

Miniscar Abdominoplasty Combined with Suction Lipectomy, our Experience with a New Technique

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ABSTRACT

Current miniscar abdominoplasty techniques to reshape the abdomen are carried on a trend for downsizing incisions in some patients with limited exposure and skin redundancy. The aim of this work is to evaluate the periumbilic approach for body contouring in 20 patients with initial skin laxity, moderate to severe lipodystrophy, musculoaponeurotic diastasis and no concern for abdominal stretch marks or scars. The procedure consists of trunk liposuction and midline vertical musculoaponeurotic plication through periumbilic incision. Postoperatively, we recorded seroma (5%), sense of epigastric fullness (9.23%), abdominal irregularities (high) needed further liposuction (9%) with no abdominal sagging, major sensory loss or musculoaponeurotic plication breakdown. On follow-up, we detected hypertrophic scars (5.3%) and (0.5%) of the treated cases asked for further limited suprapubic skin excision. We concluded that, the periumbilic approach for body contouring in selected cases of abdominal deformities is safe alternative to classic abdominoplasty, the scar is hidden in the umbilic pit, permits excellent body contouring with minimal complications, the surgical procedure is easier and the convalescence is much shorter with less hospital stay.

INTRODUCTION

The ideal abdominal aesthetics include, tight trunk and inguinal tissues with deep midline concavity, central tissues not as tight with mild convexity of hypogastrium and mild concavity of epigastrium, midline epigastrium valley between rectus abdominis muscles and vertically oriented umbilicus [1-4]. The main causes of contour deformities of the abdomen are obesity, flaccidity of the muscles, localized lipodystrophy and sequelae of trauma, pregnancy or previous surgery that result in scars, hernias and eventration [5]. During the past 25 years, the trend in abdominal contouring is toward the increased use of liposuction as both primary and adjunctive technique and toward shorter abdominoplasty incisions [6,7,8].

Alternative abdominoplasty techniques have included limiting the undermining to central triangle in standard abdominoplasties which

are combined with or without liposuction of trunk fatty deposits in procedures known as miniplasty and modified abdominoplasties [9,10,11]. Although use of the shortest effective incision in body contouring surgery is undeniable, this primarily is limited to patients with initial or isolated abdominal laxity without trunk fatty deposits [12]. No one technique provides an optimal outcome for patients and systematic evaluation is essential to provide the optimal surgical intervention [2] and the key anatomic features include the elasticity of abdominal skin, distribution of extraneous abdominal fatty tissue, presence of striae gravidarum and location of anteroposterior bulging secondary to musculoaponeurotic diastasis or hernia [13,14,15].

The aim of this study is to evaluate surgical technique for miniscar abdominoplasty through periumbilic incision in patients with initial skin laxity, moderate fatty tissue deposits, musculoaponeurotic diastasis with no concern for abdominal stretch marks or previous scars.

PATIENTS AND METHODS

The study included 20 patients with abdominal myoaponeurotic deformities who were admitted to Plastic and Reconstructive Surgery Unit, Tanta University Hospital for abdominoplasty through periumbilic incision.

The Selection Criteria for the Studied Technique were:

- Mini skin flaccidity.
- Musculoaponeurotic diastasis.
- Moderate to severe lipodystrophy.
- No concern for the presence of stretch marks or scars of previous operations.
- The patient prefers avoiding the long transverse classic abdominoplasty scar (Fig. 1).

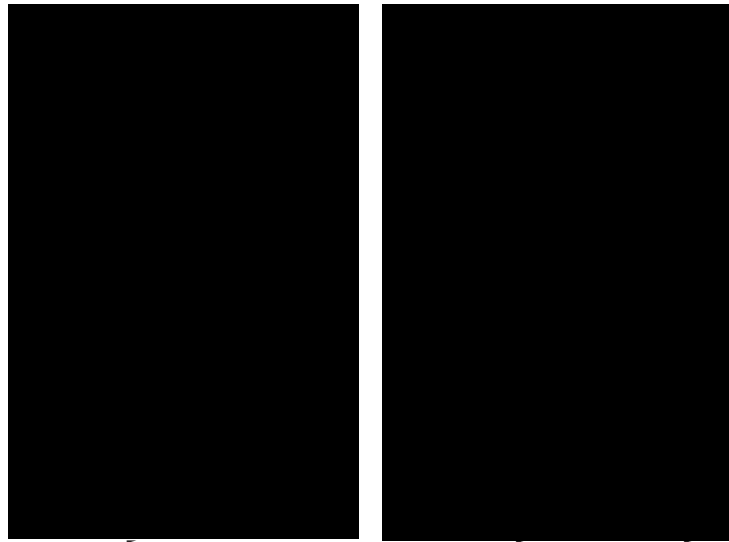


Fig. 1. Female patient with distal rectus abdominis muscle laxity and suprapubic skin redundancy.

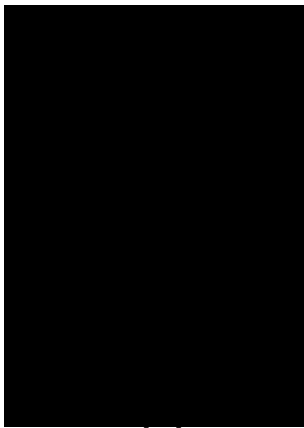


Fig. 2. Periumbilic incision with good retraction and fascial plication.

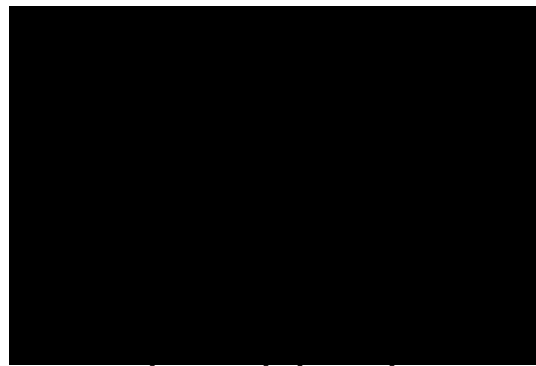


Fig. 3. On table, periumbilic wound closed (sutured first on the top).



Fig. 4. Same female patient in Fig. 1 with immediate postop. results (umbilical drainage is secured).

The amount, distribution of the deposits and the contour were determined in the standing and supine positions. The patients were asked to relax and the contour of the abdomen was examined, then asked to tighten the abdomen by muscle contraction and any change in the contour was marked.

Operative Technique:

All patients had general anesthesia with prophylactic antibiotic (1st generation cephalosporin).

- 1- Periumbilic incision around the umbilicus and within the umbilical pit was done.
- 2- Tumescent liposuction through the periumbilic incision was performed for the fatty layers (initially superficial and progressively deep to Scarpa's fascia).
- 3- After adequate liposuction and through the periumbilic incision, dissection was done for the central abdomen up to xiphisternum and down to the supr pubic crease, good retraction and the omentum was exposed the use of skin plane of the abdomen and the use of polypropylene continuous suturing to pick up the use of skin of the abdomen starting from the umbilicus upwards to xiphisternum and returning back to just above the umbilicus a second layer of pick up. Again a sutured pick up of the umbilicus down to the marked supr pubic crease and returned back to finish the pick up in 2-3 layers at the umbilical end of the midline (Fig. 2).
- 4- The quadriceps was secured coming out from separate site at the lower abdomen.
- 5- The umbilical stalk was shortened to the rectus fascia with 3 polyglactin (vicryl), sutured and the turned skin at the periumbilic incision from the friction of the liposuction cannula and the wound was closed by polypropylene interrupted sutures (Fig. 3).

Postoperative, adhesive elastic tape was applied for two weeks, then compression garment was used for further 3 months.

Follow up every 2 weeks for the first month, then monthly for the next months as our routine.

RESULTS

Female were the majority (92.3%) and age of the operated patients ranged from 22 to 45 years (Fig. 1). The average amount of the filling solution instilled was 2 c.c and the average aspirate was

9 c.c. Early postoperative, we reported seroma in 3 patients (.5%), 5 patients (9.23%) were complaining of sense of epigastric fullness which relieved spontaneously but no skin sore or wound infection were detected. Within the first months of follow up, three patients (.5%) required initial skin excision through a transverse supr pubic incision and two cases (.9%) asked for minor further liposuction for trunk irregularities which was done under local anesthesia and day surgery. By the end of the first months follow up, we reported hypertrophic scarring of the periumbilic incision in 3 cases (5.3%) that was managed by intralesion corticosteroid while we did not record any use of skin repair medication (Table).

Table Postoperative local complications.

Complication	No.	%
Seroma	3	.5
Skin sore		
Sense of epigastric fullness	5	9.23
Abdominal irregularities	2	.9
Hypertrophic scarring of the incision		5.3
The need for limited postoperative skin excision.	3	.5

DISCUSSION

Localized fat deposits and skin laxity are so often resistant to the most sincere efforts in diet and sport activities. Depending on the individual morphology, skin quality and laxity, the procedure of abdominoplasty with various contour restoring techniques was chosen [2,16]. Currently minimally invasive techniques are carried on as trend for downsizing incisions and minimizing the use of these abdominoplasty procedures in some patients with limited exposure and skin retraction [1,7]. According to recent statistics, abdominoplasty had the most significant increase (%) of the cosmetic surgery procedures for the previous years, and liposuction remained the most popular esthetic surgery procedure in both genders [17]. Tumescent liposuction of the abdomen is not only removes the excess adipose tissue of the deeper loose fibrous network but also results in superficial skin contraction to further define the torso [18,19,20]. The selected twenty six cases in the present work had initial skin laxity but needed adipose tissue removal and fascial pick up for body contouring were the criteria of our study. Actually they had the strong desire to avoid long incision of the classic surgical abdominoplasty. The principle technique of the present surgical intervention included utilizing liposuction both aggressively for

the fatty layer deep to the Scarpa's fasci and ini-ly to the superficial fatty layer to avoid contour irregularities and skin complications, in addition to the use of sci-plication of the abdomen through periumbilic incision. As the restricted aggressive liposuction to the deep fatty layer, our patients didn't experience the potential risks of skin necrosis, blistering or scarring when the used liposuction cannula came closer to the dermis. Early postoperative we detected an increase in amount of serous collection in .5 % of our patients which was corrected by repeated aspiration and compression garment. Nohs and others [21] reported seroma in .3% and Persichetti and his colleagues [22] found such complication in .2% of their cases and the increased incidence of seroma formation among our cases may be attributed to our procedure, because earlier in our study we didn't use the vacuum drainage, depending on the immediate postoperative elastoplastic pressure garment to abolish the dead space that developed from central undermining and liposuction of the flanks. On follow up, we noticed do in contour irregularities in .9% of the corrected cases which were managed by further liposuction under local anesthesia and surgery procedure. The used technique in this study preserved neurovascular structures that would be disrupted with the classic abdominoplasty, lessening the chance for skin sloughing, flap necrosis and numbness and even anesthesia of the abdomen post classic abdominoplasty technique [23]. By the end of the first postoperative months we noticed hypertrophic scarring of the periumbilic incision in 5.3 % of our patients which was managed by intralesional corticosteroid and pressure garment while the excised redundant skin through a transverse suprapubic incision under local anesthesia in three patients (.5 %). Rectus abdominis laxity was managed by sci-plication with polypropylene continuous suturing using curved retractor without the need of lighted retractors or the use of endoscopes as in other studies [24,25,26], because the skin elasticity facilitated suction lipectomy allowed retraction of the periumbilic skin superiorly up to the xiphisternum and inferiorly to the suprapubic region in corrected cases [3]. We did not report any use of sci-plication reduction among our corrected cases because we used non-absorbable monofilament sutures and this was recently confirmed by Nohs et al., with computed tomographic scans [21]. Five patients (9.23%) of the corrected cases were complaining the time of sense of fullness in the epigastric region which reduced by time and pressure garment and our results were matched with that of D

and his colleagues [27] who used the combined liposuction and rectus fasci-plication through periumbilic incision and reported seroma in 5. % with no neurosensory loss, skin slough or burn and .2% of patients needed minor surgery for seroma revision or further liposuction for do in contour irregularities.

After one year follow up, the contour and silhouette were greatly improved and the suprapubic bulge which was complicated by some patients disappeared that confirmed the results of the earlier work of Shestak et al. [28] who used short scar technique for infrumbilic use of sci-plication with endoscopic extension to the subxiphoid level if needed and reported efficient correction of the abdomen during.

We concluded that, suction lipectomy of the trunk with anterior rectus fasci-plication through periumbilic incision in selected cases with do in contour disfigurement which is associated with skin laxity, older age do in dystrophy, use of sci-diastasis and although we have no concern for the present stretch marks, is as feasible alternative to classic abdominoplasty that provides excellent body contouring in single surgical procedure with minimal complications. The results in terms of skin improvement are superior when compared with full open classic abdominoplasty, but cosmetically the scar is hidden, the surgical procedure is easier and the convalescence is much shorter with less hospital stay.

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