"Jigsaw Puzzle" Advancement Flap

Dear Editor,

The repair of a surgical defect involving the lateral nasal ala is challenging and thought provoking because of its distinctive and unique thick and sebaceous skin.

Due to the potential risks of notching or elevation of the alar rim with the use of flaps of the dorsal skin from the superior skin from the nose, the management and resolution of defects concerning the nasal area are commonly accomplished with a full-thickness skin grafts. Nevertheless, full-thickness skin grafts comprise the creation of a second skin defect, lack a primary blood supply, and have a potential different color and/or texture.[1]

An advancement flap of the cheek skin can be used in cases where the defect on the nasal ala is adjacent to the cheek. This surgical technique, previously described by Goldberg *et al.*,[1] was recently described by Alkalay and Alcalay[2] to repair a retroauricular defect of a patient with a large basal cell carcinoma tumor on the retroauricular area, adjacent to the mastoid–auricle border.

Case Presentation

In this article, we describe a series of three patients with nasal ala basal cell carcinomas in whom we used this technique with encouraging clinical and cosmetic results.

From the surgical description in Figures 1–3, it can be understood that this technique demands some surgical expertise and knowledge. Although there is abundant donor skin locally, leading to minimal closure tension, there are some surgical steps worth mention. First, a relevant stage in this surgical approach is the maintenance of the melonasal angle with the advancement flap correctly drawn on the cheek [Figures 1A, 2A, 2B and 3A], with the dog-ears inferiorly along the melolabial fold and superiorly along the melonasal junction. To achieve the best surgical results, the cheek skin must be advanced in the same direction as it normally lies [Figures 1B, 1C and 2B] and fixed directly to the periosteum of the maxilla in the piriform fossa with absorbable sutures. In this surgical approach, the flap is pulled downward and medially into the position on the lateral nasal alar defect [Figures 1D, 2D and 3B]. Second, an important point concerns the

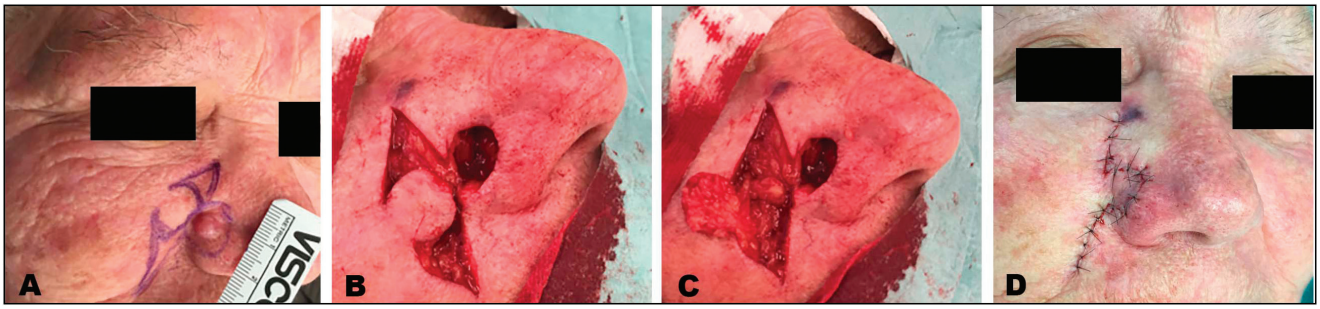

Figure 1: "Jigsaw puzzle" advancement flap in a patient with a nodular nasal ala basal cell carcinoma. An advancement flap is drawn on the cheek with the dog-ears inferiorly along the melolabial fold and superiorly along the melonasal junction (A). The dog-ears are excised and the flap is incised leaving its connection to the underlying skin laterally (B). The subcutaneous fat is trimmed off (C). The secondary defects are closed with subcutaneous sutures from the advancing cheek to the periosteum of the maxillary bone. The closure is complete with running cutaneous sutures (D)

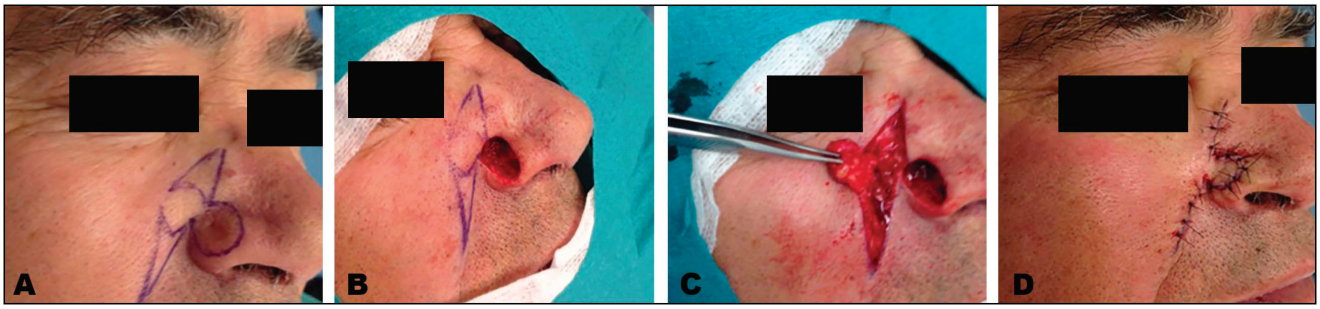

Figure 2: "Jigsaw puzzle" advancement flap in a patient with an ulcerated nasal ala basal cell carcinoma. An advancement flap is drawn on the cheek (A) and the tumor is excised (B). The dog-ears are excised (B) and the subcutaneous fat is trimmed off the skin flap (C). The secondary defects are closed with subcutaneous sutures and the closure is complete with running cutaneous sutures (D)

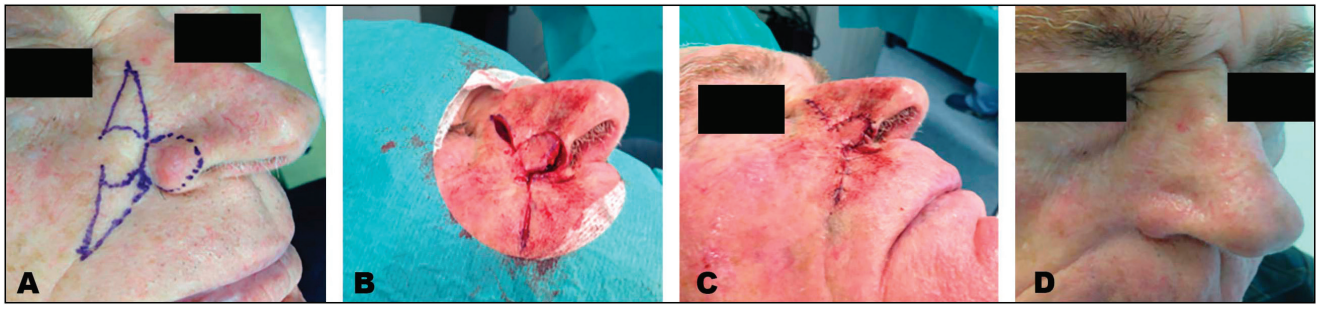

Figure 3: "Jigsawpuzzle" advancement flap in a patient with a nodular nasal ala basal cell carcinoma. An advancement flap is drawn on the cheek (A) and the tumor is excised (B). Immediate surgery outcome (C) and follow-up after 3 months (D)

pedicle of the flap, which should not be made too narrow and should be handled carefully to minimize a reduction in the blood flow and lymphatic drainage to the replacement skin [Figure 2C].

In these clinical cases, in 3 years of regular follow-up [Figure 3D], no signs of local tumor recurrence on clinical or dermatoscopic evaluations or other documented chirurgical secondary side effects concerning this type of advancement flap were reported.

Conclusion

Lateral nasal ala surgical repair is a challenging procedure. In the aforementioned clinical cases, the use of an advancement flap of the cheek adjacent to the defect of the nasal ala with its "head and shoulders" mimicking a jigsaw puzzle piece had a proper and suitable cosmetic result. It not only provided a similar color, texture, and thickness of the skin but also was an excellent way of masking surgical scars as the melolabial fold was used to hide the inferior dog-ear.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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