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Abstract

Looking to improve the esthetic and functional results of the central pedicle technique, we add the dermis mesh shaping and support forming a "central cone" to manage the mammary tissue. The periareolar skin agglomeration searches for a reduction in horizontal submammary scars' size. The purpose of this chapter is to describe this surgical technique (combination of techniques).

Keywords: reduction mammoplasty (RM), central pedicle (CP), dermis mesh (DM), periareolar, nipple-areolar complex (NAC)

1. Introduction

There are multiple techniques of Breast Reduction (BR) [1–3] that look to, alongside reducing the size, achieve a symmetric pleasant looking shape, stable through time with minimal ptosis, minimal scarring, and frequency of complications.

Techniques based on structural support from skin and suture usually end up with ptosis and ample scars, because of the weight of the mammary tissue and the expansion of the skin and scars. Besides that, the mammary cone loses firmness and projection.

The BR technique based on the Central Pedicle (CP) was initially described by Balch in 1981 [4] and popularized by Hester in 1985 [5]. It is a trusted technique since the CP has good irrigation and innervation from the perforating branches of the fourth and fifth intercostal spaces [6], and if a wide base is kept, it will also receive irrigation from the perforating branches of the internal mammarian artery and branches from the lateral thoracic artery [5], allowing to reduce great volumes, achieve better mastopexies, and preserve lactation [7–9].

In this chapter, we will show the combination of two techniques: CP + Mesh of Dermis that produces a stable and well-projected central cone, described by Sampaio Goes in 1996 [10, 11] and Circumferential Periareolar Suture described by Benelli in 1990 [12], which allows reducing the submammary scar. Both of these techniques have been proposed in the literature and used separately. By combining them,
we pretend to obtain better long-term results in shape, reducing ptosis, and achieving minimal submamarian scarring.

This association of techniques has been applied in patients with mamarian hypertrophy and great ptosis, looking to reach the ever-increasing expectations of the patients [13].

We present here a description of this systematized surgical technique, complemented with a series of images.

This technique, as well as all the images shown here, and the results of a series of 300 patients who were intervened with this technique, followed and analyzed before, during, and after the procedure; were first published in the “Cirugía Plástica Ibero Latinoamericana” magazine in March 2021, volume 47, N 1, pages 35–48. Used with permission of the editor.

2. Surgical technique

Delineation: All patients are photographed and delineated standing (Figure 1). A circle or oval is drawn around the areola marking the borders of the future skin flap: (on average) infraclavicular 16–18 cms to the middle clavicular line; 8–9 cm to middle sternal line; 6 cm to the inframammary fold, and 10–12 cm to the anterior axillary line (Figures 1 and 2) by side. The size of the skin flaps (made of fat and skin tissue) depends on the final size of the planned mammary. The circle’s cephalic pole (A) (Figure 2) is marked 11–12 cm from the middle sternal line, just like the middle point of the lower pole in the new inframammary fold (D) is marked 1 cm over the original fold. From A 6–10 cm are measured downward, toward the external (B) and internal (C) borders of the circle, since a greater length would produce an increased frequency of wrinkles in the skin around the areola. From points B and C, a triangle with a vertex 1 cm under the middle point between the two points is drawn (Figure 3), which corresponds to the future point T (joint point of the scars of the flaps under the areola) (Figure 4). The same triangle is drawn in point D (Figure 2), which corresponds to future point inverted T (joint point of the scars in the inframammary fold). All measurements are confirmed with the anesthetized patient, in a half-seated position.
Figure 2.
Preoperative marking scheme [14].

Figure 3.
Skin triangles in B and C (B point is the same as C in the other side of the breast) [14].
in the surgical table, utilizing two strings: anchored in the middle line, in the manubrium sternum and xiphoid, for better symmetry.

**Surgery:** The surgery starts with the subcutaneous infiltration of the mammary, with a saline solution of 240–300cc in each mammary (1,000 cc of physiological saline (PS) + 1 cc of epinephrine + 10 cc of sodium bicarbonate (8.4% + 10 ml of lidocaine 2%). We do the marking of the areola with areolotome of 42 mm, and de-epidermize the skin around and until the initially marked circle (Figure 5), creating the dermis flaps with a maximum of 9 cm in the cephalic pole, 6 cm toward medial and caudal pole. If the dermis exceeds these measurements, it can be trimmed, but all the

![Figure 4.](image1)

*Final assembly of skin flaps [14].*

![Figure 5.](image2)

*Measurement of de-epidermized dermis flaps.*
lateral dermis must be conserved. The skin-fat flaps are shaped with a bevel cut in the dermis (future periareolar scar) and then, following the superficial fascia of the mammary until the pectoral plane, circumferentially, creating the CP (Figure 6A) that is then reduced in four quadrants, slimming it down, and eliminating the excess mammary tissue (under the dermis flaps). More tissue is left under the superior dermis to give it more volume to the future superior pole, and tissue is eliminated in the base as less as possible to conserve irrigation (perforating intercostals of the internal mammary and lateral thoracic arteries), creating a tissue tube or reduced CP (Figure 6B). Rigorous hemostasis.

The assembly of the mammary starts with the anchorage of the dermis flaps to the pectoral aponeurosis and/or CP base in all its outline, shaping a mound or central cone (Figure 7A) with nylon 4.0 fixing the position of the nipple-areola complex (NAC) (nipple: 18–20 cm from the clavicle and 10–11 cm from the middle sternal line). Cuts on the dermis flaps are made to relax it (creating a mesh), and they are extended in order to fix the tension on the mesh, the nipple position, and the shape.
of the cone (Figure 7B). Once the central mammary cone is done, it is surrounded by
the skin flaps creating a double layer, uniting the B and C points of the A-B-C triangle
that will contain the areola (Figures 4 and 8). Continuous round block on the dermis
with polypropylene 3.0 with lancet needle (Figure 9), then is tied up calibrating

Figure 8.
Suture of points B and C.

Figure 9.
Start of continuous round block.
Figure 10.
The knot is anchored to the dermis.

Figure 11.
The inframammary fold.
it with the areolotome (Figure 10), and the knot is anchored to the dermis of the cone to prevent superficialization (Figure 10). The skin is sutured in the two layers: with colorless nylon 5.0 suture on dermis with separate stitches, and the superficial intradermis with nylon 4.0 that is later removed after 14 days of postoperative.

The inframammary fold is marked 1 cm over the original, sculpting the skin triangle of 1 cm in point D (Figure 11). The caudal pole's skin flaps are trimmed near the future inframammary fold (Figure 12A and B), and the superficial fascia of the chest wall is anchored to the dermis of the cone's inferior pole with nylon 4.0, 3.5–4 cm from the bottom edge of the areola, to strengthen the inferior pole (Figure 13A and B); then, the inferior pole's flaps are pulled towards the lower middle line (Figure 14A); they are marked and trimmed leaving 4–5 cm in the middle edge (vertical scar) (Figure 14B and C).

Two plane sutures of the skin flaps just like the periareolar wound (Figure 15A–C). Suction drainage is left in the lateral zone and armpit, which comes out under the inferior pole and is removed 1–2 days before medical discharge. All sutures used are non-resorbable.

For wound care and bandaging, paper tissue is applied as support for the breast for 1 week, until the first wound dressing. The symmetry of the NAC is confirmed.
with the strings anchored in the middle line (Figure 16) during the structuring of the mammaries.

At the end of this work, clinical cases are attached with the aim of demonstrating the results of the described technique (Figures 17–19).
Figure 15. A. Initial suture of dermis. B. Complete suture of dermis. C. Final intradermic suture.
Figure 16.
First wound dressing.

Figure 17.
A case example: the three upper images are before surgery, the lower ones are post-surgery (left image is during demarcation).

Figure 18.
A second case example.
3. Discussion

When analyzing the traditional techniques of breast reduction, in which the assembling of the reduced pedicles and positioning of the tissues depend on the skin flaps sutured to each other [1–3] and it is them which support the shape and weight of the breast, we tend to see how, in many cases, the weight causes the skin to stretch, the scar to widen, and in the medium and long term we end up seeing breast ptosis, both of the ANP and the inferior pole, causing the breasts to lose shape and firmness.

The combined technique presented here is based on the CP technique (described by Bach [4]) that is safe for removing great volumes and pexies [4–10]. It allows us to: with the dermis mesh (technique described by Góes [11, 12]) that surrounds the CP, one anchored to the aponeurosis creates a stable central cone or mound [10], as a nucleus for the future breast, that in its vertex including the projected and positioned NAC. The reinforcement of the inferior pole of the dermis cone, with the Scarpa fascia suture in its lower third (author’s contribution), would reduce the ptosis of the inferior pole. After that, this dermis cone is covered by the skin flaps (double layer), which, with a small tension, help in the firmness of the reduced breast. Suturing around the areola in “Raund Block” described by Benelli [13], accumulating skin around the areola, allows to reduce the inferior horizontal scar, in order to keep it inside the margins of the breast, achieving an average of 13.4 cm in the right breast and 13.2 cm in the left (6.5 to 18 cm), although it is not enough to talk about reduced scarring in all the cases, particularly in big reductions [15]. By cutting the skin 1 cm above the original submammary fold (Figure 10), the scar is left in the inferior pole, the compression with silicone becomes easier, and its trauma by the breast holder in the postoperative is prevented. A breast that is firm, pleasant-looking, well projected, round, and stable with minimal ptosis is achieved; just like it was confirmed in the follow-up of the patients and the measurements taken of the nipple to the collarbone and to the submammary fold.

Another difficulty is obtaining adequate breast symmetry at the end of the surgery. This technique allows us to confirm breast symmetry in three stages by comparing the volume of the tissues:

1. When finishing reduces the central pedicles (pulled) and the skin flaps (Figure 6).
2. Once the central cone is formed (Figure 7). The symmetric position of the NAC is also verified.

3. When the central cone is covered with the skin flaps (Figure 8), verify the thickness of the fat-skin flaps, suturing them around the NAC and presenting them when covering the cone.

This achieves an adequate symmetry in 97% of the cases according to questionnaire done to the patients during the postoperative period [14]. Of these patients, 57.7% evaluated the results as “very satisfactory” and 37.9% as “satisfactory.”

In all these stages, tissue can be removed if it is necessary for the final symmetry.

In the published series of 300 patients [14], a low frequency of complications is reported (11.3%): re-intervened hematomas (1%), localized hematomas treated by deferred punction (1.3%), total necrosis of the NAC (0.3%), partial necrosis of the NAC (1.3%), necrosis of the skin flap ends greater than 1 cm (2%), fat necrosis greater than 2 cms (2%), hypoesthesia of the NAC (3.3%). All of these are among average or below average frequency of complications described in other techniques [16–21].

In the same series [14], 14.3% of the patients required a surgical touch-up: lateral breast liposuction (7.7%), lipoinjection (1%), scar correction (3%), escharotomies and re-sutures of the skin flaps (1.3%), removal of fat necrosis (1%). Only one patient in the entire series (0.3%) required a major surgical corrective reintervention in order to remove some extensive calcified necrosis and reconstruction with bilateral implants.

Complications were primarily present in patients with obesity and a smoking habit [14].

4. Conclusions

Based on a published series of patients who intervened with this technique [14], it can be concluded that it is possible to combine the techniques of CP, autologous dermis mesh, and circumferential periareolar, all of them described in Medical Literature for reduction and/or breast pexias. The combined technique here utilized is versatile in the management of the breasts’ volume and symmetry, also for mobilizing the NAC and stabilizing it with dermis mesh anchored to the pectoralis major fascia and the chest wall fascia. Also, it produces a stable, well-projected central cone, which, by being covered with skin (double layer), can achieve a breast with greater firmness.

The accumulation of periareolar skin with “Raund Block”, allows to reduce the submammary scar, in order to not exceed the breast limits.

In our experience, it is a safe procedure, with few complications [14]. Because of the good irrigation and sensitivity of the CP, we can reduce major breast volumes and preserve lactation, since all the mammalian tissues of the CP are connected to the NAC. The obtained breast shape is stable in time, with minimal ptosis of the NAC and the inferior pole, achieving high satisfaction with the patients [14].

Conflict of interests

The authors declare having no financial interest related to the contents of this article. Neither have they received help or payments for the realization of this study.
References


