*, 2014). Additionally, Tourani *et al.* (2014) examined the superficial lymphatics of the lower leg in great detail, focusing on the superficial collectors of the ventromedial bundle at the level of the superficial fascia and below it. Tourani *et al.* (2014) suggested a careful method that involves aggressive liposuction followed by skin excision to preserve lymphatic function after medial thigh lifts (Tourani *et al.*, 2014). Similarly, in 2015, Bertheuil *et al.* questioned whether liposuction during a medial thigh lift may alleviate persistent edema while protecting the connective tissue-containing vascular and lymphatic network (Bertheuil *et al.*, 2015). In 2016, Eduardo and colleagues conducted research on seven patients who had a medial thigh lift with liposuction assistance. They found that wound healing issues improved, and the seroma rate was almost nonexistent. The wound healing issues were common, but each

one was little and easily addressed with caution (Eduardo MC, 2016).

However, the inherent drawbacks to our study should not be disregarded. One fundamental downside is that it can't be compared to the modified phases medial thigh lift approach. We can't get a whole picture of the outcomes and relative merits of the two approaches without comparing them. Incorporating such comparative assessments into future research initiatives could help to provide a more balanced perspective of the advantages and disadvantages of different surgical methods. Another limitation of our study is that it only included traditional liposuction techniques. The potential for improved skin redraping prompted discussions about including third-generation ultrasound-assisted liposuction techniques in future studies. This is based on the well-documented benefits of ultra-sound-assisted liposuction, which extend beyond just eliminating fat. Improved skin retraction and less blood loss during liposuction were the results of randomized controlled trials (Nagy & Vanek Jr, 2012) this demonstrates that our previously described surgical procedure, when combined with ultrasound assisted liposuction, has a strong possibility of being successful.

CONCLUSION:

To conclude, the medial thigh lift is quite popular, especially among post-bariatric patients who are dealing with functional impairment, frequent skin infections, and emotional anguish due to extra skin on the inner thighs. There is a significant rate of postoperative problems connected with the surgery despite its broad usage. The intricate nature of the elements at play is shown by our results, which highlight how difficult it is to forecast patient outcomes and the development of surgical complications. It is critical to take into account a whole range of factors impacting postoperative outcomes rather than relying on a single-parameter approach. Every patient's wants and requirements should be carefully considered before surgery. Our suggested categorization into two groups - those hoping to increase their aesthetics and wardrobe freedom and those looking to improve their skin condition, physical dynamics and cleanliness via surgery- offers a useful foundation. When it comes to the former, one important factor to consider is the quantity of fat that is aspirated, which is directly related to the priority

of reducing size via comprehensive liposuction. The second group, on the other hand, has their skin looked better and unsightly folds removed by excisional operations. In order to choose the best surgical method, this patient centred categorization comes before the clinical evaluation of abnormalities. Overall, our findings highlight the need for careful and individual consideration when making decisions on medial thigh lift surgeries. The goal is to improve the cosmetic and functional results of this surgical procedure by tailoring treatments to each patient's demands and traits.

ACKNOWLEDGEMENT:

I express my deepest gratitude to the Assiut University.

CONFLICTS OF INTEREST:

Authors do not have any conflicts of interest.

REFERENCES:

- 1) Afshari, A., Gupta, V., & Higdon, K. K. (2016). Preoperative risk factors and complication rates of thighplasty: analysis of 1,493 patients. *Aesthetic Surgery J.*, **36**(8), 897-907. <https://doi.org/10.1093/asj/sjv275>
- 2) Almomani M., and Almomani M. (2024). Comprehensive study on musculoskeletal injuries among swimmers in Jordan: causes, effects, and prevention strategies, *Eur. J. Med. Health Sci.*, **6**(1), 20-29. <https://doi.org/10.34104/ejmhs.024.020029>
- 3) Bertheuil, N., Thienot, S., & Watier, E. (2014). Medial thighplasty after massive weight loss: are there any risk factors for postoperative complications? *Aesthetic plastic surgery*, **38**, 63-68.
- 4) Bertheuil, N., Watier, E., & Chaput, B. (2015). Medial thigh lift in the massive weight loss population: Outcomes and complications. *Plastic and reconstructive surgery*, **136**(1), 110e-111e.
- 5) Biswas A, Rahman MS, Sikder MKU. (2021). Assessment of radiation risk on healthcare workers and public in & around two largest hospital campuses of Bangladesh, *Eur. J. Med. Health Sci.*, **3**(3), 48-57. <https://doi.org/10.34104/ejmhs.021.048057>
- 6) Capella, J. F., & Matarasso, A. (2016). Management of the postbariatric medial thigh deformity. *Plastic and reconstructive surgery*, **137**(5), 1434-1446.

- 7) Di Pietro, V., Gianfranco, M. C., & Gentile, P. (2019). Medial thigh contouring in massive weight loss: A liposuction-assisted medial thigh lift. *World journal of plastic surgery*, **8**(2), 171.
- 8) Eduardo MC, M. D. S. a. T. B. (2016). Our experience in body contouring surgery after massive weight loss: Most performed treatments and complications. *Adv Plast Reconstr Surg*.
- 9) Gusenoff, J. A., Coon, D., & Rubin, J. P. (2015). Medial thigh lift in the massive weight loss population: outcomes and complications. *Plastic and reconstructive surgery*, **135**(1), 98-106.
<https://doi.org/10.1097/prs.0000000000000772>
- 10) Khan, U. D. (2021). Applications and Limitations of Suction Assisted Transverse Medial Thigh Lift.
- 11) Kitzinger, H. B., Abayev, S., & Frey, M. (2012). After massive weight loss: patients' expectations of body contouring surgery. *Obesity surgery*, **22**, 544-548.
- 12) Labardi, L., Gentile, P., & Cervelli, V. (2012). Medial thighplasty: horizontal and vertical procedures after massive weight loss. *J. of cutaneous and aesthetic surgery*, **5**(1), 20.
- 13) Mocquard, C., Chaput, B., & Bertheuil, N. (2020). Does medial thighplasty improve the sexual quality of life of patient after massive weight sequelae? *Obesity surgery*, **30**, 1147-1149.
- 14) Modolin, M. L. A., Cintra Junior, W., & Ferreira, M. C. (2011). Post-bariatric thighplasty: result assessment. *Revista Brasileira de Cirurgia Plástica*, **26**, 512-517.
- 15) Nagy, M. W., & Vanek Jr, P. F. (2012). A multicenter, prospective, randomized, single-blind, controlled clinical trial comparing VASER-assisted lipoplasty and suction-assisted lipoplasty. *Plastic and reconstructive surgery*, **129**(4), 681e-689e.
<https://doi.org/10.1097/PRS.0b013e3182442274>
- 16) Pavan, C., Marini, M., & Vindigni, V. (2017). Psychological and psychiatric traits in post-bariatric patients asking for body-contouring surgery. *Aesthetic plastic surgery*, **41**, 90-97.
- 17) Schmidt, M., Pollhammer, M. S., & Huemer, G. M. (2016). Concomitant liposuction reduces complications of vertical medial thigh lift in massive weight loss patients. *Plastic and reconstructive surgery*, **137**(6), 1748-1757.
- 18) Sisti, A., Cuomo, R., & Nisi, G. (2015). Complications associated with medial thigh lift: a comprehensive literature review. *J. of cutaneous and aesthetic surgery*, **8**(4), 191.
- 19) Song, A. Y., Jean, R. D., & Rubin, J. P. (2005). A classification of contour deformities after bariatric weight loss: the Pittsburgh Rating Scale. *Plastic and reconstructive surgery*, **116**(5), 1535-1544.
<https://doi.org/10.1097/01.prs.0000182606.92069.13>
- 20) Tasfap, S. (2012). Cosmetic Surgery National Data Bank Statistics. In.
- 21) Tourani, S. S., Taylor, G. I., & Ashton, M. W. (2014). Understanding the three-dimensional anatomy of the superficial lymphatics of the limbs. *Plastic and reconstructive surgery*, **134**(5), 1065-1074.
- 22) Wolfe, B. M., Kvach, E., & Eckel, R. H. (2016). Treatment of obesity: weight loss and bariatric surgery. *Circulation research*, **118**(11), 1844-1855.
<https://doi.org/10.1161/CIRCRESAHA.116.307591>

Citation: Gamal AM, Matos E, Medeiros R, Elsonbaty M, Makboul M, and Wagdi Ali WM. (2024). Liposuction assisted medial thighplasty: an objective assessment using thigh circumference. *Eur. J. Med. Health Sci.*, **6**(3), 57-69. <https://doi.org/10.34104/ejmhs.024.057069> 