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‘‘Bilateral nasocheek flap for reconstruction of upper lip, columella and nasal septum: A modified technique’’

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ABSTRACT

There is a great number of medical conditions causing loss of tissue affecting upper lip, nasal base, columella and membranous septum; in our case wide resection of a relapsing squamous cell carcinoma required a challenging reconstruction to preserve function and aesthetics, guaranteeing oncological safety. We propose a modification of classical nasocheek advancement flap, avoiding alar lobule detachment in order to minimize the risk of nasal deformity. Concomitant cartilage graft reconstruction was contraindicated, since the need of adjuvant radiotherapy should not be excluded preoperatively. A single-stage and « single-technique » reconstruction is reported with good functional results and minimal cosmetic deformity at three months post-surgery.

1. Manuscript text

Loss of tissue in the lower third of the nose and the upper lip may result in significant aesthetic and functional deformities [1]. There is a wide variety of medical conditions causing defects at this site, such as ischaemic injuries, trauma, tumor resection, infections and congenital agenesis/dysgenesis of nasal anatomy. Multi-layered defects of the nose and surrounding tissues can pose a significant technical challenge for the surgeon [2].

The main difficulties encountered include the maintenance of the air flow without obstruction due to a potential valve collapse, alar rim carving, and the entire nose complex topographic relationship [3,4]. Other important features to be taken into account when reconstructing defects located at this site are the transposition of well-matched tissue, the preservation of subcutaneous bulk, columella width and nasal columella base, nasal tip, and nasal floor transition areas [5]. Several reconstructive techniques exist from a variety of donor sites; but for limited substance loss an efficient reconstruction is ensured by regional and local flaps [1,6]. We describe a case successfully treated with bilateral nasocheek sulcus flap positioned without alar lobule detachment [7,8].

A 54-year-old caucasian male presented with a relapse of a high-grade squamous cell carcinoma of the columella, involving the membranous septum and the upper lip (rcT1N0) about one year after primary treatment (surgical resection). As universally recognized, wide resection in free margin is the treatment of choice in these cases, and in case of adverse features adjuvant radiotherapy is required [9]. Under general anesthesia, wide resection in free margins was performed, and definitive histopathological examination was consistent with SCC G2 R0.

The resection carried out was extensive and the defect created included upper two thirds of upper lip, vermillion, philtrum, columella, nasal base, and membranous septum (Fig. 1A). We decided to perform nasocheek sulcus advancement flaps described as ideal for covering large defects with excellent results in a single stage with almost no donor site morbidity [7]. Therefore, flap design as described by Akbas et al. [8] was done: bilateral flaps architecture was planned using upper medial, rectangular skin illustrated in Fig. 1B [7].

The right-side flap was harvested as described in literature: since after frozen section intraoperative histopathological examination did not exclude the presence of dysplasia, radicalization was performed and the alar lobule detached. On the left side it was not required, so that the advancement flap was tunneled and partially de-epithelialized to be positioned below the wing edge (Fig. 1B). No area of ischemia or congestion postoperatively was showed. Post-operative period was uneventful.

Three months after surgery good functional results and minimal cosmetic deformity are visible: membranous septum reconstruction is undamaged, the donor sites do not present remarkable scars, the nasal tip shows no significant changes, and the patient confirms persistence of air flow without any obstruction. Skin colour matched optimally with surrounding tissues and structural integrity seems to be maintained with no-use of cartilage graft as reported in other studies (Fig. 1C–D) [10]. In our opinion, to avoid alar lobule detachment as classically described is possible and reduce the risk of post-operative nasal deformity. In addition, a «single-technique » procedure is a valid option after oncological resection when the need of adjuvant radiotherapy should not be excluded preoperatively.

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Ethical approval

The methods were carried out in accordance with the approved guidelines.

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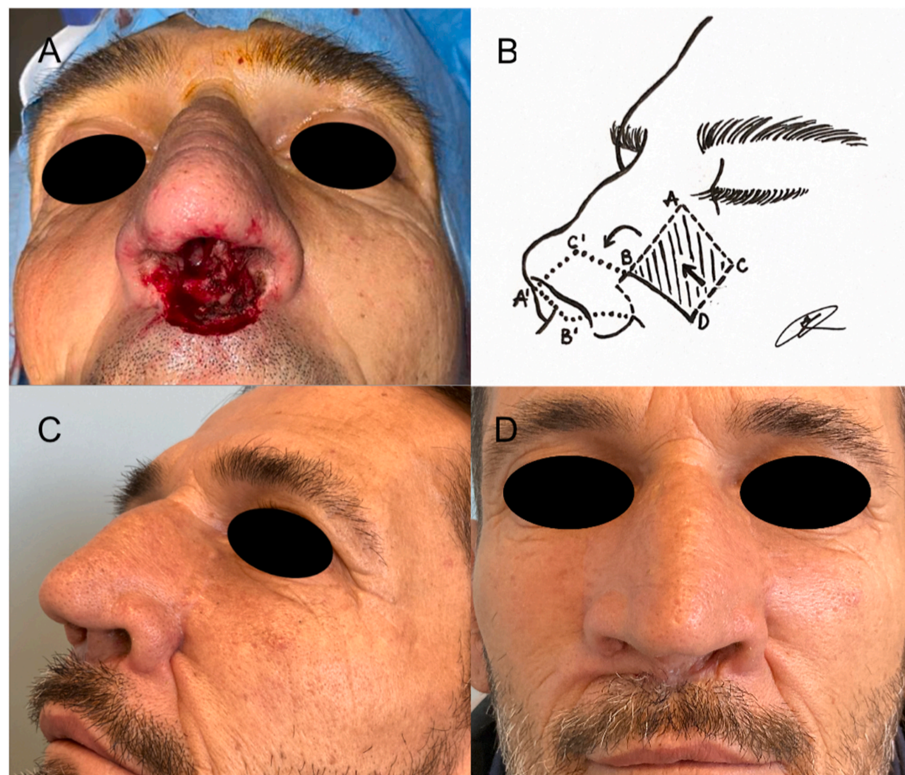

Fig. 1. A) Frontal view of defect after surgery for high-grade squamous cell carcinoma of the columella, involving the membranous septum and the upper lip; B) Nasocheek advancement flap design and tunnelization technique; C) Final results three months after reconstruction-lateral view; D) Final results three months after reconstruction-frontal view.
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Informed consent

The patient provided written informed consent.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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