

## O to Z flaps in facial reconstructions\*

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**Abstract:** Local flaps are the standard procedure to reconstruct facial defects. As it occurs in any surgical procedure, the incision should be planned so that scars are located in the minimum skin tension lines. We report two cases of O to Z flaps in the supra and infraciliary regions. One of them is a hatchet flap.

**Keywords:** Face; Facial neoplasms; Neoplasms; Skin neoplasms; Surgical flaps

### INTRODUCTION

Supra and paraciliary regions anatomically correspond to the forehead, the temporal region and the glabella. In its reconstruction, structures bordering the local anatomy, such as the hairline, in the upper and lateral edge, and the eyebrows, in the lower edge, must be respected. In addition, as it occurs in any surgical procedure, scars must be located in the minimum skin tension lines. These are transversal in these regions, that is to say, parallel to the minor axis of the face.<sup>1</sup>

To reconstruct any facial defect, especially in these regions, local flaps are the standard procedure. As a rule, shaving the eyebrows must be avoided for two reasons: they grow slowly and they must be visible during the surgery to act as a guiding point in the forehead. Attention must be paid to the dissection plane in order to design these types of flaps. The dissection plane must consist of subcutaneous tissue because using a deeper plane to increase viability

would cause an irreparable damage with the motor denervation of the adjacent muscles.

### CASE REPORTS

Two cases of O to Z flaps in supra and infraciliary regions, one of them with the modification of axis flaps, are given as an example.

**Case 1.** A 72-year-old man with a poorly defined sclerodermiform cell carcinoma in the right frontal region, 2 cm in diameter. The carcinoma removal was carried out with an intraoperative anatomopathological margin control (Figure 1A). Performing an exeresis followed by a direct closure usually causes an unacceptable elevation of the eyebrow, so a local flap was indicated. Among the different surgical choices that can be made, simple or double rectangular advancement flaps, their variants A to T and V to T flap closure and rotation flaps are the main ones. O to Z rotation

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flaps, though in their double hatchet modification (Figure 1B) were considered as a good therapeutic choice because, among other reasons, the oblique scar left in this anatomical subunit produces acceptable results in patients with a prominent frontal lateral curvature. Once the flap was designed, the tumor exeresis and the flap were performed. After four months, both ciliary retraction and a correct position of the right eyebrow were observed (Figure 1C).

**Case 2.** A 31-year-old woman with a verrucous epidermal nevus located in the right infraciliary region, in the superior infraorbital rim (Figure 2A). In this particular case we decided to make an O to Z flap (Figure 2B) which, as in the previous case, showed no ciliary retraction in the post surgical revision after 3 weeks (Figure 2C).

**DISCUSSION**

An O to Z flap consists of a double rotation flap whose pedicles split in opposite directions to the vertical of the defect. They are marked from the upper and bottom edges of the circular defect and they need a basis that is 1.5 times bigger than the largest diameter. It is so called because the primary defect is round

or oval and, after the rotation of the flaps is performed, the final suture achieves a Z appearance.<sup>2</sup> Depending on the compliance of the anatomical region in which these flaps are performed, a Burow’s triangle can be made on both ends or, as we usually do, the discharge triangle or incision can be made along the elliptical suture to adjust the lateral arms of the Z properly.<sup>3</sup> This type of flap allows closing circular defects and is really useful in convex areas. Besides, it is usually and easily performed in the upper eyelid, where the aesthetic results are outstanding.

Hatchet flaps are rotation and sliding flaps. They are so called because their design consists in using the upper edge of the circular defect in one extreme and, in the other extreme; an incision is made in the angle to close it directly by moving forward the V to Y flap.<sup>4</sup> Although the principal disadvantage of this type of flap is that the rotation is made on a narrow pedicle, it does not usually cause problems in highly vascularised areas such as the face.<sup>5</sup>

O to Z axis flaps do not show Burow’s triangles, as they use the incision in the angle of the extremes to move forward to the center of the flaps.

In conclusion, making a proper reconstruction of the supra and paraciliary regions implies keeping



**FIGURE 1:** A. Sclerodermiform lesion with poorly defined edges in the right frontal region. B. Design of the double rotation axis O to Z flap. C. Clinical image 4 months after the surgery. No ciliary retraction observed



**FIGURE 2:** A. Epidermal nevus localized in the right infraciliary region. B. Design of the double O to Z flap. C. Clinical image 3 weeks after the surgery

eyebrow symmetry and respecting the temporal and frontal hairlines. In order to achieve this, rotation flaps are excellent to reconstruct paraciliary defects as they can even keep the bone curvature.

In addition, they prevent direct closure and subsequent eyebrow elevation (ciliary asymmetry).

Therefore, when they are anatomically possible, rotation flaps are the best solution for most of the defects located in the paraciliary region. Both O to Z rotation flaps and hatchet rotation flaps are optimal to avoid modifications and to respect the ciliary regions.<sup>1,2</sup> □

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