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LETTER

Crab claw island pedicle flap for reconstruction of nasal ala and perialar combined large defects

Dear Editor,

Reconstruction of deep surgical defects after skin tumor removal poses a challenge for the dermatologic surgeon.[1] The reconstruction of the nose is especially challenging due to the complex topography of this anatomical area, which is determined by the three-dimensional structure and the intersection of defined aesthetic units in this region.[2]

A 74-year-old female presented with a 2.5 × 1.5 cm, infiltrative, crusted, and mildly painful lesion of her left nostril. The lesion had appeared approximately 1 year earlier and had never been treated. Following the clinical diagnosis of high risk basal cell carcinoma, a surgical excision with 6 mm security margins was performed to achieve complete tumor removal.[3] The final surgical defect involved various aesthetic unit at the confluence of the alar–perialar region: nasal ala, including naso-labial and naso-facial sulcus, alar groove, nasal sidewall, cheek and melo-labial fold, and upper cutaneous lip (Figure 1(A,B)). To restore a good functional and aesthetic outcome, we herein introduce, describe, and illustrate a one-stage repair technique, descriptively named "crab-claw" island pedicle flap (CCIPF). The name choice was determined by the shape and movement of the flap, that resemble the closing of a crab claw around its prey (in this case a basal cell carcinoma).

The CCIPF is an island pedicle flap: the upper and lower arms of the V-shaped flaps were elevated as triangular flaps but remained attached to the main island flap which in turn advances from the cheek region. The advancing island pedicle flap reduces the tension on the surrounding tissue and at the same time guarantees an adequate blood supply.

As per classic island pedicle flap, the length-to-width ratio is not restricted by the 3:1 rule of advancement flaps. Indeed, as shown in Figure 1(A), the length-to-width ratio is only slightly greater than 1:1.

To inset the flap nicely and without tension, it is mandatory to begin the closure by advancing the main island and anchoring it to the surrounding tissue with dermal stiches. Once the main island is advanced and fixed, as in classical island pedicle flap, the two arms can be rotated as needed and sutured in place to recreate the nasal ala, naso-labial sulcus, upper cutaneous lip, cheek, and melo-labial sulcus.

This reparative proposal is a modification of the established subcutaneously pedicled shark island flap[4] which in turn originates from classic island pedicle flap.[5] In fact, this new flap represents a doubled and symmetrical shark island pedicle flap: the superior arm reconstructs the defect located above the naso-labial sulcus, while the inferior arm repairs the defect below the sulcus.

Other surgical techniques have been described to repair alar–perialar defects.[6–9] However, none of these specifically addressed defects that involve also the naso-labial sulcus and upper cutaneous lip. Complex surgical defects usually require complex reconstruction solutions, although it is advisable to choose always the simplest technique that do not impair the oncological follow-up.

After 2 weeks the flap appeared well perfused and ready for suture removal (Figure 1(C)). Aesthetic and functional result is shown 6 months after excision was excellent with harmonic restoration of the alar–perialar structure without retraction. The ala nasi appears consistent with an open and functional nostril (Figure 1(D)). No postoperative complications, such as edema, infection or pain, were observed. Advantages of this flap include donor tissue similarity, rich vascularity and hidden scars, with recreation of the naso-labial sulcus and of melo-labial fold thanks to the underlying muscle movements. Moreover, it is a quite simple and one-stage repair technique. Its main disadvantage is the loss of the alar groove.

We propose this simple modification of the classic shark island pedicle flap procedure to enhance its aesthetic and structural performance with respect to surgical alar–perialar defects that include the naso-labial sulcus and upper cutaneous lip.

The proposed flap is a safe, simple, and economic procedure to repair wide surgical defects of anatomical areas which are commonly affected by skin tumors. It may represent an additional option for dermatologic surgeons.

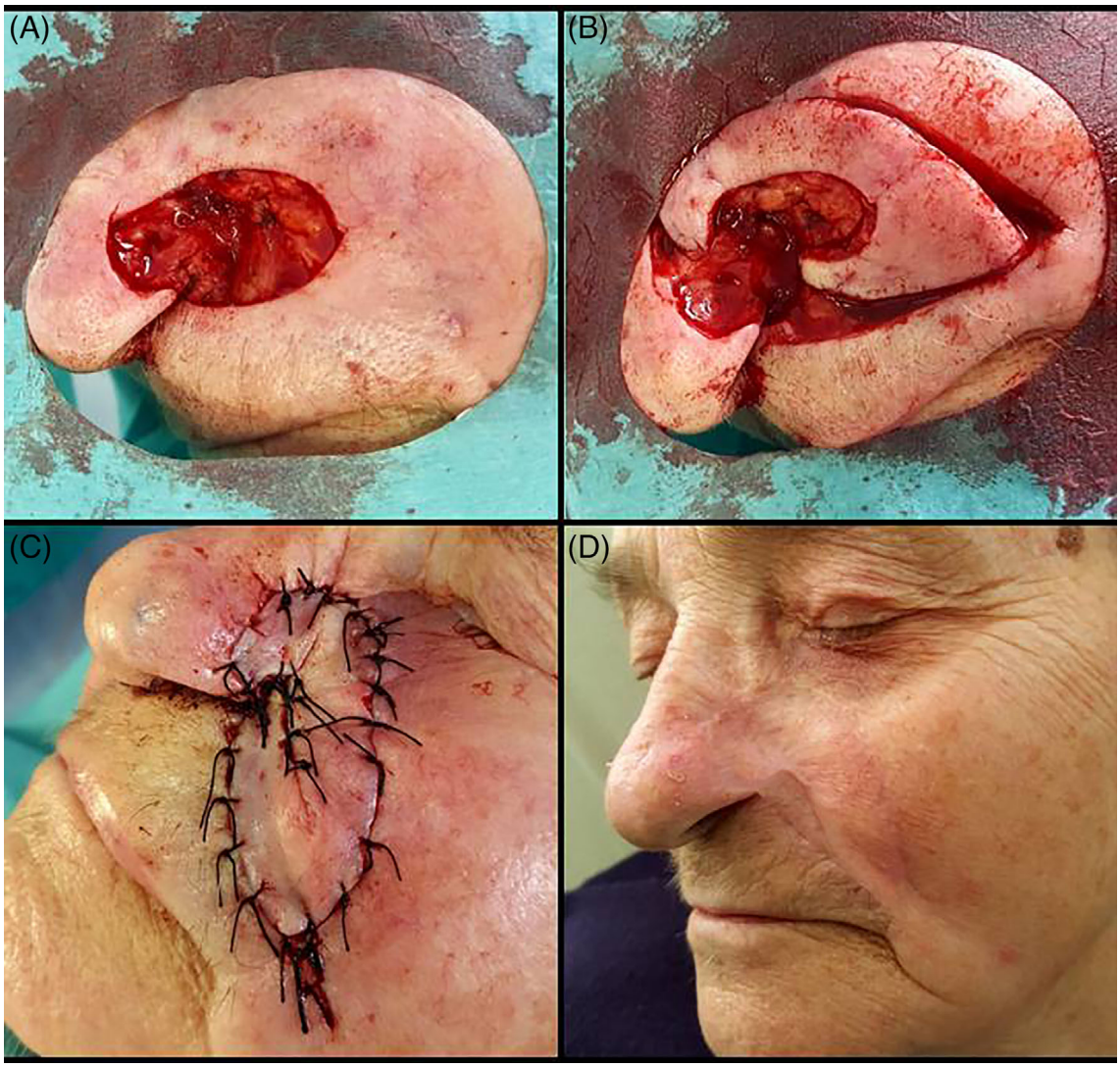

FIGURE 1 (A) Final surgical defect after tumor removal. (B) Sculpted flap with a crab claw shape. (C) Final appearance after flap suturing: the two V-shaped triangular flaps close towards the center of surgical defect like the "claw of a crab" while remaining attached to the main island flap, that, in turn, advances from the cheek region. (D) Result at 6 months after surgical excision. Complete restoration of alar–perialar structure without retraction. The ala nasi appears consistent with an open and functional nostril

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CONFLICT OF INTEREST

The author declares that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

ETHICAL APPROVAL

The authors declare that informed consent and releases to publish photographs has been obtained.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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