Correspondence

Correction of Contour Deformity Using Reverse Abdominoplasty Combined with Mini-Abdominoplasty

Xiao Yang, Guan-Huier Wang, Jing Wang, Hong-Bin Xie
Department of Plastic Surgery, Peking University Third Hospital, Beijing 100191, China

To the Editor: Excessive weight loss usually contributes to apparent abdominal contour deformity. Abdominoplasty is the optimal solution for wall laxity, excess skin, and diastasis of the rectus abdominis.\(^1\) Reverse abdominoplasty, a partial procedure, plays an irreplaceable role in correcting upper epigastric skin laxity and is usually performed after prior liposuction or conventional abdominoplasty.\(^2\) In cases with apparent skin laxity, residual contour deformity of the upper abdominal wall also remains.

Herein, we report the case of a patient with apparent abdominal wall skin laxity with a compact umbilical area 1 year after liposuction, which was treated with combined reverse abdominoplasty and mini-abdominoplasty, resulting in a satisfactory esthetic outcome.

A healthy 42-year-old Caucasian woman complained of residual deformity of the upper epigastrium approximately 1 year after liposuction. She expressed concern regarding abdominal skin laxity and asymmetry both above and below the umbilicus [Figure 1a]. Accordingly, a precise trunk-improving procedure was proposed when she visited our institution. We concluded that the skin within 2 cm around the umbilicus was in favorable adherence to the underlying fascia, while the rest of the skin was not. Considering undermining of the inherent blood supply during the prior liposuction, full abdominoplasty may have led to excessive skin necrosis in the distal region. Regardless, the upper trunk, which had the most apparent deformity, was far away from the incision and may not have resulted in satisfactory improvement. Without repositioning the umbilicus, reverse abdominoplasty was performed and mini-abdominoplasty was conducted as a second-stage procedure 6 months later.

An incision was made along the W-shaped line crossing the midline, and we discontinuously undermined the skin flap just above the fascia of the rectus abdominis. With continuous nonabsorbable, braided, polyester sutures, the aponeurosis of the rectus abdominis was plicated along the midline from the xiphoid to the level of the umbilicus. With the released abdominal wall lifted up to the inframammary fold, the excess region was then determined [Figure 1b]. Two triangle-shaped skin flaps were excised and multilayer closure was performed. For the remaining lower trunk laxity, 6 months later, mini-abdominoplasty was performed through an incision above the pubis in the conventional direction. After mini-abdominoplasty, the contour of all abdominal walls was compact and flat, showing a satisfactory esthetic outcome. The patient was content with the result and no complications were reported during the 1-year follow-up [Figure 1c].

Reverse abdominoplasty plays an important role in esthetic reconstruction of the abdomen. For patients who experience complications from a prior conventional abdominoplasty or liposuction, residual deformity of the upper epigastrium often remains. Reverse abdominoplasty with or without liposuction is a reliable method for resecting the excess skin flap of the upper trunk.

Reverse abdominoplasty has similar complications as conventional abdominoplasty. The complications are generally rare, but can be quite severe.\(^3\) In this case, prior liposuction, which undermined the inherent vessels of the upper and lower abdomen, left the important perforating vessels around the umbilicus intact. In contrast to conventional full abdominoplasty, partial procedures are able to avoid the abundant periumbilical veins.\(^4\) In utilizing two partial abdominal operations, we were able to complete minimal undermining, ensuring stable perfusion from the perforating vessels of the deep inferior epigastric system and intercostal veins in order to avoid skin flap necrosis. For the combined procedures, the ideal patient is the one who has an apparent contour deformity both in the upper and lower abdomen, with the area around the umbilicus being compact, which is often reported after a previous unsatisfactory liposuction.

Many patients are daunted by reverse abdominoplasty due to an apparent scar. This procedure can begin with either a W-shaped curvilinear incision crossing the midline of the epigastrium or with two separate crescentic incisions along the inframammary line. Compared with the W-shaped incision, the separate incisions sacrifice correction of the skin laxity of the midline in order to avoid an apparent scar.\(^5\) In this case, the patient accepted the W-shaped curvilinear incision across the midline with consideration of her apparent contour deformity of the upper epigastrium. In our...
previous experience, the scar is not as noticeable in Caucasian individuals, which may neutralize the defect of the intact incision. In the present case, the surgical outcomes proved to be dramatic and favorable, and to date, the original deformity has not recurred.

Frequently, upper torso laxity coincides with mammary ptosis to a certain extent. In these circumstances, reverse abdominoplasty is combined with mastopexy or reduction/augmentation mammoplasty, which can be conducted in a single stage using the same incision. In general, because the breasts expand and become oversized after massive weight loss, patients prefer reduction mammoplasty to modify the breast deformity. Hurvitz et al. first suggested simultaneous reverse abdominoplasty and mammary augmentation and investigated the possibility of utilizing silicone and a spiral flap in the mammary augmentation surgery. Utilizing the waste skin flap to correct the breast deformity, the spiral flap resulted in an excellent esthetic outcome and was deemed a more reasonable alternative. In the present case, the breasts remained in an approximately normal projection; therefore, mastopexy or reduction/augmentation mammoplasty was not indicated.

This case had limitations. Although the surgery achieved satisfactory postoperative outcomes, the case lacked pre- and postoperative weight and abdominal girth measurements, limiting the objective measurements that could verify the esthetic effect. Furthermore, this was a single case whose results should be taken with caution. A future study involving more patients may help validate this procedure.

In conclusion, to our knowledge, this is the first report of combined reverse abdominoplasty and mini-abdominoplasty for the treatment of a characteristic deformity. In contrast to conventional full abdominoplasty, the combined partial procedures guaranteed that the blood supply avoided necrosis of the skin flap. In this way, the procedure can minimize repeat undermining of the abdomen, particularly the blood supply, and ultimately result in a long-term satisfactory outcome.

Declaration of patient consent

The manuscript was approved by the Ethics Committee of Peking University Third Hospital. The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the article. The patient understands that her name and initials will not be published and due efforts will be made to conceal the identity of the patient, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Hurvitz KA, Olaya WA, Nguyen A, Wells JH. Evidence-based medicine: Abdominoplasty. Plast Reconstr Surg 2014;133:1214-21. doi: 10.1097/PRS.000000000000088.
2. Halbesma GJ, van der Lei B. The reverse abdominoplasty: A report of seven cases and a review of English-language literature. Ann Plast Surg 2008;61:133-7. doi: 10.1097/SAP.0b013e31815f6fb9.
3. Winocour J, Gupta V, Ramirez R, Shack RB, Grotting JC, Higdon K. Abdominoplasty: Risk factors, complication rates and safety of combined procedures. Plast Reconstr Surg 2015;136:99-100. doi: 10.1097/PRS.0b013e318287729b.
4. Pacifico MD, Mahendru S, Teixeira RP, Southwick G, Ritz M. Refining trunk contouring with reverse abdominoplasty. Aesthet Surg J 2010;30:225-34. doi: 10.1177/1090820x10369699.
5. Zienowicz RJ, Karacaglu E. Augmentation mammoplasty by reverse abdominoplasty (AMBRA). Plast Reconstr Surg 2009;124:1662-72. doi: 10.1097/PRS.0b013e3181babd02.