INTRODUCTION

Since the advent of abdominal lipectomy for aesthetic reasons as early as Pitanguy’s work, many skin excision patterns have been developed. Many patients seeking aesthetic abdominal lipectomy and still growing reaching about 97,988 patients in the United States alone in 2020 according to statistics of the American Society of Plastic surgeons. With describing new techniques of abdominoplasty, skin pattern excision was also slightly modified. These techniques aimed to decrease the impact of dissection and skin excision on abdominal wall vascularity, lymphatics, and venous return. Many authors described the blood supply and angiosomes, such as Huger, Taylor et al, and El-Mrakby and Milner. The concept of lipoabdominoplasty was highlightened by Saldanha et al. Saldanha et al’s lipoabdominoplasty was one of the modern techniques that tried to solve the problem of skin flap vascularity, abdominal lymphatics respecting the anatomy of the abdominal perforators. In this technique, the authors limited the dissection of the tunnel to the medial border of the rectus muscle, allowing for preservation of the rectus muscle perforators. Moreover, they kept the Scarpa fascia adherent to the sheath, without disturbing the sub Scarpa lymphatics. Although dissection is difficult, this technique became more popular, as it minimizes some difficult complications such as skin sloughing and seroma.

In our study, we aim to standardize the abdominoplasty excision pattern for a short, symmetrical scar with waist definition.

PATIENTS AND METHODS

This study was conducted on 22 female patients with mild to moderate skin redundancy over an 18-month period.
period, who underwent lipoabdominoplasty as mentioned in Saldanha’s technique, except for the upper and lower incision. A hexagonal skin excision pattern was applied. The lower incision was marked 7–9 cm from the vulval commissure. A central horizontal line measuring 14 cm centered on the abdominal mid-line was marked. Extension from this line was marked as two oblique lines parallel to the groin crease with 3 cm distance from it to meet the lateral ends of the upper incision. The upper one was decided by the skin pinching test after completion of liposuction and marked as a horizontal line with fixed width 18 cm centered on the patient’s mid abdominal line, and two lateral oblique lines angled to close with lower incision (Fig. 1).

RESULTS
Twenty-two female patients aged between 29 and 52 years underwent lipoabdominoplasty during the period of 18 months. Fourteen patients were postbariatric abdominal skin redundancy patients. Abdominoplasties were done as described previously. Postoperatively, all patients’ wounds healed well with no dehiscence or need for secondary operations. No major complications occurred except for hematoma collection in one patient who needed drainage.

The patients’ satisfaction was high. The resultant scar was short, as compared with other traditional elliptical incisions, with more efficient skin excision. Its lateral end does not extend beyond the mid-axillary line than the preoperative skin redundancy (Fig. 2). More waist definition was and a bilaterally equal mirror image with a symmetrical scar were obtained.

**Takeaways**

**Question**: Long abdominoplasty scar length and asymmetrical scar.

**Findings**: To modify and standardize the upper incision of the abdominoplasty procedure for a better final scar which is shorter, symmetrical, and results in more waist definition.

**Meaning**: More appealing abdominoplasty scar with incision standardization.

![Fig. 1. The proposed pattern of the skin excision, as shown over the preoperative photograph (A). B, Postoperative immediate results.](image1)

![Fig. 2. A, The lateral extension of the skin pattern excision in relation to the mid-axillary line. B, The postoperative results for the patient with the final scar not exceeding the mid-axillary line.](image2)
DISCUSSION

Not many standardization patterns for abdominoplasty incisions were made, owing to the principal of elliptical skin excision patterns described formerly. Subsequent techniques tried to change the pattern so as to increase the lateral skin excision without lengthening the resultant scar. One of the foundations of these techniques was Saldanha et al’s method that described the upper and lower incisions as a central horizontal line with two lateral oblique lines which meet each other at the ends of the scar. In Saldanha et al’s technique, the upper horizontal line was very small, limited to the area between the prospected lateral borders of the divarication, whereas in this study, the horizontal upper line was 18 cm wide. The idea behind this was that increasing the width of the horizontal upper incision recruits more lateral waist skin excision without the need to extend the resultant scar more laterally; moreover, it added tension to the lateral wound without resultant dog ears (Fig. 2). Ramirez in 1999 addressed the problem of lateral skin excess through the U-M abdominoplasty skin excision. He described the upper incision as a lazy M to provide lateral tension and match the length of the lower incision. Although he solved the lateral waist skin redundancy, this led to increase in the width of the resultant scar. (See Video [online], which displays the drawing of the skin excision pattern in relation to the anatomical landmarks.)

The presence of two horizontal lines in this technique makes it easier to close the wound without the need to redistribute the skin, as the upper and lower horizontal lines coalesce with each other with distribution of the 2 cm difference along the lower incision. The lateral oblique upper and lower lines also coalesce without tension (Fig. 2), with the resultant scar not exceeding the mid-axillary line.

CONCLUSION

This technique may add a stone in abdominal contouring, as it involves more lateral and waist skin excision without the need to increase the resultant scar width, and it distributes the tension of closure through previously marked points, making the procedure easier.

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REFERENCES
1. Pitanguy VO. Abdominal lipectomy: An approach to it through an analysis of 300 consecutive cases. Plast Reconstr Surg. 1967;40:384–391.
2. American Society of Plastic Surgeons. 2021. Available at: https://www.plasticsurgery.org/documents/News/Statistics/2020/plasticsurgery-statistics-report-2020.pdf. Accessed February 24, 2022.
3. Edgerton MT, Knorr NJ. Motivational patterns of patients seeking cosmetic (esthetic) surgery. Plast Reconstr Surg. 1971;48:551–557.
4. Huger WE Jr. The anatomic rationale for abdominal lipectomy. Am Surg. 1979;45:612–617.
5. Taylor GI, Waterson PA, Zest RG. The vascular anatomy of the anterior abdominal wall: The basis for flap design. Plast Surg. 1991;5:1–28.
6. El-Mrakby HH, Milner RH. The vascular anatomy of the lower anterior abdominal wall: A microdissection study on the deep inferior epigastric vessels and the perforator branches. Plast Reconstr Surg. 2002;109:539–543; discussion 544.
7. Saldanha OR, Pinto EB, Matos WN Jr, et al. Lipoabdominoplasty without undermining. Aesthet Surg J. 2001;21:518–526.
8. Saldanha OR, De Souza Pinto EB, Mattos WN Jr, et al. Lipoabdominoplasty with selective and safe undermining. Aesthetic Plast Surg. 2003;27:322–327.
9. Saldanha OR. Lipoabdominoplastia. 1st edition. Rio de Janeiro (Brazil): Di-Livros; 2004.
10. Ramirez OM. U-M Abdominoplasty. Aesthet Surg J. 1999;19:279–286.