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Unilateral pedicled myocutaneous island flap for nasal tip reconstruction: a case series

Retalho miocutâneo em ilha com pedículo unilateral para reconstrução da ponta nasal: uma série de casos

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Abstract

Objective: To describe the surgical technique, indications, and clinical outcomes of the unilateral pedicled myocutaneous island advancement flap for nasal tip reconstruction following tumor excision. **Methods:** A retrospective observational study was conducted, including nasal tip reconstructions performed between 2024 and 2025 using a unilateral pedicled myocutaneous island advancement flap at the Unidade Local de Saúde de Almada-Seixal. All procedures were performed under local anesthesia. **Results:** Five patients were included (four women and one man; mean age 63.8 years). All lesions corresponded histologically to basal cell carcinoma, and one reconstruction was performed following Mohs micrographic surgery. In all patients, the flap provided adequate mobility to close the defect without excessive tension or tip elevation. No major complications or flap loss occurred. **Conclusion:** The unilateral pedicled myocutaneous island flap is a reliable and versatile technique for nasal tip reconstruction, offering robust vascularity, good tissue conformity, and preservation of nasal contour. Despite its technical demands and potentially visible scar geometry, this flap is a valuable reconstructive choice for selected nasal tip defects.

Keywords: Basal cell carcinoma. Nasal reconstruction. Nasal tip. Myocutaneous island flap.

Resumo

Objetivo: Descrever a técnica cirúrgica, as indicações e os resultados clínicos da utilização do retalho miocutâneo de avanço em ilha com pedículo unilateral na reconstrução da ponta do nariz após excisão tumoral. **Métodos:** Foi realizado um estudo retrospetivo observacional, que incluiu reconstruções da ponta do nariz realizadas entre 2024 e 2025 com recurso ao retalho miocutâneo de avanço em ilha com pedículo unilateral, na Unidade Local de Saúde de Almada-Seixal. Todas as cirurgias foram realizadas sob anestesia local. **Resultados:** Foram incluídos cinco doentes (quatro mulheres e um homem; idade média 63,8 anos). Todas as lesões correspondiam histologicamente a carcinoma basocelular e uma das reconstruções foi realizada após cirurgia micrográfica de Mohs. Em todos os doentes o retalho proporcionou uma mobilidade adequada para encerrar o defeito sem tensão excessiva ou elevação da ponta do nariz. Não ocorreram complicações graves nem necrose do retalho. **Conclusõe:** O retalho miocutâneo em ilha com pedículo unilateral é uma técnica fiável e versátil para a reconstrução

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de defeitos cirúrgicos ponta do nariz, promovendo uma vascularização robusta, boa conformidade tecidular e preservação do contorno nasal. Apesar da sua exigência técnica e da possibilidade de uma configuração cicatricial mais visível, este retalho é uma opção reconstrutiva valiosa para defeitos selecionados da ponta do nariz.

Palavras-chave: Carcinoma basocelular. Reconstrução nasal. Ponta do nariz. Retalho miocutâneo em ilha.

Introduction

Nasal reconstruction after surgical excision carries substantial cosmetic relevance due to the central and highly visible position of the nose on the face[1]. Successful nasal reconstruction requires meticulous attention to color and texture match, contour, and the symmetry of nasal subunits[2]. Island flaps offer excellent color and texture compatibility as well as tissue conformity; however, the limited mobility of the nasal subcutaneous tissue often restricts their use[2]. Among the possible modifications of the island flap, the use of a unilateral myocutaneous pedicle has been described[3]. This unilateral pedicled myocutaneous island flap enhances flap mobility while preserving its reliable vascular supply[4]. Despite previous descriptions in the literature, case series focusing exclusively on unilateral pedicled myocutaneous island flaps for nasal tip reconstruction remain limited.

The surgical technique is described as follows. The procedure begins with identification of the lesion and surgical margins (Fig. 1A). The course of the facial artery and, subsequently, the angular artery can be visualized. Flap vascularization is provided by branches of the angular artery that accompany the fibers of the transverse nasal muscle (*musculus nasilis, pars transversa*).

A triangular flap is then designed superior to the defect, ensuring that the base of the triangle corresponds to the defect diameter, while the flap length should measure approximately 3 times the defect diameter (Fig. 1B). An incision is made around the flap, creating an island configuration (Fig. 1C). Importantly, the incision along the side containing the intended muscular pedicle is limited to the subcutaneous tissue, thereby preserving muscle integrity. On the side opposite the pedicle, a deeper incision is made down to the nasal cartilage or bone, transecting the transverse nasal muscle (Fig. 1D).

Flap elevation is performed in two distinct planes: first, undermining of the lateral nasal wall ipsilateral to the muscular pedicle within the subcutaneous plane up to the nasofacial sulcus; second, undermining of the

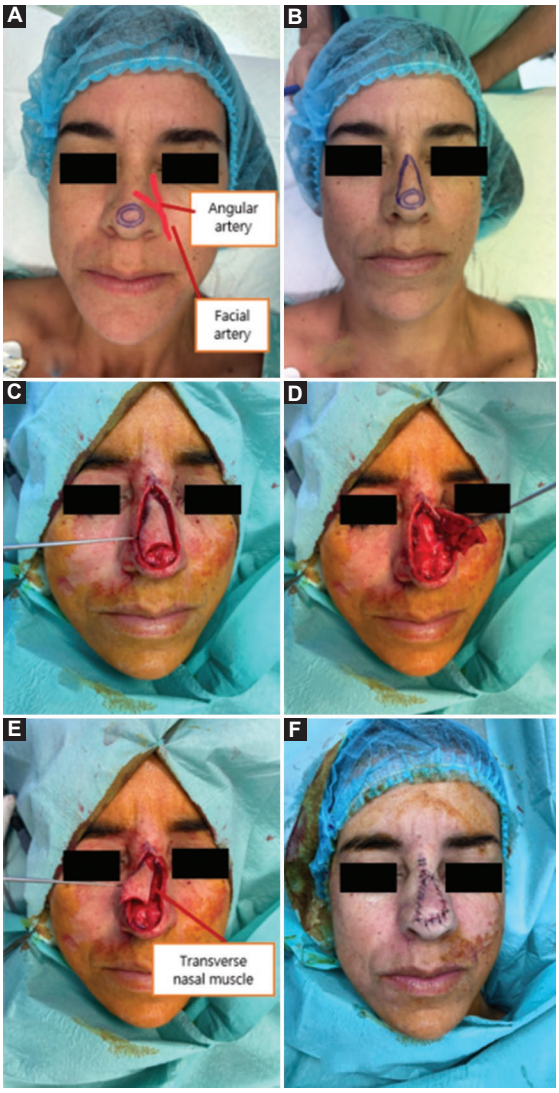

Figure 1. Corresponding to case 1. Surgical steps of the unilateral pedicled myocutaneous island flap for nasal tip reconstruction. **A:** pre-operative marking of the lesion and margins, with the anatomical course of the facial and angular arteries indicated. **B:** design of the triangular skin island superior to the defect. **C:** circumferential incision outlining the Island flap. **D:** creation of the deeper incision on the side opposite the pedicle, extending to cartilage or bone. **E:** identification and preservation of the transverse nasal muscle fibers forming the myocutaneous pedicle. **F:** final result after advancement and V-Y closure.

Figure 2. Corresponding to case 1. Post-operative outcome at 1 month.

flap inferior to the transverse nasal muscle along the lateral nasal wall to the nasofacial sulcus.

The flap is then advanced to cover the defect (Fig. 1E), and closure is performed in a V-Y fashion (Fig. 1F).

Methods

This was a retrospective, observational, single-center study including clinical cases of surgical reconstruction of nasal tip defects performed over a 2-year period (2024-2025) at the Unidade Local de Saúde de Almada-Seixal. All reconstructions were carried out using a unilateral pedicled island myocutaneous advancement flap. Procedures were performed under local anesthesia on an outpatient basis, with no need for hospital admission.

Results

A total of five patients were included in this series, comprising four women (80%) and one man (20%). The mean age at the time of surgery was 63.8 years. One of the reconstructions was performed following tumor excision with Mohs micrographic surgery. Histopathological analysis was available for all five cases. In every patient

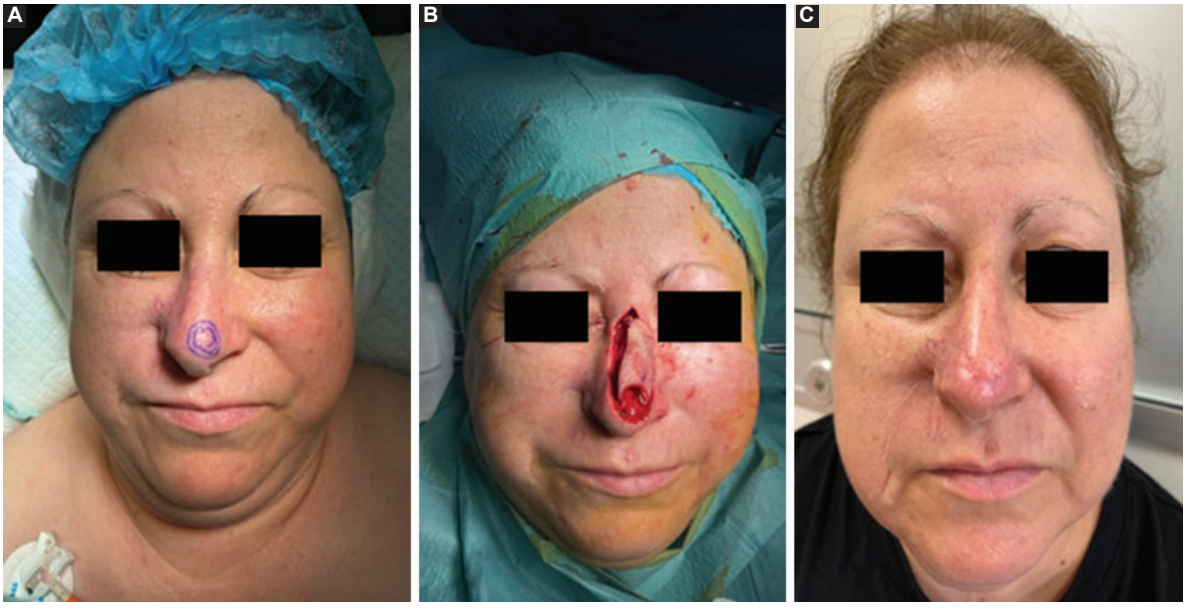

Figure 3. Corresponding to case 2. **A:** pre-operative identification of the lesion and surgical margins. **B:** intraoperative view demonstrating the intermediate stage of flap advancement using the unilateral pedicled myocutaneous island flap. **C:** final esthetic outcome at 2 months postoperatively.

(100%), the excised lesion corresponded to a basal cell carcinoma.

Case 1: A 41-year-old female with a basal cell carcinoma on the nasal tip. This case was used to illustrate the flap design in the introduction (Fig. 1). Primary closure would have generated excessive tension and an undesirable elevation of the nasal tip. An acceptable esthetic outcome was observed at 1 month postoperatively (Fig. 2).

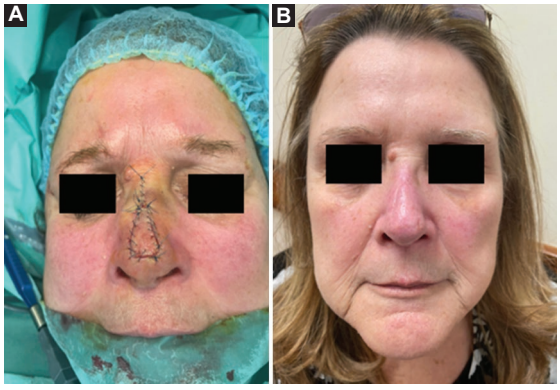

Figure 4. Corresponding to case 3. No pre-operative photograph of the initial lesion is available. **A:** immediate post-operative appearance following reconstruction with a unilateral pedicled myocutaneous island flap. **B:** esthetic outcome at 3 months postoperatively.

Case 2: A 52-year-old female with a basal cell carcinoma on the nasal tip. Reconstruction was performed following Mohs micrographic surgery. A good esthetic outcome was documented at 2 months postoperatively (Fig. 3).

Case 3: A 71-year-old female with a basal cell carcinoma on the nasal tip. A good esthetic outcome was achieved at 3 months postoperatively (Fig. 4).

Case 4: A 75-year-old female with a basal cell carcinoma on the nasal tip. An excellent esthetic outcome was obtained 2 months after surgery (Fig. 5).

Case 5: An 80-year-old male with a basal cell carcinoma on the nasal tip. An acceptable esthetic outcome was noted at 3 months postoperatively (Fig. 6).

Discussion and conclusion

The unilateral pedicled myocutaneous flap is a variant of the island flap with excellent mobility and a reliable vascular supply provided by the angular artery, a branch of the facial artery[1].

Myocutaneous pedicles broaden the indications for island flaps by enabling an alternative source of perfusion. However, their design and elevation are technically demanding[2].

The main advantages of this flap include its robust vascularity, substantial mobility, and excellent color and

Figure 5. Corresponding to case 4. **A:** pre-operative identification of the surgical margins and flap design. **B:** immediate post-operative appearance following reconstruction with a unilateral pedicled myocutaneous island flap. **C:** excellent esthetic outcome at 2 months postoperatively.

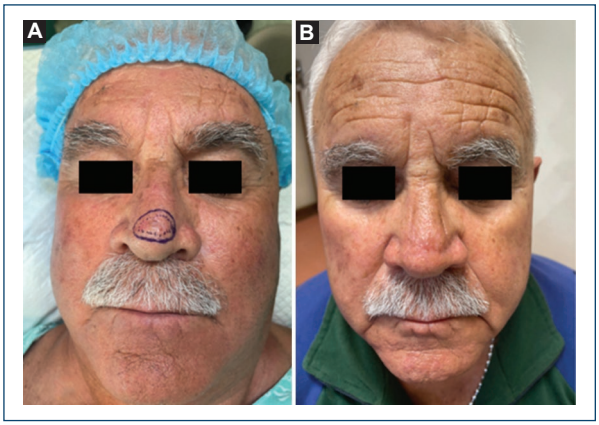

Figure 6. Corresponding to case 5. **A:** pre-operative identification of the lesion and surgical margins. **B:** acceptable esthetic outcome at 3 months postoperatively following reconstruction with a unilateral pedicled myocutaneous island flap.

texture match with the surrounding skin[5], while generally avoiding undesirable elevation of the nasal tip[1].

The main disadvantages relate to its geometric configuration, which may result in a more conspicuous scar.

In this case series, the mean patient age was relatively young (63.8 years), underscoring the need for meticulous attention to reconstructive planning and execution, particularly in esthetic subunits such as the nasal tip. Although the sample size is limited, the consistent post-operative outcomes across all cases support the reliability and versatility of this flap design. Our findings reinforce that this flap is particularly advantageous in younger patients or in those where distortion of the nasal tip must be minimized.

Overall, the unilateral pedicled myocutaneous island flap provides a reliable, safe, and versatile option for reconstruction of distal nasal dorsum and nasal tip defects, particularly when tissue mobility is limited and preservation of nasal contour is essential.

Funding

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Conflicts of interest

None.

Ethical considerations

Protection of human subjects and animals. The authors declare that no experiments on humans or animals were performed for this research.

Confidentiality, informed consent, and ethical approval. The authors have followed their institution's confidentiality protocols, obtained informed consent from all patients, and secured approval from the Ethics Committee. SAGER guidelines have been followed as applicable to the nature of the study.

Declaration on the use of artificial intelligence (AI). The authors declare that no generative artificial intelligence was used in the writing or creation of the content of this manuscript.

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