

Neoumbilicoplasty with a Superiorly Based Abdominal Skin Flap

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Summary: We propose a neoumbilicoplasty technique that can be applied when the umbilical stalk becomes disrupted during an abdominoplasty. This case used surgical concepts that involved progressive thinning of the flap in a 3-cm radius around the neoumbilicus, with increased thinning toward the neoumbilical position. This was followed with suture tacking of the thinned abdominal flap to create a concavity around the neoumbilicus. A longer “U” shaped incision was created and also sutured down to abdominal wall to recreate an umbilical “floor” with the adjacent skin sutured to the superior-based flap to construct the walls of the neoumbilicus. An aesthetically pleasing umbilicus resulted with high patient satisfaction and a lack of postoperative complications. There were no additional scars extending beyond the umbilical region. (*Plast Reconstr Surg Glob Open* 2018;6:e1762; doi: 10.1097/GOX.0000000000001762; Published online 16 April 2018.)

INTRODUCTION

The umbilicus can be considered an aesthetic focal point of the abdomen. Traditional umbilicoplasty involves transposition of the umbilicus through a newly formed orifice in the abdominal skin flap. When unanticipated severance or devascularization of the umbilical stalk occurs, it requires de novo creation of an umbilicus known as a neoumbilicoplasty. Although there has been debate over what aesthetic techniques are most appealing, the characteristics of a natural appearing umbilicus can be defined with the following: vertically oriented, oval-shaped, and with slight superior hooding.² Although there have been various described options for reconstruction, there are no systematic or conclusive demonstrations on what neoumbilicoplasty technique can be considered the gold standard.⁵ We propose a cosmetic

neoumbilicoplasty technique that can be applied when the umbilical stalk becomes disrupted and that was considered “better than my original belly button” by patient report.

CASE DESCRIPTION

This is a 27-year-old African American woman, with negative medical history except for rectus diastasis, multiparity, and cesarean sections, who presented with an umbilical hernia and bilateral inguinal hernias during a consultation for an abdominoplasty with liposuction and bilateral augmentation-mastopexy. General surgery was consulted for concurrent hernia repairs before plastic surgery procedures. During the general surgery hernia repair, the umbilical stalk was severed at its base necessitating a neoumbilicoplasty.

Following the initial portions of the abdominoplasty and liposuction procedures, the abdominal skin flap was then stretched into position with the appropriate tension. Superior markings were then revised and incised with a #10 blade. Bovie electrocautery was used for hemostasis, and several progressive tension sutures were applied using Pledioxanone suture (PDS) 0. The projected position of the neoumbilicus was then marked. A circular area of 6 cm diameter centered on the projected umbilicus position was significantly defatted in a progressive manner toward the planned incision site (Fig. 1). The rest of the abdominoplasty closure continued in normal fashion with PDS 0 for Scarpa’s layer centrally, followed by monocryl 3-0 intradermal and Quill 2-0 subcuticular sutures over a single 19-blake drain secured in place with 3-0 Nylon. A 2×1.5 cm U-shaped superior-based flap was designed and incised with a 15 blade. Dissection continued down to the abdominal wall and then several tacking sutures between the thinned abdominal flap in the area to the

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Ethical Disclosure: All aspects of this study conform to the Helsinki Declaration.

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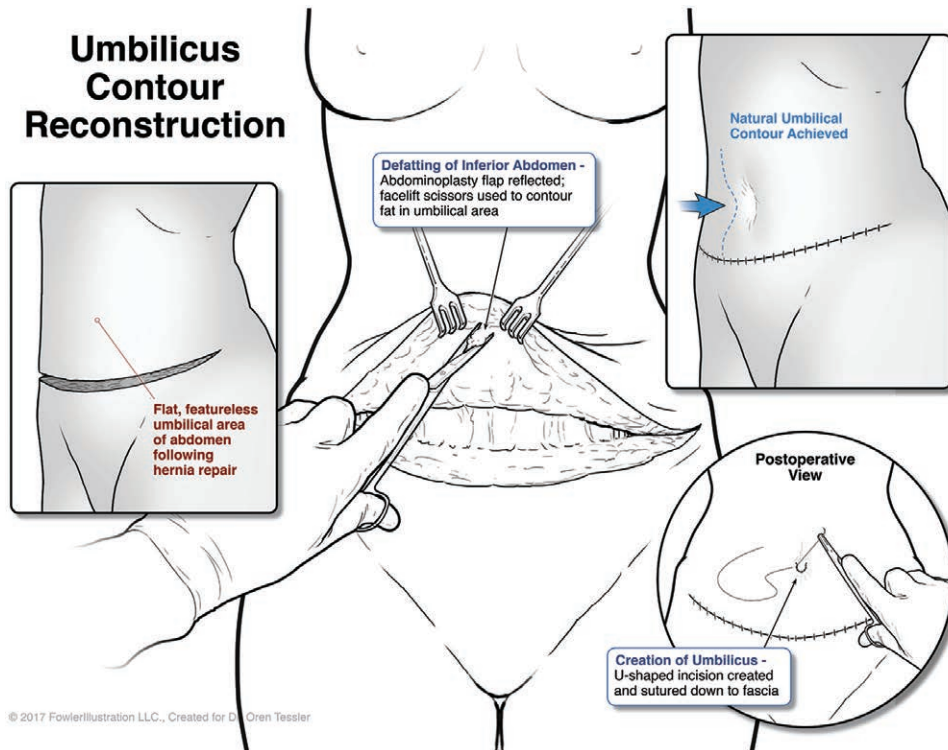


Fig. 1. Illustration of intraoperative neoumbilicoplasty technique, using defatting technique to obtain natural contour and tacking to fascia for proper indentation.

abdominal wall was made with PDS 0 sutures at the 3-, 6-, 9-, and 12-o'clock position to tack the abdominal flap and create an appropriate concavity centered at the neoumbilicus. The inferior point of the 2×1.5 cm flap was then

sutured straight to the abdominal wall with 3-0 Monocryl to create a floor for the new umbilicus. The inferior and lateral skin edges were then sutured to the tacked-down superior-based flap with 3-0 Monocryl, and the rest of the

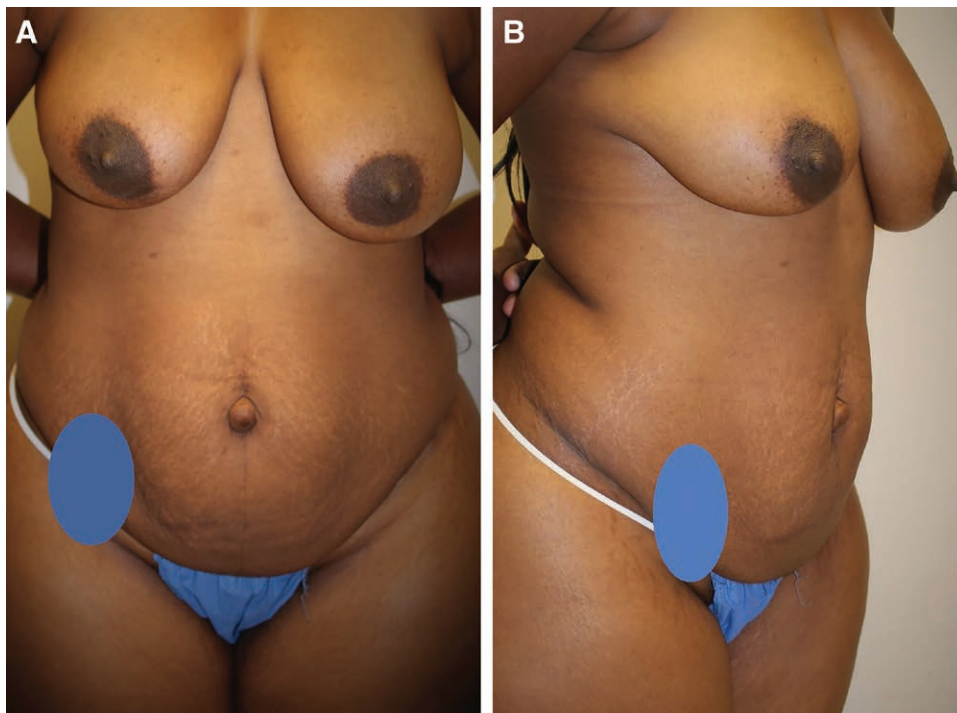


Fig. 2. A, Preoperative photographs: frontal and oblique views (B).

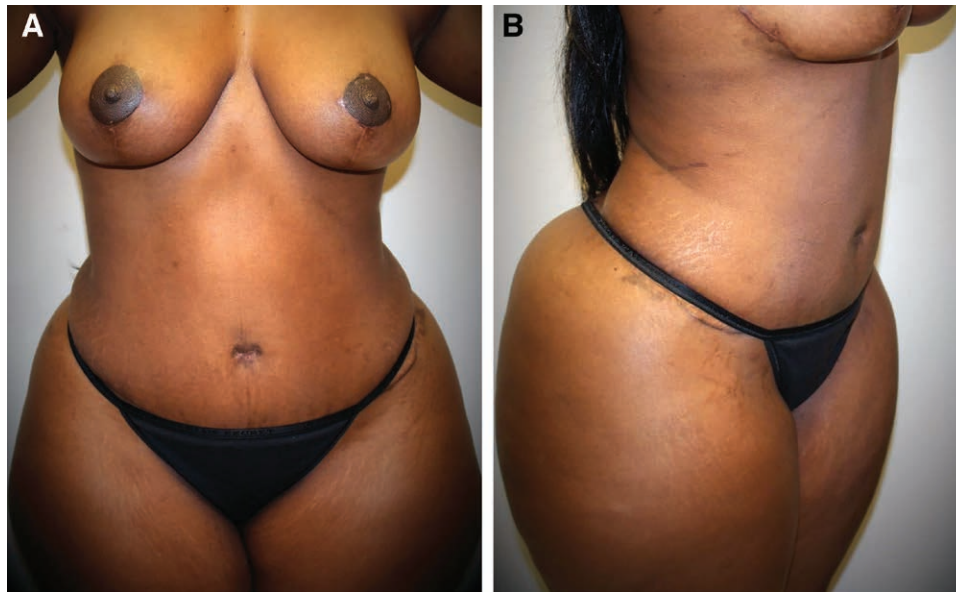


Fig. 3. A, Postoperative 1.5 months photographs: frontal and oblique views (B).

incision was closed in similar fashion with intradermal 3-0 Monocryl and then with a running layer of 4-0 plain gut. The wounds were cleansed and dressed with Dermabond glue. The umbilicus was gently filled with bacitracin-greased Xerorofrm dressing, 2×2 gauze and a Tegaderm dressing. Attention was then turned to the breast for completion of the bilateral mastopexy-augmentation portion of the procedure.

At subsequent follow-up appointments, the patient's new umbilicus healed without complications and had excellent natural contour and aesthetic appearance. The patient was pleased with postoperative outcome and preferred her new umbilicus to her preoperative umbilicus (Figs. 2, 3).

DISCUSSION

This case was unique in that it presented an option for neoumbilicoplasty in the face of an unexpected severance of the umbilical stalk. Thinning of the abdominal skin flap was used to create a natural depression of the area surrounding the neoumbilicus. A noninverted U-designed incision was used to create a neoumbilicus, creating an oval superior-based skin flap with a 2-cm width and 1.5-cm in height. One of the potential drawbacks of this outcome is that the final umbilical orientation was not as vertically oriented as optimally desired. This may have been solved by tacking a longer U incision, such as 1.5–2 cm by 3–4 cm flap to give the flap a 2:1 length to width ratio that would survive as a random flap; however, it was decided to be more conservative with thinning. Ultimately, a superior-based flap with a ratio closer to 1:1 was chosen to ensure vascularity and aesthetic result. With this procedure, there was a lack of postoperative complications following a 3 cm radius of defatting for creation of umbilical depression, even when defatting centrally superficial to Scarpa's fascia for 1.5 cm.^{3,6} Other studies have presented novel techniques for neoumbilicoplasty by using neighboring abdominal soft tissue when umbilical tissue is unavailable that also

showed appropriate superior hooding and minimal additional scarring.⁴ Another source suggested that even when the umbilical stalk is not disrupted, neoumbilicoplasty is superior to umbilicoplasty in certain situations regarding the myofascial complex. When there is > 10 cm in plication distances or if the umbilical stump is too short, the risk for umbilicus ischemia is increased; in this instance, neoumbilicoplasty became the recommendation.¹ Further studies with larger study sample sizes would provide generalizability, but our technique provided a safe and aesthetic pleasing solution to an umbilical reconstruction.

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