

Lower eyelid reconstruction with Mustardé flap. A case report

Luis Yair Nevárez Gamboa M.D.
José Luis Villarreal Salgado M.D.
Javier Eduardo Cendejas Acosta M.D.
Oscar Antonio Magallón Gómez M.D.
Carlos Enrique Luna Guerrero M.D.
Ilse Melissa Saldivar Gomez M.D.

Chihuahua, Mexico

Case report

Plastic Surgery



Background: Basal cell carcinoma (BCC) is the most frequent skin cancer¹. This carcinomas are the most frequent skin cancers in the fair-skinned adult population over 50 years of age. We report a case of a 90-year-old women that presented to the clinic with a pediculated wart in the left lower eyelid. The physical exploration revealed an exofitic lesion, brown color, with 2 cm in diameter and irregular edges. A full-thickness resection of the lesion was made with a margin of 0.5 cm and without impairing the left lower eyelid or the canthus using a Mustardé flap as the surgical technique for reconstruction. The biopsy report revealed a basal-cell carcinoma with clear margins. A one-month postoperative follow up showed no complications. This technique offers an excellent option for reconstruction of lower eyelid related defects due to its simplicity and good aesthetic results.

Keywords: Mustardé flap, basal cell carcinoma, eyelid reconstruction.

Basal cell carcinoma (BCC) is the most frequent skin cancer¹. This carcinomas are the most frequent skin cancers in the fair-skinned adult population over 50 years of age. Their incidence is increasing throughout the world. Basal cell carcinomas are heterogeneous, from superficial or nodular lesions of good prognosis to very extensive difficult-to-treat lesions². This kind of lesions located in the eyelid are difficult to reconstruct due to their resulting anatomic and functional defect. Although there are plenty options for treatment, the gold standard is surgical excision with histological control of excision margins³. There are many surgical techniques for reconstruction and we show a case report of a lower eyelid lesion reconstructed with a Mustardé flap in the left eye.

Case report

A 90-year-old female presented to the hospital referring 10-year history of a pediculated wart in the left lower eyelid which detached 2 years ago and had an inadequate healing. It also had an accelerated growth of the lesion plus burning sensation since the wart detached. The physical exploration revealed an exofitic lesion on the lower eyelid of the left eye, brown color, with 2 cm in diameter and irregular edges. No ulcers or secretion was observed (Figure 1a, 1b). A full-thickness wide resection of the lesion was made with a margin of 0.5 cm and without impairing the left lower eyelid or the canthus, reconstructing the area with a Mustardé flap. We made a transversal and posterior temporal incision, beginning in the internal canthus and finishing in the preauricular fold including

the lesion. The flap fixation to the orbicular periosteum was made (Figure 2a, 2b). The biopsy report revealed a basal-cell carcinoma with clear margins. A one-month postoperative follow up is shown in figure 3. No complications were observed at this point.

Discussion

Basal cell carcinoma (BCC) is the most common type of non-melanoma skin cancer (NMSC) and can sometimes affect the eyelids, where it represents up to 90.8% of NMSC lesions⁴. BCC treatment is primarily directed at local control given its low metastatic potential. Mohs Micrographic Surgery has superior long-term cure rates compared with other treatment modalities and is the treatment of choice for high-risk and recurrent BCC. For superficial tumors or patients who cannot tolerate surgery, topical and nonsurgical methods are available, such as Curettage and electrodesiccation, cryosurgery, photodynamic therapy, radiation, topical therapies or systemic therapies. BCC is a slowly growing tumor that can generally be cured easily with office-based surgical methods⁵. The goals of eyelid reconstruction are maintenance of eyelid contact with the eyeball without inward or outward turn of the margin and reproduction of color and texture of the eyelid following the aesthetic subunit with minimal sacrifice⁶. The main advantages of the Mustardé flap are the adequate blood supply of the flap, the use of near tissues and keeping the scars into de aesthetic units⁷. Reconstruction of the anterior lamella of the lower



Figure 1. Front and side pictures of lower eyelid lesion.

eyelid with a Mustardé cheek rotation flap meets the basic criteria of an ideal skin flap: excellent skin color and texture matching, placed in position in a single surgical procedure⁸. The Mustardé flap is a reliable and versatile technique with a large donor area and sufficient blood supply⁹. This technique offers an excellent option for reconstruction of lower eyelid related defects due to its simplicity and good aesthetic results.

Conclusion

This case is a tangible example of the versatility of the Mustardé flap. The basal cell carcinoma is the most common type of skin cancer worldwide. Although there are more options for the treatment of this kind of carcinoma, the surgical resection remains as the gold standard. The lesion in the lower eyelid was properly removed and on time treatment was possible due to the low risk of malignancy. The Mustardé flap is an excellent option for reconstruction in this zone, is simple and the aesthetic results are very acceptable. Inherent complications of this kind of flap are not relevant compared to the advantages it offers, and it's not difficult to see why it's widely used by surgeons recently.



Figure 2. A. Surgical planning. B. Result of Mustardé flap.



Figure 3. One month follow up.

Acknowledgements

To all the residents and surgeons from the Reconstructive and Plastic Surgery Department of the Regional Hospital “Dr. Valentín Gómez Farías”.

References

1. Bernardini N, Skroza N, Zuber S, Tolino E, Balduzzi V, Mambrin A, et al. Face and scalp basal cell carcinoma treatment: A review of the literature. *Acta Dermatovenerol Croat.* 2019;27(1):22–7.
2. Basset-Seguin N, Herms F. Update in the Management of Basal Cell Carcinoma. *Acta Dermato Venereologica.* 2020;100(11):adv00140.
3. Berking C, Hauschild A, Kölbl O, Mast G, Gutzmer R. Basal Cell Carcinoma. *Deutsches Aerzteblatt Online [Internet].* 2014 May 30;
4. Vaccari S, Barisani A, Schiavi C, Baraldi C, Pepe F, Roda M, et al. Basal cell carcinoma of the eyelid margin: Dermoscopic clues in a case series. *Dermatologic Therapy.* 2021 Jun 2;34(4).
5. Kim DP, Kus KJB, Ruiz E. Basal Cell Carcinoma Review. *Hematology/Oncology Clinics of North America.* 2019 Feb;33(1):13–24.
6. Miyamoto J, Nakajima T, Nagasao T, Konno E, Okabe K, Tanaka T, et al. Full-thickness reconstruction of the eyelid with rotation flap based on orbicularis oculi muscle and palatal mucosal graft: Long-term results in 12 cases. *Journal of Plastic, Reconstructive & Aesthetic Surgery.* 2009 Nov;62(11):1389–94.
7. Hernández AF, de la Paz MMF, Rogel RF, et al. Reconstrucción del párpado inferior mediante colgajo tipo Mustardé e injerto de concha auricular. *Cir Plast.* 2018;28(1):27-31. doi:10.35366/CP181E.
8. Ibáñez-Flores N, Bruzual-Lezama C, Castellar-Cerpa JJ, Fernández-Montalvo L. Reconstrucción de párpado inferior mediante injerto de pericráneo y colgajo de Mustardé. *Archivos de la Sociedad Española de Oftalmología.* 2019 Oct;94(10):514–7.
9. Yan Y, Fu R, Ji Q, Liu C, Yang J, Yin X, et al. Surgical Strategies for Eyelid Defect Reconstruction: A Review on Principles and Techniques. *Ophthalmology and Therapy.* 2022 Jun 11;11(4):1383–408.

Luis Yair Nevárez Gamboa
Department of General Surgery
Institute of Security and Social Services for State Workers
Zone General Hospital in Ciudad Juárez
Chihuahua, México