

Double-sided Nipple-areola Complex Marker for Masculinizing Chest Surgery

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Summary: In addition to chest contour and incision placement, nipple-areola complex size, orientation, and position is a primary concern of patients undergoing masculinizing chest surgery with free nipple grafting for gender dysphoria or gynecomastia. The author has developed a double-sided nipple-areola complex harvest and inset marker that facilitates graft healing in an optimized masculine orientation. (*Plast Reconstr Surg Glob Open* 2021;9:e3792; doi: [10.1097/GOX.0000000000003792](https://doi.org/10.1097/GOX.0000000000003792); Published online 13 September 2021.)

INTRODUCTION

Masculinizing chest surgery with free nipple grafting, either for gender affirmation or grade 4 gynecomastia, has high patient satisfaction and is increasingly common.¹⁻⁶ Goals of surgery include a masculine chest contour with a masculinized nipple-areola complex (NAC) size and position. Many authors have described techniques for appropriately resizing and repositioning the NAC.⁷⁻²⁵

The “ideal” male NAC has been described by multiple authors.²⁶⁻³¹ Although there is disagreement in these studies, likely stemming from individual differences in male NAC size, shape, orientation, and position, the “ideal” male nipple is 2.2 cm in diameter, and round to slightly oval with the long-axis oriented horizontally on the chest wall.²⁹ Vertical orientation of the male NAC is unaesthetic, and can occur after free nipple grafting due to distortion from underlying skin tension.

To achieve aesthetic nipple grafting results, the author prefers a modification of the technique described by Agarwal et al,²⁹ where a 2.2-cm circular areola graft is harvested and inset as a 2.5 × 1.5 cm oval with the long axis of the oval oriented perpendicular to the underlying skin tension. A pie-quadrant of the nipple is then harvested, thinned, and inset into the areola graft in a composite fashion. For patients with areolae that are too small for composite harvest, the circle is centered on the nipple and the NAC is reconstructed as a single graft after thinning the undersurface of the nipple.

Harvest as a circle and inset as an oval allows for aesthetic distortion of the short axis of the NAC to form a circle in cases of higher skin tension, and minimal distortion in cases of lower skin tension, resulting in an acceptable circular shape without excessive vertical distortion of the short axis (Fig. 1). The author previously performed this technique using a sterilized nickel for areola harvest, and a cut suture foil pack to mark the oval inset.

To facilitate this technique, the author has designed a double-sided NAC skin marker (PCT patent application PCT/US2021/021946). The harvest side is a 2.2-cm-diameter circle, and the inset side is a 2.5 × 1.5 cm oval with fins on the short and long axes of the oval for orientation (Fig. 2).

The marker is used in an identical fashion to existing “cookie cutter” areola markers, where the marker is pushed into the skin to outline the intended cut. The marker is manufactured using a 3-D printer with a biocompatible, sterilizable resin (Formlabs 3B Printer and Formlabs BioMed Amber Resin, Somerville, Mass.). The marker can be autoclaved without distortion and stored as an off-the-shelf item for immediate disposable use. It can also be manufactured to a smaller or larger size with the same circle-to-oval ratio according to surgeon and patient preference regarding nipple size.

The author has used this marker in 83 double-incision top surgeries and three double-incision gynecomastia surgeries in the last 18 months. There have been no cases of nipple graft loss, and cosmetic results have been acceptable.

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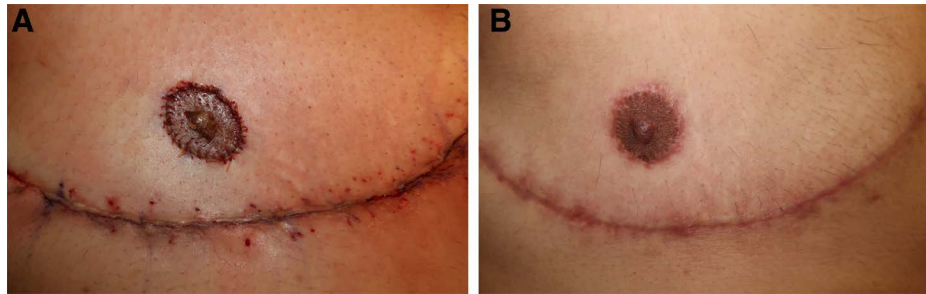


Fig. 1. Skin tension across the NAC graft results in distortion during healing. With proper orientation of the oval inset with the short axis of the oval perpendicular to the skin tension (A, intraoperative photograph), the NAC heals as a circle (B, 2-month postoperative result).

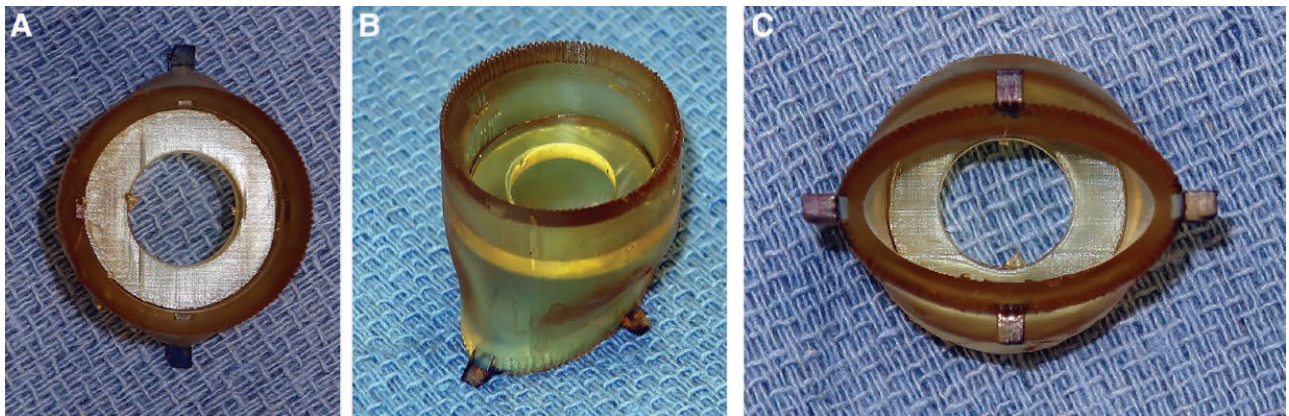


Fig. 2. Double-sided masculinizing NAC nipple marker. The harvest side (A) marks a circle and the inset side (B) marks an oval. The inset side contains fins to orient and mark the long and short axes of the oval (C).

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