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Case Report

Inverted abdominoplasty as a reconstructive option in a patient with lipolaser burn sequelae

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ABSTRACT

Burn sequelae secondary to lipolaser procedures pose a therapeutic challenge in plastic surgery due to both aesthetic and functional alterations of the abdominal tissue. We present the case of a 48-year-old female patient with an epigastric burn following lipolaser, resulting in cutaneous deformity, retraction, and pathological scarring. She was successfully treated with an inverted abdominoplasty combined with a lower mini-abdominoplasty. This approach enabled the resection of damaged tissue, redistribution of upper abdominal skin, and improvement of the abdominal contour. The surgical procedure was performed under general anesthesia, lasting 150 minutes, with hospital discharge at 24 hours. Although a new scar was created in the upper abdomen, it was well concealed within the natural inframammary folds. During follow-up, a late complication of keloid scarring was identified and effectively managed with three intralesional triamcinolone injections, without the need for further surgical intervention. Postoperative evolution was satisfactory, achieving both functional recovery and favorable aesthetic outcomes, with improved quality of life and body image perception. This case demonstrates that inverted abdominoplasty is an effective reconstructive option for patients with upper abdominal deformities resulting from inadequately performed aesthetic procedures. When properly indicated, carefully planned, and technically well executed, this technique offers safe and predictable results in the context of burn sequelae, and continues to consolidate its role as a valuable tool within the reconstructive surgical arsenal.

Keywords: Abdominoplasty, Inverted abdominoplasty, Lipolaser sequelae, Abdominal burn

INTRODUCTION

Severe abdominal deformities and surgical sequelae represent a significant challenge for plastic and reconstructive surgeons. These alterations are usually associated with loss of elasticity, skin tissue deficit and structural alterations secondary to previous surgical scars, fibrosis, adhesions, retractions and injuries derived from poorly executed medical or aesthetic procedures.[1] In particular, lipolaser burns have emerged as a common complication in patients undergoing body contouring treatments, especially after prior liposuction. Lipolaser, by using thermal energy to liquefy fat, can cause deep thermal damage to the skin and underlying tissue when not handled properly.[2] As a result, patients may develop hypertrophic scars, fibrosis, hypopigmentation, fat necrosis, and skin retraction, which compromises both the aesthetics and functionality of the abdominal region.[3] The presence of these sequelae can cause irregularities in the contour, tissue rigidity and limitations in skin mobility, affecting the patient's satisfaction with the previous aesthetic procedure and their quality of life.[4] Management of these sequelae requires a personalized reconstructive surgical approach, since fibrosis and skin deficit can limit conventional treatment options.[5] In cases where retraction and fibrosis generate a significant alteration of the abdominal contour, the inverted abdominoplasty is presented as an effective alternative. This technique allows the resection of damaged tissue and the redistribution of the skin of the upper abdomen, taking advantage of the

skin surplus to restore the continuity and quality of the tissue in the affected region.[6] Unlike conventional abdominoplasty, in which the incision is located in the lower part of the abdomen, reverse abdominoplasty uses the inframammary fold as the approach site, minimizing the visibility of the scar and allowing better aesthetic integration.[7] In some cases, reverse abdominoplasty can be combined with complementary techniques, such as mini-lower abdominoplasty, lipograft or the use of skin grafts, in order to improve tissue elasticity and optimize the final result.[8] This comprehensive approach not only seeks to restore the appearance of the abdomen, but also improve the flexibility, mobility and quality of the affected skin, ensuring satisfactory results in both functional and aesthetic terms.[9]

Correct patient selection, meticulous preoperative planning and detailed anatomical knowledge are essential for the success of this procedure, minimizing complications and maximizing patient satisfaction.[10] With the advancement of reconstructive techniques, inverted abdominoplasty continues to consolidate itself as a safe and effective surgical option for the correction of sequelae due to lipolaser burns, allowing for improvement in the body contour and quality of life of patients affected by these complications.[11]

CASE REPORT

A 48-year-old female patient with a history of abdominoplasty in 2023 with lipolaser burn sequelae (Figure 1). She underwent a second abdominal surgery to correct the sequelae, in which an inverted abdominoplasty technique was performed plus a lower mini-abdominoplasty (Figure 3), since the lipolaser burn was in the epigastrium region. The surgery was carried out on July 9, 2024. Due to satisfactory progress, she was discharged after 24 hours, drains were removed after 10 days and sutures were removed after 15 days, as Long-term complication presents a keloid scar treated with 3 sessions of triamcinolone (Figure 2) showing notable improvement, without requiring further surgical management.

Our patient presented one of the most frequent complications due to lipolaser, a burn of subcutaneous tissue in the epigastrium region. A scheduled inverted abdominoplasty was performed under balanced general anesthesia following the technique described in the literature. In addition, the surgical procedure was complemented with a lower mini-abdominoplasty to favour partial resection of the previous unaesthetic keloid scar. The surgery took a surgical time of 150 minutes, the evolution was favorable and the patient was discharged after 24 hours. The results at 3 months were satisfactory, since the sequel due to the lipolaser burn was removed, although a new scar was generated, this was longitudinal and was lost with the continuation of the inframammary folds. The late complication of keloid scar was resolved with 3 sessions of triamcinolone. The patient showed a favorable evolution after the surgical procedure, with an adequate recovery aligned with the established therapeutic objectives. Furthermore, a satisfactory aesthetic result was achieved.

Figure 1: Preoperative photos with burn in the epigastrium as a consequence of lipolaser.

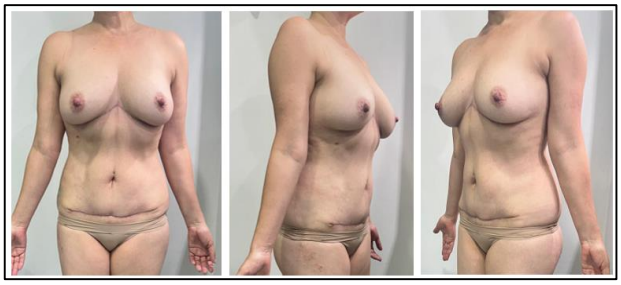

Figure 2: Post-surgical wounds 3 months after surgery.

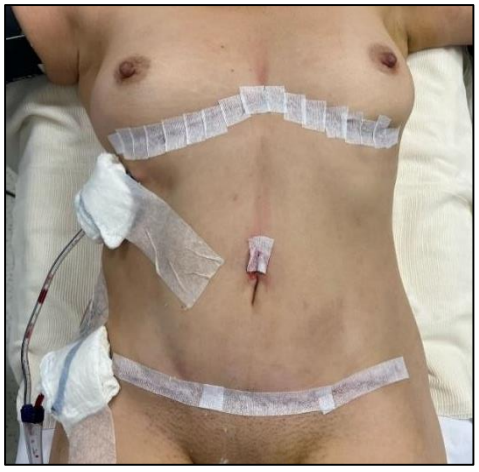

Figure 3: Immediate post-surgery with drains.

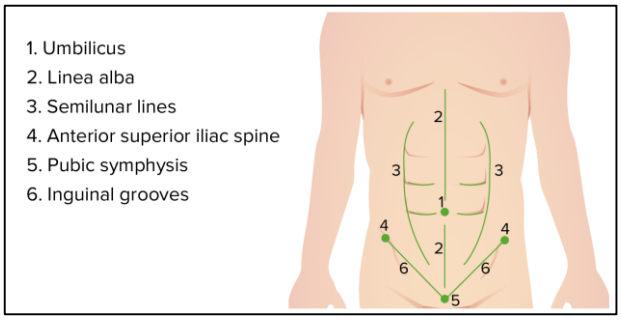

Figure 4: Bone reference points in the abdomen.

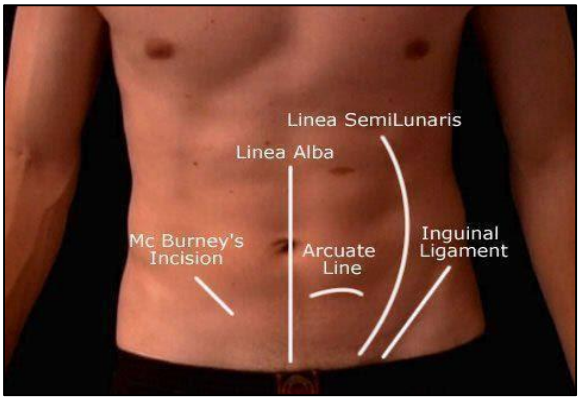

Figure 5: Soft tissue landmarks in the abdomen.

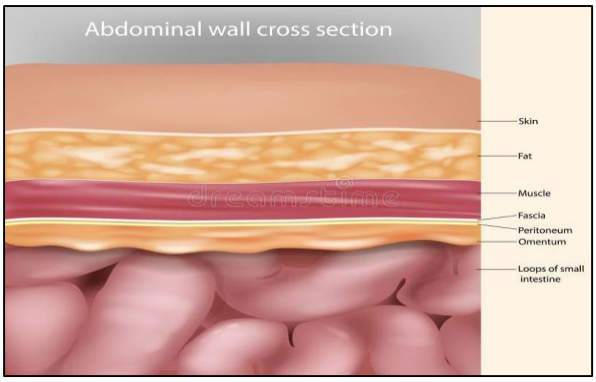

Figure 6: Superficial layers of the abdomen.

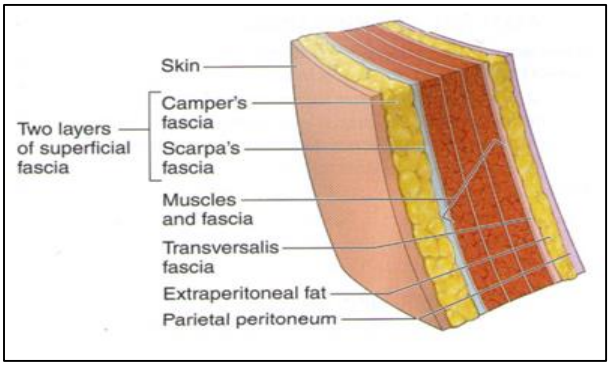

Figure 7: Superficial layers of the abdomen.

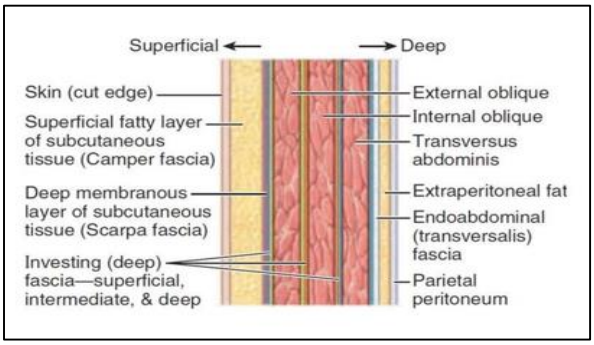

Figure 8: Superficial and deep structures in the abdominal wall.

DISCUSSION

Inverted abdominoplasty is a surgical procedure that allows the correction of sequelae due to burns in the upper abdominal region, offering a viable alternative to patients with skin deformities derived from inadequate aesthetic procedures, such as lipolaser.[6] Unlike conventional abdominoplasty, where the skin and fat resection is performed in the lower region of the abdomen, in the inverted abdominoplasty the incision is located in the inframammary fold, which allows the traction of the skin towards the upper part, favouring a more harmonious and natural body contour.[7]

To practice body contouring surgeries, it is necessary to know the anatomy of the abdominal region.8 There are bony and soft tissue landmarks that must be identified during the preoperative period.

Bone landmarks are both anterior superior iliac crests. The pubic syphysis. The xiphoid appendix. Bilateral costal edges (Figure 4).[9] It is important to know that skin markings can change in relation to bony landmarks, especially in those patients with significant soft tissue laxity. Therefore, preoperative marking must be performed with the patient standing.[10]

Soft tissue landmarks are linea alba, both semilunar lines. The transverse tendon junctions of the rectus abdominis muscles (Figure 5).[12] For abdominal shaping, the layers of the abdomen are separated into superficial structures and deep structures. Surface structures include the skin. Superficial subcutaneous fat associated with Camper's fascia, Scarpa's fascia or the superficial fascial system of the abdomen. Deep subcutaneous fat or sub-Scarpa fat (Figure 6, 7 and 8).[13] Deep structures include the deep muscular fascia, which covers the muscles of the abdominal wall. The muscles of the abdominal wall with all the corresponding layers of the fascia that surround them (Figure 8).[14]

The main limitations of inverted abdominoplasty include the risk of skin flap necrosis if vascularization is not respected, the possibility of hypertrophic or keloid scars in predisposed patients, and the difficulty of application in those with predominant flaccidity in the lower abdomen.[15,16] In the latter, the combination with a lower mini-abdominoplasty may be required, as was performed in the case presented.[17]

Abdominoplasty techniques consist of reducing the abdominal surface area by removing excess skin and localized fat.

Classification of abdominoplasties

Miniabdominoplasty

(Attention is located in the lower abdomen, with direct access to the muscles at this level). Miniabdominoplasty or

limited lower abdominal dermolipectomy, the ideal patient is one who presents deformation only of the lower abdominal area and has moderate skin laxity, with moderate lower musculofascial flaccidity and a flat upper abdomen. The plane we will work on will be from the navel to the pubis.

Endoscopic abdominoplasty

This technique consists of performing a musculofascial plication to support the abdominal wall with minimal detachment and through endoscopic vision. It is indicated in patients with minimal skin laxity, normal weight and mild or moderate diastasis recti. The most suitable are those in which the diastases are limited in width because a very large mobilization requires detachment of adjacent skin and consequently, we will have to finally excise excess skin. Remember that not having excess skin preoperatively does not mean that you will not have it when the plication is completed.

Reverse or inverted abdominoplasty

In this procedure, the incisions are placed in the sub mammary folds and the flap is removed downwards in the supraaponeurotic plane. This is reserved for patients with great upper abdominal laxity and pre-existing under mammary scars, trying not to join both scars through the sternum.

T or Fleur de Lis abdominoplasty. It is typical of bariatric patients or after massive weight loss. It is undoubtedly the best solution if the bariatric surgery was open or has a mid-range laparotomy, and also in extreme cases of great excess abdominal skin.

Complete abdominoplasty

Indicated in patients with severe skin laxity, skin sagging, and considerable diastasis of the musculofascial system of the abdomen. When all the infraumbilical skin and fat can be removed, a complete abdominoplasty is indicated. This is the classic indication, but we must remember that the scar should not be what finally decides what type of abdominoplasty we will perform, but rather the global evaluation of the abdomen.[18]

Reverse abdominoplasty technique

An incision is made in the inframammary fold, following the natural curvature of the breast fold, skin dissection is performed caudally, separating the skin from the underlying muscular fascia, taking into account the umbilical scar as the lower limit, plication of the superficial fascia is performed to improve the definition of the contour, en bloc resection of the skin excess is carried out, the upper skin is pulled towards the inframammary region to achieve a harmonious adaptation of the tissue, the skin flaps with resorbable sutures in multiple planes to reduce tension and improve healing, closed aspiration drainage and closure by planes with absorbable intradermal suture.[11,19]

Finally, the literature supports the efficacy and safety of reverse abdominoplasty in appropriately selected patients. Recent studies have shown that this technique not only improves abdominal aesthetics, but also contributes to the functionality of the skin, optimizing the quality of the reconstructed tissue.[20] In the case analyzed, the procedure managed to correct the burn sequelae, improving the patient's self-esteem and satisfaction without major complications. Based on clinical experience and the results obtained, inverted abdominoplasty continues to establish itself as an effective surgical alternative in the reconstructive management of upper abdominal deformities.[21]

CONCLUSION

Inverted abdominoplasty represents an effective and safe surgical alternative for the treatment of upper abdominal sequelae caused by thermal burns resulting from inadequately performed aesthetic procedures such as lipolaser. This case demonstrates that, with proper surgical planning and detailed knowledge of abdominal anatomy, it is possible to resect damaged tissue, improve body contour, and restore both the functionality and aesthetics of the treated region. Additionally, combining this technique with complementary procedures such as lower mini-abdominoplasty can enhance results, allowing for a more harmonious and personalized reconstruction.

This approach is not only useful for lipolaser-related injuries but also offers a valuable option for correcting residual deformities from previous surgeries, as well as hypertrophic scars, retractions, or imperfections located in the upper abdomen. This case report contributes to the body of knowledge by demonstrating the usefulness of inverted abdominoplasty in nonconventional reconstructive contexts, expanding its indications beyond elective aesthetic surgery, and providing a clinical guide for managing patients with complications from previous cosmetic interventions. The experience described reinforces the importance of individualized surgical treatment and confirms the value of inverted abdominoplasty as a reconstructive tool within the therapeutic options available to plastic surgeons.

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REFERENCES

1. Flores R, Valenzuela F. Cicatrices de quemaduras y la utilidad de la terapia láser en su manejo. Revista Médica Clínica Las Condes. 2023;34(2):155-64.
2. Williams RA, Thompson AH. Abdominoplastia invertida en cirugía estética: una revisión exhaustiva.

Cirugía Plástica Reconstructiva. 2019;143 (6):1179-85.
3. Jones, P, Turner ED. Tratamiento y reconstrucción de quemaduras con láser: una serie de casos. Journal of Dermatological Surgery, 45 (5), 678-683.
4. Brown C, Harris R. Resultados cosméticos y recuperación funcional después de una abdominoplastia invertida. Plastic Surgery Res. 2018;22 (3):211-7.
5. Patel MS. Injertos de piel e injertos de grasa en cirugía reconstructiva. Revista de Cirugía Estética. 2020;28(2):304-10.
6. Kim SL, Song HJ. Abdominoplastia invertida para quemaduras abdominales: técnicas quirúrgicas y consideraciones. Revista de cirugía plástica y estética. 2020;39(1):67-72.
7. Garcia AM. Contorno abdominal: Una visión general de las técnicas quirúrgicas. Revista Estética Quirúrgica. 2021;12(1):27-33.
8. Anderson JD. Planificación preoperatoria para procedimientos de contorno abdominal. Cirugía Plástica Clínica. 2021;45(4):723-9.
9. Kumar V, Patel R. Anatomía de la cirugía abdominal y puntos de referencia quirúrgicos. Surgical Anatomy Rev. 2019;14(1):45-51.
10. Baker S, Allen PT. Cirugía abdominal: evaluación preoperatoria de la pared abdominal. Revista de Cirugía Anatomía. 2019;42(3):332-6.
11. Peterson, DR. Abdominoplastia invertida: técnica quirúrgica y resultados a largo plazo. Revista de Cirugía Estética. 2019;27(1):99-105.
12. Lee WH, Park JK. Abdominal muscle separation and its role in abdominal wall repair. Journal of Reconstructive Surg. 2018;32(6):745-51.
13. Martin C, Johnson RP. Complications in abdominoplasty: A review of recent advancements. Journal of Aesthetic Surg. 2019;19(4):255-61.
14. Rojas LP, Villanueva MF. Fat grafting in abdominal reconstruction: Advantages and limitations. Aesthetic Surgery J. 2016;39(5):605-10.
15. Murray DC. Vascular considerations in inverted abdominoplasty. Plastic Surgery Clin. 2016;35(2):182-8.
16. Wright TA, Hughes CP. Techniques for abdominoplasty: A critical review. Surgical Aesthetic Review. 2018;24(1):55-60.
17. Walker LB, Stevens MK. Miniabdominoplasty: Indications and outcomes. J Cosm Surg. 2019;15(2):142-7.
18. Young M, White RJ. Classifications in abdominal surgery: Clinical implications. Clinical Surgery Rev. 2021;18(3)231-8.
19. Lawrence GH. Postoperative care and results in inverted abdominoplasty. J Plastic and Aest Surg. 2020;42(2):114-9.
20. Fisher TL, Clark SJ. Aesthetic outcomes of inverted abdominoplasty: A case study review. J of Aesthetic Med. 2021;11(4):310-5.
21. Adams MB, Jones HD. The role of inverted abdominoplasty in reconstructive surgery. Reconstr Plastic Surg J. 2021;33(5):345-50.

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