INTRODUCTION

Abdominal wall defects are one of the most frequent consultations in a routine surgical practice; the most frequently used repair techniques are liposuction and abdominoplasty.¹

There are numerous abdominoplasty procedures, and most of them combine circumferential liposuction, rectus placation, and redundant dermo-fat flap resection.² Its practice has been refined over the years, with a decrease in the associated morbidity and mortality rates.³⁻⁴ Nevertheless, there are a significant number of patients who do not need skin resection but present abdominal wall weakness, such as rectus diastasis with or without concomitant ventral hernias. In some of these patients, it is not necessary to remove a dermo-fat flap and they are not willing to accept the rectus plication scar, especially if they have not undergone a cesarean section. The endoscopic technique was used to repair these defects and was combined with circumferential definition liposuction.

PATIENTS AND METHODS

Adequate patient selection is a key element for success, because if the indication is not correct, the abdominal wall defect may be repaired but not the flaccidity nor the redundant abdominal flap.⁵

Indications are divided into absolute and relative. Absolute indications are those in which the technique is performed and there is no need to convert to a conventional abdominoplasty, and the relative indications are those in which the technique may be substituted by a conventional technique because a small dermo-fat flap resection would be needed in any case.²

Indications

Absolute Indications

Patients without minimal skin laxity and moderate fat tissue distribution with:

• small umbilical hernias which can be repaired,
• small epigastric hernias which can be repaired,
• congenital or acquired abdominal wall defects, and
• rectus musculofascial diastasis less than 5 cm.

Relative Indications

Patients with a long distance between the xiphoid and the pubis presented with the abdominal wall defects as mentioned above, but with a small abdominal flap that can be minimally excised and allow for umbilical transposition.

Surgical Technique

Positioning the Patient

The patient is placed supine, using the French laparoscopic cholecystectomy technique; the surgeon stands between the patient’s legs (Fig. 1).⁶

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Related Digital Media are available in the full-text version of the article on www.PRSGlobalOpen.com.
Liposuction with Tumescent Technique under General Anesthesia

Four incisions are done: 1 (T1) on the pubic symphysis; 2 (T2) and 3 (T3) in both iliac fossae; and finally (T4) 1 at the umbilical level. A conventional liposuction is carried out to remove local fat; this is a key to visualize the space for supra-aponeurotic undermining.

Trocar Placement and Cavity Insufflation

A 10-mm trocar is placed through T1, and an angulated camera is introduced; 2 additional 5-mm trocars are placed through T2 and T3. (See figure, Supplemental Digital Content 1, which displays trocar placement and cavity insufflation. A 10-mm trocar placed through T1, and 2 additional 5-mm trocars placed through T2 and T3, http://links.lww.com/PRSGO/B539.)

A supra-aponeurotic pneumatic dissection is carried out with a laparoscopic insufflator. It operates at a 10–30 mm Hg low-flow range and a maximum pressure level of 10–12 mm Hg. (See figure, Supplemental Digital Content 1, http://links.lww.com/PRSGO/B539.) Periodic deflation is recommended to prevent residual subcutaneous emphysema.

Supra-aponeurotic Undermining

The procedure begins at suprapubic level, sectioning the connective tissue and some perforators. It can be carried out with a monopolar hook, scissors, or harmonic scalpel. Undermining is continued cephalad; the rectus aponeurosis is identified and detached from the connective tissue up to the external dihedral rectus angle. (See Video 1 [online], which displays the main steps of endoscopic lipoabdominoplasty shown by the angulated camera.)

The incidental ventral hernias are repaired, and the gaps are closed with absorbable sutures (polyglactin). The umbilicus is detached up to the xiphoid process. Undermining is completed when both rectus muscles are exposed. (See Video 1 [online].)

Medial Rectus Plication

Monofilament synthetic absorbable sutures, such as 1.0 polydioxanone, are advised. Closure begins at the xiphoid process advancing caudally with uninterrupted sutures. Closure is carried out in 3 sections united by intracorporeal knots. The medial rectus plication is completed at the pubic symphysis. (See Video 1 [online].)

Umbilical Reinsertion

Umbilical reinsertion can be performed endoscopically or through T4 with absorbable sutures.

End of the Procedure

In general, we perform a medium to high definition liposuction for better results and leave a drain which is removed through T2 and all incisions are closed.

Endoscopic Conversion Rationale

- Intractable hemorrhage
- Defects not amenable to laparoscopic closure
- Abdominal organs injury
- Intracorporeal laparoscopic knot tying not possible

Postoperative Follow-up

Compression garments and a foam vest are indicated in all cases for 30–90 days. Ultrasound and periodic manual lymphatic drainage massages are essential therapies and complement the surgery. It is indicated to start physiotherapy on the fifth postoperative day.
RESULTS

A total of 17 patients were treated with this technique between 2017 and 2020 (n = 17). Mean age was 38 years old. All were women with postpregnancy recti diastasis (100%). Five had cesarean scars (29.41%). Six presented with concomitant umbilical hernias (35.29%). One presented with an umbilical hernia with an epigastric hernia (5.88%). Definition liposuction was combined in all cases (100%).

Surgical time was estimated excluding liposuction time; therefore, average time was estimated from trocar placement to skin closure. Mean operative time during the learning curve (6 cases) was 113 minutes, and subsequently it dropped to 45 minutes; therefore, the average operative time in this series is 69 minutes.

There were some minor complications. One patient presented with a seroma that required puncture drainage (5.88%), and 1 had a surgical wound infection (5.88%). There were no major complications nor secondary diastasis. All patients showed a high level of satisfaction. The cases analyzed are listed in Table 1.

CONCLUSIONS

This technique shortens operative time, as there are no extensive skin incisions, and reduces postoperative care and postoperative pain. One of the limitations of the procedure is the learning curve, as the operator needs experience and laparoscopic expertise. Loss of the vascular dermal flap is reduced by avoiding extensive skin incisions. As an additional advantage, it provides a better aesthetic result that significantly increases patient’s satisfaction (Fig. 2).

In all cases, it was possible to perform a muscle-enhancing liposuction for better results. (See Video 2 [online], which displays the patient 1 year after surgery: A 38-year-old woman who underwent endoscopic lipoabdominoplasty with a muscle enhancing liposuction.)

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