

# Mustardé Flap for lower eyelid reconstruction.

## A case report

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Case report

Plastic Surgery



**Background:** Lower eyelid tumors require complex reconstructive procedures, especially when they involve the entire thickness of the eyelid: skin, muscle, tarsus and conjunctiva. The main goal of reconstruction is to create a functional and aesthetically acceptable lower eyelid with minimal morbidity for the patient. We present the case of a patient reconstructed with myocutaneous flaps using the Mustardé technique. The aim of this work is to make a review of the surgical use of the advancement and rotation flap described by Mustardé, in a case of a basal cell carcinoma affecting the lower eyelid. the Mustardé cervico-facial flap. First described by Mustardé in 1971, it has been used mainly for the reconstruction of extensive areas of skin located on the cheek, temple and eyelid. It is traditionally performed through an incision that surrounds the aesthetic unit of the cheek at its junction with the aesthetic unit of the lower eyelid, extending to the preauricular region and extending vertically even to the neck, according to the size of the defect to be reconstructed. It is the simplest procedure with the most consistent results, both in partial and total defects. Eyelid reconstruction remains a surgical challenge in reconstructive surgery. Detailed knowledge of eyelid anatomy and function is essential when the surgeon is faced with a patient with a tumor that affects the eyelid. Aesthetic restoration of anatomy and function is the surgical goal in reconstruction of traumatic lower lid defects.

**Keywords:** Lower eyelid, Mustardé flap.

Lower eyelid tumors require complex reconstructive procedures, especially when they involve the entire thickness of the eyelid: skin, muscle, tarsus and conjunctiva. The main goal of reconstruction is to create a functional and aesthetically acceptable lower eyelid with minimal morbidity for the patient. In addition, one of the most common complications after eyelid surgery, ectropion, must be avoided, so it is very important to give a rigid support to the reconstructed eyelid, and reconstruction of the muscular plane is not strictly necessary. The ideal flap for an adequate total or partial reconstruction of the lower eyelid should provide sufficient height and support, a deep conjunctival fornix, a good canthal position and should use tissues as similar as possible to the natural skin coverage of the eyelid.

Many reconstructive techniques have been described in the literature but there is still no technique that is considered ideal for the coverage of these defects.

We present the case of a patient reconstructed with myocutaneous flaps using the Mustardé technique. The aim of this work is to make a review of the surgical use of the advancement and rotation flap described by Mustardé, in a case of a basal cell carcinoma affecting the lower eyelid.

### Case report

We present the clinical case of a 65-year-old male patient treated in a second level center. The patient had no important pathologic personal history, he was referred by his family physician for presenting a tumoral lesion of approximately 1 year of evolution in the lower eyelid (Figure 1A). Due to the location and characteristics of the tumor, it was decided to perform surgical resection of the lesion.

Under sedation, once the delineation is done (Figure B), a solution containing lidocaine with epinephrine is infiltrated subcutaneously, with a latency time of 10 minutes, in order to achieve a vasoconstrictor effect. The skin is incised and the tumor lesion is resected, the the skin of the flap is dissected in the subcutaneous plane above the superficial musculoaponeurotic system (SMAS) (Figure 1C), verifying hemostasis during dissection. The dissection of the skin flap is performed and the medial edge of the flap is rotated over the lower eyelid defect.

The dermocutaneous closure was performed in two planes, facing the first with absorbable material (Figure 1D and 1E) placing subcutaneous lamellar drainage and the cutaneous closure with simple suture

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**Figure 1.** A. Delineation of the tumoral lesion in the first medical consultation. B. Delineation of the surgical margins. C. Skin is incised and dissected in the subcutaneous plane above the superficial musculoaponeurotic system. D. The dermocutaneous closure was performed in two planes, facing the first with absorbable material. E. The dermocutaneous closure was performed in two planes, facing the first with absorbable material. F,G. Cutaneous closure with simple suture with 5-0 nylon, ending the surgical procedure. H,I. Post op picture at 7 months after surgery

with 5-0 nylon, ending the surgical act (Figure 1F and 1G).

The pathologic anatomy reported basal cell carcinoma. Figures 1H and 1I show the results 7 months after surgery. The postoperative aesthetic and functional result of the patient was good.

## Discussion

Skin cancer is the most frequent malignant neoplasm in humans and represents a worldwide public health problem. Its incidence has increased in recent decades. Worldwide, 2 to 3 million cases of non-melanoma skin cancer are registered each year (1). In Mexico, the most common non-melanoma skin cancer is basal cell carcinoma, which represents between 75 and 80% of malignant skin tumors (2). Basal cell carcinoma is the most common of all. It is characterized by being locally invasive, slow growing and with low risk of metastasis, however, if it is not treated in a timely and adequate manner it has the capacity to cause great destructions, and certainly the facial ones are the most frequent (1, 2). Squamous cell carcinoma represents the second place and is capable of producing metastasis to regional lymph nodes with a mortality rate of 25%. It is fast growing and frequently appears on precancerous lesions such as actinic keratoses, chronic ulcers, etc. (2).

The treatment of choice for skin cancers is conventional surgery, during which wide margins must be provided to ensure complete resection of the tumor tissue. This causes residual defects in the skin covering which, depending on their extension, can be resolved in a simple manner by primary closure or with the use of skin grafts.

There is a great variety of surgical techniques to reconstruct the skin cover, in the patient of this case we used the Mustardé cervico-facial flap. First described by Mustardé in 1971, it has been used mainly for the reconstruction of extensive areas of skin located on the cheek, temple and eyelid (3). It is a random pattern skin flap irrigated by the facial artery system and perforator of the superficial musculoaponeurotic system (SMAS). It is traditionally performed through an incision that surrounds the aesthetic unit of the cheek at its junction with the aesthetic unit of the lower eyelid, extending to the preauricular region and extending vertically even to the neck, according to the size of the defect to be reconstructed (4). It is the simplest procedure with the most consistent results, both in partial and total defects. When the defect is subtotal, it provides the simplest and fastest reconstruction. When the defect is large or remains in the external half of the eyelid it is necessary to line it. Although the nasal mucosa is a good substitute for the conjunctiva, the best cover and

support is provided by a chondromucosal graft of the nasal septum, as described by Mustardé (5).

Its main advantages are: the reliability in its perfusion, the use of tissues adjacent to the lesion and the localization of the scars in the edges of the aesthetic units. Therefore, its use is proposed as one of the main options for the management of oncologic defects of the lower eyelid and cheek in our patients (4,6).

As disadvantages, it should be pointed out that the dissection of this flap is wide and the operation must be performed under general anesthesia; ectropion and epiphora are frequent in the late period due to the action of gravity and scar contraction, and there is also the possibility of damage to the frontal branch of the facial nerve (6, 7, 8).

## Conclusion

Eyelid reconstruction remains a surgical challenge in reconstructive surgery. Detailed knowledge of eyelid anatomy and function is essential when the surgeon is faced with a patient with a tumor that affects the eyelid. Aesthetic restoration of anatomy and function is the surgical goal in reconstruction of traumatic lower lid defects.

No single surgical technique can correct all defects, so understanding the variety and range of surgical techniques allows reconstructive surgeons to provide the best surgical plan for patients undergoing lower eyelid reconstruction.

## Conflicts of interests

There are no conflicts of interest

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