

Advancement flap for facial squamous cell carcinoma reconstruction. A case report

Itzel Areli Murillo Moreno M.D.

Silvia del Carmen Prado Rico M.D.

Baja California, Mexico

Case Report

Plastic Surgery



Background

Cutaneous squamous cell carcinoma is a malignant neoplasm that originates from the keratinocytes of the skin or mucosa, and is considered the second most common cancer in the head and neck after basal cell carcinoma. Its etiology is multifactorial, the predisposing factor being prolonged sun exposure (ultraviolet radiation), which directly affects cellular DNA. It is extremely important to know prognostic factors such as: tumor size, depth, histological type, perineural invasion, risk areas and drainage areas, which will increase the risk of recurrence and distant metastasis, significantly impacting the prognosis of the patient. The treatment of squamous cell carcinoma can be multimodal, from surgery, radiotherapy and chemotherapy. Facial reconstruction after resection will be faced according to the aesthetic unit of the face, which will determine the surgical technique to be used. In this case we present an 82-year-old man with a lesion located on the right cheek of 5 years duration, which was managed with resection of the tumor and subsequent reconstruction using a mustardé flap. The histopathological report revealed a squamous cell carcinoma with disease-free margins. During the postoperative course, complete vitality of the flap was observed, with satisfactory results, both aesthetic and functional.

Keywords: Squamous cell carcinoma, head and neck reconstruction, advancement flap.

Skin cancer is one of the most frequent neoplasms in Mexico, every year 13,000 new cases are registered, with EC being the second most common skin neoplasm, after basal cell carcinoma, with an estimated risk to life of 7 to 11. %, increasing its incidence considerably over the last 20 years. EC of the skin, also called squamous cell carcinoma or squamous cell carcinoma, is a malignant neoplasm that originates from epidermal keratinocytes or from the epithelium of the oral or genital mucosa. The annual incidence of cutaneous EC varies depending on altitude and geographic region. ECs can appear anywhere on the body, but most of them are related to areas of greater sun exposure. Cutaneous EC has a multifactorial etiopathogenesis, with exposure to ultraviolet radiation being the most important risk factor for its development. Most patients report a history of prolonged sun exposure. Ultraviolet B (UVB) radiation causes mutations and essential immunosuppressive effects in light-induced carcinogenesis processes; photocarcinogenesis. Such effects are limited to the epidermis and include alteration of DNA form and function. Historically, this neoplasia has been managed either with a single therapeutic modality (surgery or radiation) in the initial stages, or in combination (generally surgery followed by radiation) in advanced stages. The treatment of choice is Mohs micrographic surgery or

standard surgery with sufficient margins so that the edges are free of neoplastic infiltration. According to the National Cancer Institute in the United States (NCI), it recommends leaving a minimum margin of 4 mm in tumors smaller than 2 cm, and a minimum of 6 mm in tumors larger than 2 cm. In depth, covering the entire subcutaneous cellular tissue. In conclusion, surgery remains an excellent option with the use of skin flaps for post-resection closure of the tumor.

Case report

This is an 82-year-old male patient, originally from La Paz, Baja California Sur, retired. Within his pathological history, he reported systemic arterial hypertension of 10 years of evolution; His non-pathological personal history highlights chronic sun exposure, smoking for 10 years, stopped 20 years ago.

His current condition began approximately 5 years ago, which began with the appearance of a spot on the right cheek, which grew, and evolved into an ulcerated lesion with a bloody crust, which bleeds occasionally. He attended the plastic surgery service referred by dermatology for moderately differentiated invasive squamous cell carcinoma in the right malar region with an involved bed.

On physical examination, the patient with apparent chronological age, oriented in space, time and person, presented with a lesion located on the right



Figure 1. Upper: Side view. Lesion located on the right cheek. Middle: Side view. Defect secondary to resection of squamous cell

(Figure 1. Cont'd) carcinoma. Lower: Side view. Postoperative result after reconstruction at two weeks of follow-up.

cheek, 0.8 mm from the external canthus, with raised edges, erythematous, and not painful on palpation (Figure 1). Pulmonary, cardiovascular and abdominal evaluation without apparent alterations. It was decided to resection the residual lesion of the external canthus and right cheek, with reconstruction using a Mustardé-type flap. (Figure 2).

Discussion

The presentation of EC in the head and neck continues to occupy second place in malignant skin neoplasms worldwide, having a varied clinical presentation and a multifactorial etiology, with solar radiation being the greatest predisposing factor. Likewise, the presentation of EC is associated with prognostic risk factors such as: size, depth, perineural invasion, histological type, high-risk anatomical areas, drainage areas, as well as the association with human papillomavirus infection, increasing the degree of malignancy, which leads to a greater risk of recurrence and distant spread. Surgical resection must respect perfectly defined rules for the histopathological type of each tumor in order to have healthy margins and thus limit the risk of recurrence. Therefore, the collaboration of the pathologist is essential to study these margins, either extemporaneously and, if possible, according to the Mohs micrographic method, or deferred, using two-stage surgery. Repair techniques are numerous and must take into account the age of the patient, the size of the skin resection and many factors, such as Langer or Kreise lines, skin elasticity, etc. Reconstruction with a Mustardé cheek rotation flap meets the basic criteria of an ideal skin flap: excellent skin color and texture match, placed in position in a single surgical procedure. The temporojugal advancement-rotation skin flap, first described by Mustardé in 1971, has been used primarily for loss of areas of the cheek, temple, and lower eyelid.

Conclusion

It is essential to teach the first contact doctor to identify patients at high risk of head and neck cancer, symptoms and incipient signs, as well as to disseminate the damage caused by prolonged solar radiation, from the early stages of life, which that would avoid enormous repercussions, not only in the loss of people of reproductive age, but in the quality of life of the survivors. The choice of surgical technique will depend on the histological characteristics of the tumor, its size, depth and location. We must also assess the general condition and age of the patient. The

main objective, as in any oncological surgery, will be the radical removal of the tumor, and the secondary objectives are to avoid distortion of local structures and achieve the best aesthetic result. The Mustarde cheek rotation flap is a useful, safe and effective technique for treating wide excisions of non-melanoma skin cancers on the cheeks and lower eyelids. The case of a patient with squamous cell carcinoma on the right cheek was presented, who was treated by excision and reconstruction with a mustardé flap, obtaining optimal aesthetic and functional results.

Conflicts of interests

There was no conflict of interest during the study, and it was not funded by any organization.

Acknowledgements

Special thanks to Dr. Silvia del Carmen Prado Rico, plastic and reconstructive surgeon at Hospital General La Paz, B.C.S for her contributions to carry out this report.

References

1. Morales LO, Garduño MJE. Recurrent cutaneous squamous cell carcinoma in the frontal region: Review of the literature and clinical case report. *Rev ADM.* 2017;74(5):239-244.
2. C. Beauvillain de Montreuil, A. Jourdain. Surgical treatment of facial skin tumors. *Elservier.* Volume 23, Issue 1, May 2022, Pages 1-14.
3. Navarrete N., Nelson H. Reconstructive challenges: Mustardé flap associated with island flap. *Rev. niño. dermatol ;* 24(3): 248-249, 2008.
4. Olmos, Miguel, Portilla, Nataly, Castro, Carlos. Surgical treatment and reconstruction of periorbital cancer. *Colombian Association of Dermatology and Dermatological Surgery.* Vol. 21 No. 3 (2013): July – September.
5. Huentequeo-M, Claudio, Siso-C, Saúl, Unibazo-Z, Alejandro, Pino-D, Daniel, Alister-H, Juan Pablo, Mayer-O, Cristopher, & Olate, Sergio. (2021). Local Flaps in Facial Reconstruction. Treatment alternatives. *International Journal of Odontostomatology*, 15 (2), 538-550.
6. YO Iglesias,R. Santesteban, A. Larumbe. Oncological surgery of the eyelid and orbital region. *Dermo-Syphiliographic Records* Volume 106, Issue 5, June 2015, Pages 365-375.
7. Arias Soto, Julio Cesar, Abreu Perdomo, Franklin A., Ortiz Silveira, Marlenys, Despaigne Delisle, Justo, & Matienzo Vergara, Sulli de la Caridad. (2013). Reconstruction of the lower eyelid after excision of malignant tumors. *MEDISAN*, 17 (7), 2053-2058.

Itzel Areli Murillo Moreno
General Surgery Department
Hospital General ISSSTE
La Paz, Baja California Sur, México