

Avoiding the Unfavorable Outcome with Wise Pattern Breast Reduction



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KEYWORDS

• Breast reduction • Reduction mammoplasty • Wise pattern • Inferior pedicle • Outcomes

KEY POINTS

- Design a Wise pattern with longer vertical limbs: 8 to 12 cm from nipple to inframammary fold.
- Limit undermining of skin flaps.
- Elevate skin flaps deep to the breast capsule to ensure perfusion.
- Create wide-based inferior pedicles.
- Establish tension-free closures by creating generous skin envelopes and performing a superficial fascial vertical closure.

INTRODUCTION

Wise pattern breast reduction remains the most popular method of performing moderate- to large-sized breast reductions in the United States. According to the American Board of Plastic Surgeons Maintenance of Certification tracer statistics from 2012, 83% of surgeons use a Wise pattern skin resection pattern for their primary technique. Despite the generalized acceptance that short scar techniques are good options for many patients and despite the universal desire to minimize scarring, the Wise pattern approach endures and remains widely taught and frequently used. This popularity is most likely because of the comfort level that surgeons have in applying this technique to all varieties and sizes of breast reductions and in achieving predictable results.

Inferior pedicle Wise pattern breast reductions have been criticized for creating flat boxy breasts that are prone to hypertrophic scarring from the ample scar burden. Without doubt, this technique

may lead to these types of outcomes (**Fig. 1**). Often the most challenging patients are addressed using this standard technique though, and outcomes may be associated as much with the degree of difficulty of the case as with the technique used. Every case should be done, however, with the goal of obtaining an aesthetically pleasing result and this should be achievable. The Wise pattern inferior pedicle breast reduction it is not a bad operation; but it can, like any other method of reduction, be done badly.

Although this technique has endured, it has certainly evolved since the time that Dr Robert Wise first conceived of the brassiere pattern to facilitate breast reduction. As we consider ways to improve shape and outcomes and to minimize shape distortion, we should continually look for ways to modify the technique. Much can be learned from vertical techniques that can be applied to more traditional skin resection patterns and inferior pedicle techniques in order to improve outcomes.

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Fig. 1. The inferior pedicle Wise pattern breast reduction can result in a boxy shape to the lower pole of the breasts.

Although a Wise pattern skin resection always results in the traditional periareolar scar with a vertical limb along the breast meridian and an inframammary fold (IMF) scar, there is much variability in how that pattern is applied. Variables include nipple-areolar complex (NAC) height and diameter, vertical limb length, horizontal limb length, and the angle of divergence of the vertical limbs. Also, choice of pedicle may vary. Although the inferior pedicle is most commonly used, superomedial pedicles and free nipple graft techniques are also commonly used with the inverted T scar pattern.

Shape distortion after breast reduction can be a result of design flaw, execution of technique, or the result of postoperative complications. This article focuses primarily on optimal design and intraoperative techniques for prevention of shape distortion. By carefully considering the design of the skin resection pattern, choosing and designing an appropriate pedicle, preventing skin necrosis, and managing scars, shape distortion after Wise pattern breast reduction can be minimized.

HISTORICAL CONSIDERATIONS

The original Wise pattern, as described in 1956 by Robert Wise, MD used a plastic ring around the base of the breast to which a form, designed from various sized bra cups, was attached. The form was obtained from the makers of the Cordelia of Hollywood brassiere and was in fact a bra cup with the tip of the cone removed at the nipple position, opened along the 6:00 vertical of the standing cone. This form determined the skin pattern to be incised with the skin inferior to the pattern representing the skin to be excised. The parenchymal resection was aided by a second plastic form pattern, which secured the breast parenchyma

for an inferior wedge excision, resulting in a superior pedicle. There was no mention of de-epithelializing the skin around the NAC in the original description. The skin flaps were designed and modified by Wise specifically to reduce the rate of necrosis. His proposed technique created skin flaps with a more favorable length to width ratio and less undermining.¹⁻³

Current Wise pattern breast reductions look very different than the original description. They are most commonly performed using an inferior pedicle. Superior pedicles and superomedial pedicles are also common though, particularly when a vertical breast reduction is converted intraoperatively into a Wise pattern to remove excess dog-ear skin at the base. Pedicle design is variable with regard to base width and the amount of parenchyma included with the pedicle. Skin de-epithelialization over the chosen pedicle is still common practice. This maneuver, designed to preserve the subdermal venous plexus and optimize perfusion, continues to be routine for most surgeons, though the need for this practice is not validated.⁴

The skin flap design varies widely depending on the length of the vertical limbs, angle of divergence of the vertical limbs, degree of undermining, and the length of the IMF incision. Use of the McKissock keyhole marker is a commonly used aid, whereas other surgeons, trained to freehand the marks, will always use a cut-as-you-go method. This method saves the NAC placement for the final stage of the procedure allowing for intraoperative modifications of the skin flaps as needed. Parenchymal management techniques may also vary widely, with some surgeons favoring internal shaping sutures and/or liposuction. The overall placement of the Wise pattern on the breast is variable, and nipple position and placement is subject to the surgeons' judgment. Considering this degree of variability, it is understandable that results can vary so greatly.

Aiming for consistent aesthetic results requires an understanding of the target. Ideal breast characteristics include a smooth, rounded lower pole of the breast, medial and lateral definition of the breast on the chest wall, a gradual slope and transition from the chest wall to the nipple, and an upper pole to lower pole ratio of 45:55.^{5,6} Although not all patients' baseline characteristics lend themselves to creating the ideal aesthetic breast, every breast reduction should aim to achieve optimal aesthetic results. This outcome can be achieved in most cases by modifying the standards for traditional Wise pattern measurements as well as by tailoring all measurements to best match each patient's individual breast size, shape, and body habitus (**Fig. 2**).

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