

Perialar Crescentic Advancement Flap for Upper Cutaneous Lip Defects

A 77-YEAR-OLD white woman status post-Mohs micrographic excision of a basal cell carcinoma on the right upper

cutaneous lip presented with a final defect that was 1 × 1 cm (Figure 1). How would you reconstruct this defect?



Figure 1. The final wound defect measured 1 × 1 cm, which is more than 20% of the right lateral subunit of the upper cutaneous lip.

Resolution

Malignant neoplasms are not infrequently found on the upper cutaneous lip, and reconstruction of the subsequent surgical defects can be challenging. However, satisfactory cosmetic results can be achieved if precise reconstruction plans are taken with consideration of the different esthetic subunits present on the upper lip.

The final defect in this case is located on the lateral subunit of the upper lip, an area demarcated by the philtral column (medial border), the nasal sill and ala base (superior border), and the nasolabial and melolabial folds (lateral border). Ideally, the final scar should fall within and not extend the boundaries of the aforementioned anatomic landmarks. In addition, the final appearance should not distort or ablate the natural alar crease, the nasolabial fold, and the upper lip.

There are many options for repairing surgical defects in the lateral portion of the upper cutaneous lip. These include linear closure, island pedicle flap, and skin graft. A linear closure would have resulted in a superior dog-ear taken into the nasal ala. An island pedicle flap, although a good option for repair of this area, often leads to postoperative flap swelling and numbness, which may last several months. A full-thickness skin graft would likely have resulted in poor color and texture match, with a more obvious scar. We chose to reconstruct this defect using a perialar crescentic advancement flap. Webster first described this flap in the plastic surgery literature for repairing large defects that could not be closed with a linear ellipse closure, an approach in this location that inevitably creates the undesirable outcome of ablating the natural alar crease and the nasolabial fold.¹

The perialar crescentic advancement flap works well for defects of the upper cutaneous lip, especially for those located immediately inferior to the nasal sill and close to the melolabial fold. This flap design takes on a variation of the theme in excising Burow's triangles, followed by a cheek advancement flap. The major advantage of this flap is that it preserves and recreates the alar crease while hiding the upper portion of the final scar in the crease. The crucial step of the procedure involves the initial key subcutaneous suture, recruiting skin laterally from the cheek, to approximate the alar crease with the cheek. The suture is placed in the fibrous portion of the alar rim, and the ala should be slightly more everted to preserve the natural contour of the alar rim.

Although the upper portion of the final scar is hidden, the inferior portion may be visible on the upper lip. However, if the defect is close to the philtral column, the infe-

rior portion of the suture line can be incorporated into the philtral column, with marked everting sutures. In addition, in elderly patients with significant deep rhytids on the upper lip, the inferior Burow's triangle can be designed to minimize or hide the scar in relaxed skin tension lines. Occasionally, when repairing large defects, the inferior Burow's triangle needs to extend beyond the vermilion border. In these cases, care is taken to ensure that there is no discrepancy in height between the two edges of the vermilion border at the final closure. Moreover, one should always try to close defects of the cutaneous lip by moving tissue horizontally, thereby creating horizontal tension vectors so as not to raise the vermilion border.

Technique

Local anesthetic solution was injected into the upper lip, nasal ala, and the area above the nasolabial fold. Two Burow's triangles were excised superiorly and inferiorly to the defect. However, the superior excision is crescent shaped rather than triangular, and, more importantly, the medial portion of the crescent excision traces out the alar crease (Figure 2A). Following excision, surrounding tissue lateral to the incision was undermined to the melolabial fold to facilitate movement of tissue medially. With the aid of a skin hook pulling on the superior end of the defect, the cheek was advanced medially toward the ala, and the key subcutaneous stitch using 5-0 poliglecaprone (Monocryl Ethicon, Inc., Piscataway, NJ, USA) was placed to anchor the cheek and the fibrous portion of the alar crease (Figure 2B). Another 5-0 Monocryl suture was used to approximate the two wound edges at the middle portion of the upper lip (Figure 2C). Additional deep sutures were placed to approximate the remaining wound edges, and 6-0 nylon (Ethilon, Ethicon, Inc.) was used to run forward and backward along the entire wound (cross-stitch) to create added eversion for the final epidermal closure (Figure 2D).

In summary, we present an elegant repair option for large defects on the lateral portion of the upper cutaneous lip. This flap reproducibly provides outstanding cosmetic results (Figure 2E).

Conundrum Keys

- The upper cutaneous lip is a cosmetically sensitive and visible area outlined by a number of anatomic landmarks. An optimal reconstruction plan must attempt to preserve these landmarks.

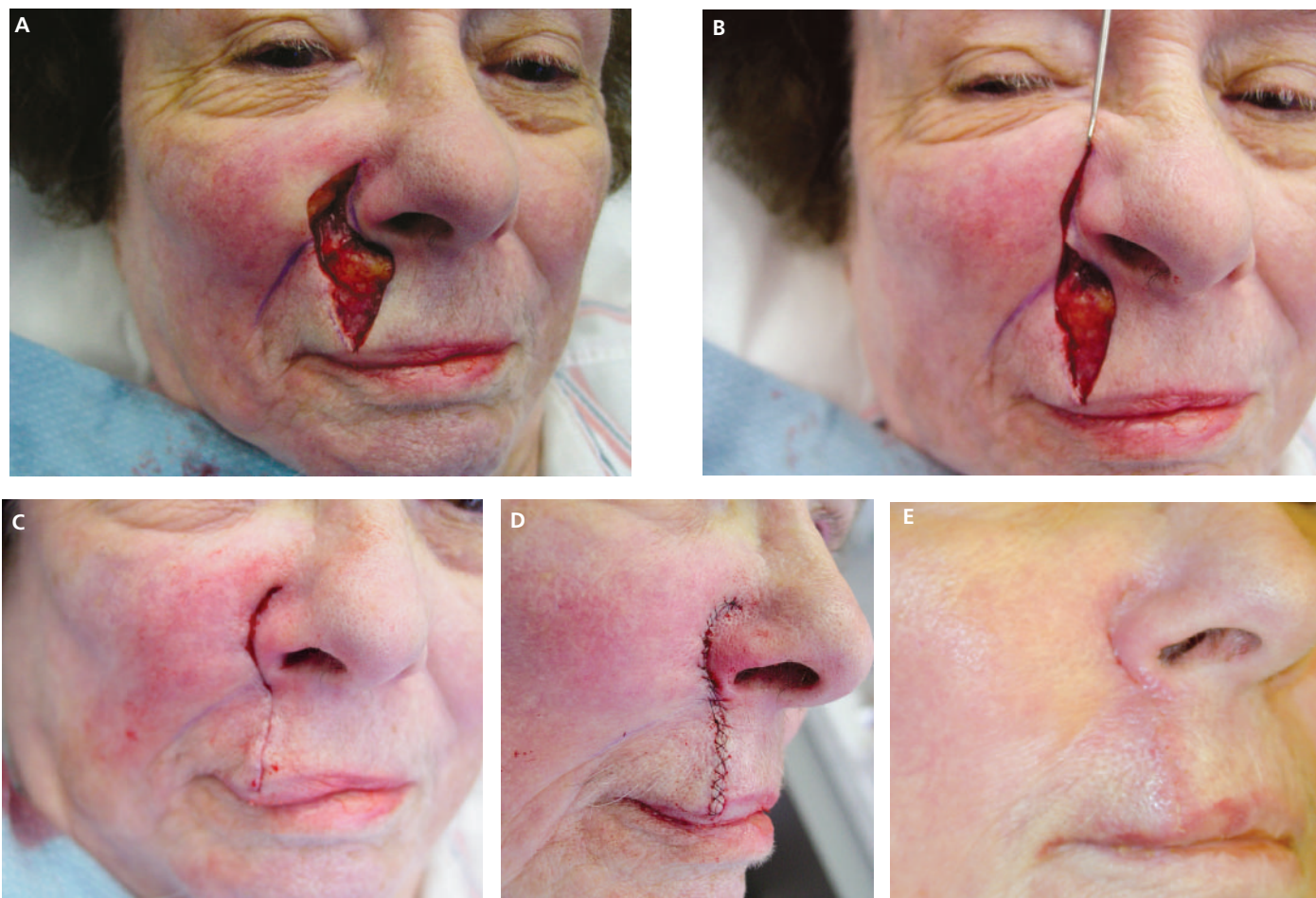


Figure 2. Patient in figure 1. The final wound defect after excision of the inferior Burow's triangle and superior perialar crescent (A); the first and the key subcutaneous suture to anchor and advance the cheek to the alar crease (B); approximation of the entire wound edge with subcutaneous sutures only (C); final wound closure (D); wound appearance at 10 days postoperation (E).

- The perialar crescentic advancement flap can be conceptualized as a procedure that entails removal of Burow's triangles, followed by a cheek advancement flap.
- A crucial step in executing this closure involves the initial key subcutaneous suture that approximates the alar crease with the cheek.

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Reference

1. Webster JP. Crescentic peri-alar cheek excision for upper lip flap advancement with a short history of upper lip repair. *Plast Reconstr Surg* 1955;16:434-64.