

Facial reconstruction for basal cell carcinoma. A case report

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Background

Skin cancer is one of the most frequent neoplasms in México, squamous cell carcinoma has an aggressive behavior, invading deep tissue and more risk of metastasis. The resection of this type of lesion leads to a defect that needs to be covered and is when a reconstructive surgeon needs to perform some techniques like skin flaps. In this case, we present an 82-years-old female with an ulcerated lesion on the nasal dorsum, left nasal wing, and inner third of the cheek, having a positive biopsy for highly differentiated squamous carcinoma. It was handled with a cervicocutaneous flap with favorable clinical evolution.

Keywords: Skin cancer, facial reconstruction, basal cell carcinoma.

Jalisco, Mexico

Case report

Plastic Surgery



Skin cancer is one of the most frequent neoplasms in México, each year there are 13,000 new cases, with squamous cell carcinoma, the second most frequent cutaneous neoplasm, after basal cell carcinoma [1] with a risk suffering of 7 to 11%. A very low percentage of basal cell carcinoma has aggressive behavior, while the squamous cell has a more aggressive behavior, being severe and destructive in the head and neck [2]. The treatment of choice consists of a complete resection of affected tissue in a three-dimensional plane trying to leave tumor-free edges talking about a macroscopic view. Any type of tumor with significant esthetic and functional consequences is unlucky to occur on the face. The reconstruction of the defect produced after the excision of the tumor is a challenge. Although a great number of resection defects can be reconstructed with local advancement flaps, rotational flaps, and transposition flaps, larger defects require reconstruction with substantial tissue bulk supported by an axial blood supply [3].

Case report

An 82-years-old female with a history of arterial hypertension and highly differentiated squamous cell carcinoma diagnosed by excisional biopsy

and referred to plastic and reconstructive surgery department for a reconstruction treatment after her surgical procedure that consisted in excision of all lesions leading tumor free edges. Previously to the procedure by oncological surgery service, she presented an ulcerated lesion on the nasal dorsum, left nasal wing, and inner third of the cheek, with edema, and perilesional erythema, without secretions or infected clinic data. Oncologic surgery and maxillofacial departments performed a total resection of the lesion that invaded the zygomatic bone and upper part of the superior maxilla which was removed with osteotome, also removed the left nasal wing, and left turbinate, then they put a titanium mesh to try to simulate the zygomatic bone, made hemostasis and call to reconstructive surgery department to cover the defect. When we begin the reconstruction, we found a defect of 5cm x 6cm with a lack of skin and soft tissue from 2cm above the superior lip, left half of the nose until the nasion region vertically, and from the middle line to the lower outer corner of the orbital region .5 cm below the inferior eyelid (see figure 1). Initially, we mark the incision lines with gentian violet up to the tragus of the ear and surrounding it, reaching the preauricular area to later go down to the neck. (see Figure 2) The first incision was made with a #15 scalpel then with fine tip electrocautery until the

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Figure 1. 6cm x 5cm defect after the tumor excision, with the titanium mesh anchored to the superior maxilla, nasal bone, and the rest of the zygomatic bone.

supra-SMAS plane (Superficial Muscular Aponeurotic System) dissecting on the plane reaching the angle of the mandible, obtaining a randomized flap, another slightly oblique incision was made in the bottom edge to create an advancement flap, covering the totality of the defect (see figure 3). The flap was sutured without tension previously placing Penrose drain, and we corroborated the proper capillary fill with acupressure (see figure 4). She was extubated and passed to the recovery room. Posteriorly cured with favorable clinical evolution

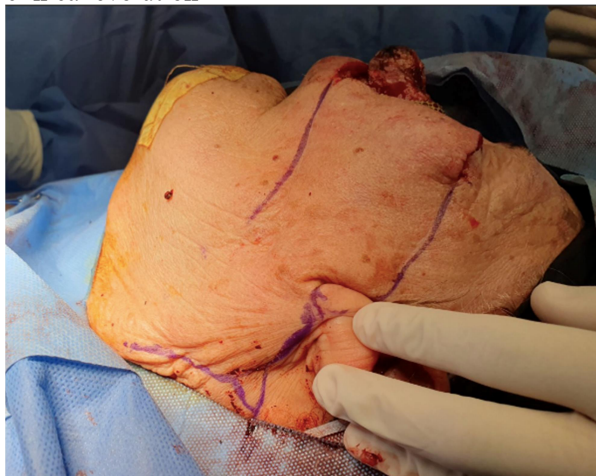


Figure 2. The two previous marks to incisions as a guide to making the flap.

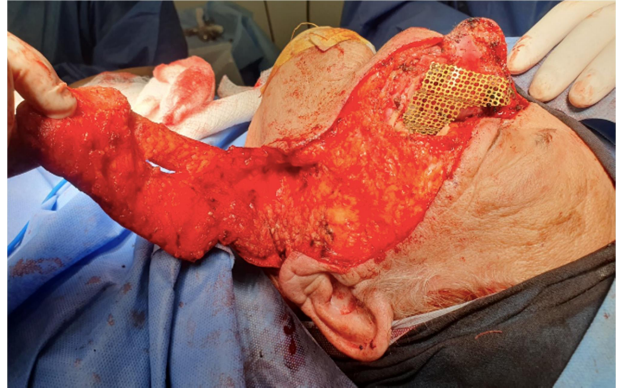


Figure 3. Axial flap irrigated by the facial artery, which has advancement flap features, with a base shorter than its length, without exceeding the 3:1 ratio.

Discussion

Cutaneous squamous cell carcinoma (SCC or CSCC) is the second most common skin cancer. Numerous population-based studies have demonstrated that the incidence of SCC is rising. Some studies show that SCC incidence rates are rising more rapidly than basal cell carcinoma (BCC), reducing the difference in incidence between these two skin cancers. Although rarely metastatic, SCC can produce substantial local destruction along with

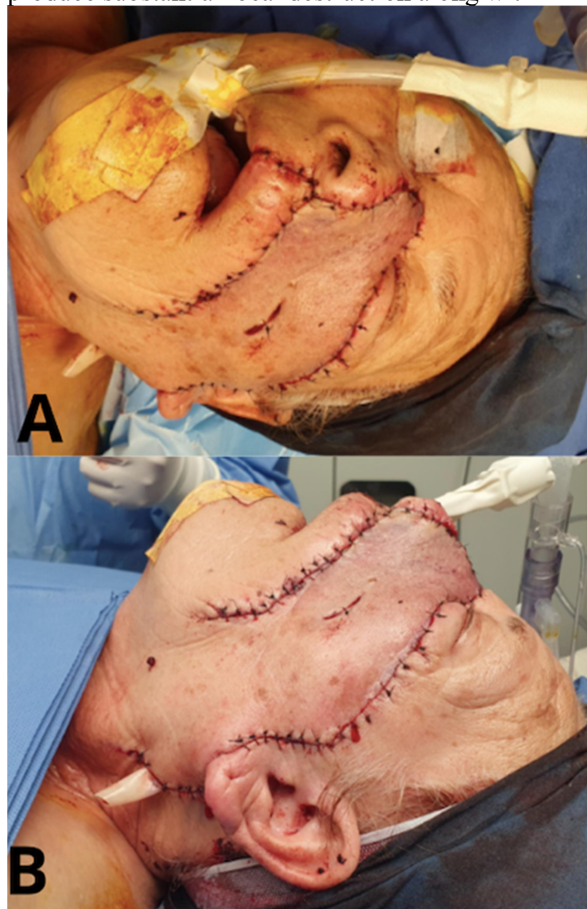


Figure 4. Show the final outcome. (A) Frontal view (B) Lateral view

disfigurement and may involve extensive areas of soft tissue, cartilage, and bone. SCCs generally have a good prognosis, with a 5-year survival of about 98%.[4] In this case, the skin, soft tissue, a part of the zygomatic bone, left nasal wing, left turbinate and upper part of the superior maxilla were invaded. For this reason, the excision of a wide area led to an important defect, needing a skin flap for its covering. A flap consists of tissue that is mobilized on the basis of its vascular anatomy. Flaps can be composed of skin (including subcutaneous fat), skin and fascia, skin and muscle, skin, muscle, and bone, or various compositions of tissues. Because the circulation to the tissue to be mobilized is crucial for flap survival, the development of flap techniques has depended on defining the vascular anatomy of the skin and underlying soft tissue [5]. Multiple classifications have been described, but, in general, flaps for reconstruction are classified based upon the type of blood supply (ie, random, axial), the proximity of the donor tissue to the recipient (ie, local, regional, distant), and tissue composition (eg, musculocutaneous, fasciocutaneous) [6]. A random pattern flap has its own blood supply based on small innominate blood vessels in the dermal subdermal plexus originating from the perforating artery that falls randomly at the anatomical base of the flap. The geometry of this type of flap imposes restrictions on it. In general, a 3:1 length-to-width ratio is considered acceptable, although there are many exceptions to this rule. Ischemia results from decreased flow when the perfusion pressure falls below a critical closing pressure in the subdermal plexus arterioles. Therefore, the traditional width-length concept does not dictate flap survival, but perfusion pressure does. This type of flaps can be subclassified into local, regional, and distant or free flaps. The regional ones are derived from the same anatomical area of the body where the defect occurred. Common flaps based on the subdermal plexus or the underlying vascular source without identification include the bipedicle flap, advancement flaps (i.e., V-Y), and rotation or transposition flaps [5]. Axial flaps are indicated for one-stage reconstruction of wounds when a large amount of skin is needed to fill a defect following trauma or mass resection. [7]. Despite the advent of vascularized free tissue transfer flaps, cervicofacial flaps continue to be very useful and used by surgeons, especially in zones where the resources are limited. This flap is a random rotation flap. Large anterolateral craniofacial defects can be covered by the cervicofacial flap, which has a wide pedicle. In its upper part, it can reach the supraorbital margin, laterally the postauricular area, and medially to the midline. There are five principal indications to perform it 1: Superficial defects up to 14 x 10 cm, 2: All areas of the cheek, external ear, 3: Temporo-frontal and eyebrow defects, 4: Orbital exenteration

defects 5: To provide skin coverage in combination with muscle flaps. It is a random flap that is made up of skin, subcutaneous fat, superficial neck veins, and platysma muscle. In this case, in particular, we tried to make a cervicofacial flap but due to the shape of the defect, a second incision was required, thus creating a trapezoidal figure with a base which is its unique pedicle, taking into account that its dissection was in the supra-SMAS plane, could be considered an advancement flap.

Conclusion

Squamous cell carcinoma is the second most frequent cutaneous neoplasm, and some studies demonstrate that the incidence is rising in the last years, this is very significant if we talking about esthetics outcomes after the excision of this kind of lesions, here is where the reconstructions techniques like skin graft have must of importance. Random and axial flaps are two options for covering defects and have good esthetics outcomes because are regionals kind of flaps, that conservative similar features of previous skin like texture color, and thickness. In this case, due to a big defect in the face, we used the advancement flap that enters the randomized classification of grafts resulting in a proper technique to better the esthetic result.

Conflicts of interests

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

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