Reverse Abdominoplasty Advancement Flap: An Innovative Option in Breast Reconstruction in Post-Massive Weight Loss Patients

Abdulaziz Asiry, MD
Ignacio Garrido, MD, PhD
Benoit Chaput, MD, PhD
Elodie Chantalat, MD
Charlotte Vaysse, MD, PhD

Summary: With the increase in obesity in the world, we observe more and more bariatric surgeries. Simultaneously, the incidence of breast cancer increases. The reverse abdominoplasty has been essentially described to lift the upper part of the abdomen for the individual who has loose excess skin in the supraumbilical region. The application of reverse abdominoplasty flap has been extended beyond aesthetic procedures to breast reconstructive interventions. We present an innovative option of postbreast cancer reconstruction by reverse abdominoplasty advanced flap following massive weight loss. (Plast Reconstr Surg Glob Open 2019;7:e2260; doi: 10.1097/GOX.0000000000002260; Published online 21 May 2019.)

Reverse abdominoplasty has been described in patients who had body contouring procedures1–4 and a reconstructive option for unilateral or bilateral chest wall defect.5,6 In the recent years, there have been increasing requests by the patients to lift the supraumbilical part of the abdomen with a scar that can be hidden in the inframammary fold.7 We present an innovative option of postcancer breast reconstruction (BR) by reverse abdominoplasty advanced flap following massive weight loss.

CASE

A 62-year-old woman was treated by right radical surgery for a breast cancer followed by adjuvant chemotherapy, radiotherapy, and hormonotherapy. In her medical history, we noticed 2 cesareans and a gastric bypass surgery 3 years ago, allowing her to lose 64 kg.

Two years after the primo treatment, she consulted for a BR expecting an autologous reconstruction without any implant. During physical examination, the right-side scar was nonadherent and the left side had a moderate hypertrophic breast with severe ptosis due to her massive weight loss. Moreover, there was a significant excess of abdominal skin and subcutaneous tissue with large abdominal apron (Fig. 1) associated with a big flexibility of the skin (Fig. 2). To combine the BR and abdominoplasty, we suggested a reverse abdominoplasty advancement flap to the patient.

Preoperatively, surgical marking was performed in stand-up position. The amount of excess skin of the upper abdominal wall was estimated by pinch test. The operation began with submammary incision following the old right-side mastectomy scar crossing the midline. We performed the dissection of the upper abdominal part above the fascia superficialis up to 2 cm above the superior border of the umbilicus. The right abdominal flap was pulled to reconstruct the right breast. We attached the inframammary fold to the periosteum of the ribs like usually performed in the abdominal advancement flap. On the left-hand side, we performed superior pedicule mastopexy (Fig. 3).

A year later, we performed a final remodeling to give harmonious result with autologous fat grafting, an inframammary line fixing, and the reconstruction of the nipple–areola complex with local flap associated with tattooing (Fig. 4).

DISCUSSION

The main objective of BR was to rely upon the importance of recreating volume, shape, and contour depending on multiple factors (comorbidities and oncological treatments).8 One option could be the reverse abdominoplasty. First, this technique was developed for anterior trunk reconstruction, thanks to a better anatomical understanding of the superficial abdominal wall circulatory system.3 In recent years, this technique has been used on patients with massive weight loss and could be combined with...
with circumferential abdominoplasty to use the infraumbilical laxity and also for breast augmentation. The main advantages were excellent alternative in complex cases, avoidance of microsurgical technique for free tissue transfer, simplicity of the technique to execute, and an acceptable aesthetic outcome. It could be associated with other techniques such as autologous fat grafting, and it could contribute with significant bulk.

Yacoub et al in 2012 described the reverse extended abdominoplasty as a new concept in which abdominoplasty was performed with inverted access. The procedure was applied to patients who had 1 or more scars in the epigastric region to eliminate these scars. The main difference of this technique with the one described by Rebello and Franco was the disinsertion of the umbilicus, which allowed more advancement of abdominal tissue and provided sufficient flap to be tracked to the chest region. The application of this technique was extended further to be applied in BR associated with implant. Comparatively to our procedure, because of a significant excess of volume tissue in the superior part of the abdomen, it was not necessary to disconnect the umbilicus from the flap. After the first surgery procedure, the umbilicus was a little bit upper, but it was corrected by the second surgery with the inferior abdominoplasty.

Moreover, in our case, the patient was addressed for deep inferior epigastric perforator flap, but the main risk of this technique was the venous thromboembolism and necrosis due to a previous cesarean. This patient only wanted autologous tissue reconstruction and was totally against a technique involving a latissimus dorsi flap or using a prosthetic implant. Finally, she preferred a reconstruction combining a simple technique with low risk and quick result. That is why we chose to avoid microsurgical reconstructions.

Finally, our case was the first describing the reverse abdominoplasty flap as standalone flap for autologous BR. The originality of this technique was the simplicity, the acceptable aesthetic results, the possibility to be combined with autologous fat grafting increasing the volume of the flap, and ease of surgical dissection. It also provided body

Fig. 1. Preoperative pictures showing a significant excess of the abdominal skin and subcutaneous tissue with large abdominal apron.

Fig. 2. Preoperative pictures showing the flexibility of skin.

Fig. 3. Intraoperative sequence showing left breast superior pedicle mastopexy and flap advancement of the reverse abdominoplasty.
contouring and autologous BR at the same procedure. With the major increase in obesity and bariatric surgeries, this choice of postbreast cancer reconstruction could be considered in our decisional algorithm.

Charlotte Vaysse, MD, PhD
Oncological Surgery Department
Centre Hospitalier Universitaire Toulouse
Institut Universitaire du Cancer de Toulouse-Oncopole
1 Avenue Irène Joliot-Curie, 31059 Toulouse Cedex 9, France
E-mail: vaysse.c@chu-toulouse.fr

REFERENCES
1. Rebello C, Franco T. Abdominoplasty through a submammary incision. *Int Surg*. 1977;62:462–463.
2. Baroudi R, Keppke EM, Carvalho CG. Mammary reduction combined with reverse abdominoplasty. *Ann Plast Surg*. 1979;2:368–373.
3. Huger WE Jr. The anatomic rationale for abdominal lipectomy. *Am Surg*. 1979;45:612–617.
4. 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;61:133–137.
5. Pantelides NM, Mondal D, Wishart GC, et al. Reverse abdominoplasty: a practical option for oncological trunk reconstruction. *Eplasty*. 2015;15:e2.
6. Tiong WH, Basiron NH. Reverse abdominoplasty flap in reconstruction of post-bilateral mastectomies anterior chest wall defect. *Case Rep Med*. 2014;2014:942078.
7. Deos MF, Arnt RA, Gus EI. Tensioned reverse abdominoplasty. *Plast Reconstr Surg*. 2009;124:2134–2141.
8. Ahmed S, Snelling A, Bains M, et al. Breast reconstruction. *BMJ*. 2005;330:943–948.
9. Agha-Mohammadi S, Hurwitz DJ. Management of upper abdominal laxity after massive weight loss: reverse abdominoplasty and inframammary fold reconstruction. *Aesthetic Plast Surg*. 2010;34:226–231.
10. Zienowicz RJ, Karacaoglu E. Augmentation mammoplasty by reverse abdominoplasty (AMBRA). *Plast Reconstr Surg*. 2009;124:1662–1672.
11. Yacoub CD, Baroudi R, Yacoub MB. Abdominoplastia reversa estendida. *Rev Bras Cir Plást*. 2012;27:328–332.