ARTÍCULO DE REVISIÓN

BASAL CELL CARCINOMA: RECONSTRUCTIVE APPROACH

Carcinoma Basocelular: Enfoque Reconstructivo

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RESUMEN

El carcinoma basocelular (CBC), es el tipo de cáncer cutáneo más común considerado de baja malignidad por su lento crecimiento. Las metástasis no son muy comunes en este tipo de cáncer, pero podrían existir complicaciones si el diagnóstico no es oportuno o el tratamiento no es el adecuado.

Hay muchos tipos de CBC, algunos pueden ser más infiltrantes que otros, creando una destrucción extensa en el área afectada, principalmente en la cara. El diagnóstico es principalmente clínico, ya que tiene una morfología única con ribetes brillantes y nacarados. Debe confirmarse mediante estudio histológico de biopsia.

Los defectos quirúrgicos se reparan inmediatamente después de la cirugía, ya sea mediante varias técnicas, como: cierre lateral, uso de colgajos de tejido adyacentes, injertos de piel o colgajos de tejido distante. La elección de la mejor técnica dependerá de: localización del tumor, factores relacionados con el tumor (lesiones superficiales o múltiples), factores específicos del paciente (edad, inmunosupresión, comorbilidades, limitaciones), efectos estéticos y funcionales, disponibilidad de técnicas y/o especialistas y costo-eficacia del tratamiento. La Cirugía Plástica tiene un papel especialmente importante en la reconstrucción de las zonas afectadas, ya que las escisiones se realizan en una zona de enorme importancia estética.

Palabras clave: carcinoma basocelular, cutáneo, cirugía plástica, cirugía, reconstrucción.

ABSTRACT

Basal Cell Carcinoma (BCC) is the most common type of skin cancer considered to be low-grade due to its slow growth. Metastases are not quite common in this illness, although complications could exist if the diagnosis is not timely or if the treatment given is not adequate.

There are many types of BCC, some can be more infiltrative than others, creating extensive destruction in the affected area, mainly the face. The diagnosis is mainly clinical. It has a unique morphology with shiny, pearly edges. It must be confirmed by histological biopsy study.

The surgical defects are immediately repaired after surgery either by various techniques, such as: side-side closure, using adjacent tissue flaps, skin grafts, or distant tissue flaps. The election of the best technique will depend on: tumor location, tumor-related factors (superficial or multiple lesions), patient-specific factors (age, immunosuppression, comorbidities, limitations), cosmetic and functional effects, availability of techniques and/or specialists, and treatment efficacy-costs. Plastic Surgery has a particularly important role in the reconstruction of the affected areas, since the excisions are performed in an area of huge aesthetic importance.

KEY WORDS

Basal cell carcinoma, cutaneous, plastic surgery, surgery, reconstruction.

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INTRODUCTION

Basal Cell Carcinoma (BCC), also called Basalioma, is the most common type of skin cancer, presenting a worldwide incidence of approximately 2 million people affected each year.[1]

It is considered a low-malignancy tumor since it grows slowly, and rarely produces metastases (0.028- 0.1%).1 However, complications could exist if the diagnosis is not timely, if treatment is not adequate or in case of undergoing surgery, if a complete resection is not performed it can lead to infiltration to other tissues.[2]

There are many types of BCC **(Table 1)**; some may be more infiltrative and create extensive destruction of the affected area, mainly the face, with bone invasion, which could lead to death from hemorrhage or sepsis.[1]

CLINICAL FORMS

TABLE 1. Basal Cell Carcinoma clinical forms, and the division presented by each one.[1]

CLINICAL FORMS	SUBTYPES
Exophytic	Nodular Pseudocystic Vegetant
Flat	Superficial Scar or scleroatrophic plane Morpheic or sclerodermiform
Ulcerated	Ulcerous (ulcus rodens) Ulcerative nodule
Pigmented basal cell carcinoma	

BCC presents various clinical forms, but they are generally typical **(Table 1)**.

The nodular form is the most frequent and least destructive form presented, unlike the ulcerative one, which presents ulcerative lesions from the beginning, different degrees of infiltration and destruction of nearby tissues. They even go so far as to cause significant harm to the face.[1,2]

TOPOGRAPHY

It is 94% facial and the most affected regions are: upper lip, nose, lower eyelids, cheeks and forehead[1]. The location in extremities and trunk can appear but it is exceedingly rare.

ETIOLOGY

Its etiology is unknown, but there are risk factors that have been related in its appearance. (**Table 2).**

EPIDEMIOLOGY

In Mexico, BCC represents up to 70% of skin cancers. Having 93.9 / 100,000 of men and 77.4 / 100,000 of women. In the United States, the incidence is approximately 146 / 100,000 habitants per year. [3,4]

DIAGNOSIS

zThe diagnosis is mainly clinical. It has a unique morphology with shiny, pearly edges. It must be confirmed by histological biopsy study. Imaging studies will be performed when adjacent bones or muscles are compromised, or in suspected perineural invasion.

DIFFERENTIAL DIAGNOSIS

Squamous cell carcinoma, trichoepithelioma, sebaceous carcinoma, eccrine carcinoma, keratoacanthoma, Bowen's disease, and some tumors of the skin annexes. [1,4]

TABLE 2. BMain risk factors associated with Basal Cell Carcinoma [2,3]

Body hair	Use of tanninf beds	Male gender	Genetic predisposition
Freckles	Radiotherapy	Age> 40 years *	Blond or red hair, and green or blue eyes
Continious sun exposure	Phototherapy	Ethnicity (White people)	Xeroderma pigmentosum (very rare)

* A relationship with age> 40 years has been found, but it can occur at any age. An early appearance possible due to genetic conditions such as: Xeroderma Pigmentosum and Nevoid Basal Cell Carcinomas Syndrome.

FIGURE 1. *Low-risk BCC flat injury.*[5]

TREATMENT

The solution to the problem would be a Ro resection of the tumor with minimal aesthetic compromise. As first-line therapy, surgical excision is generally recommended.

The ideal treatment would be the one that could provide the complete removal of the tumor with a minimum risk of recurrence, using the most effective, cheapest method, and with acceptable cosmetic results3. It is not easy to find the perfect combination, but several treatments can approach each patient's requirements.

The standard treatment is surgical resection4 in which the removed tissue area can be more precisely controlled, and the resultant scar can be optimized both cosmetically and functionally.

The Mohs technique offers highest cure rate for both primary and recurrent BCCs while maximizing preservation of normal tissue with an excision of 4 mm of margin around the lesion; is totally controlled. Effectiveness of 98% has been demonstrated, minimizing recurrences, through monitoring patients for 5 years. A disadvantage could be the high cost.

The use of 5-fluorouracil for 5 years as initial treatment in low-risk injuries was studied in order to avoid subjecting patients to invasive techniques and an effectiveness of 83% was found in the follow-up of patients for 5 years5. 5-fluorouracil is administered topically and is easy to apply and be used.

Other treatments are no longer widely used; however, they can be used in case of failure of the therapeutic response with other methods. These are: carbon dioxide laser, electrodesiccation and curettage, photodynamic therapy,[2,4,5] intralesional therapies, cryosurgery and radiotherapy[6], to name a few.

In order to decide which treatment is the best for each patient, the following has to be considered:

- Tumor location
- Tumor-related factors (superficial or multiple lesions)

- Patient-specific factors (age, immunosuppression, comorbidities, limitations)
- Cosmetic and functional effects
- Availability of techniques and/or specialists
- Efficacy- costs

SURGICAL APPROACH

TABLE 3. Noncritical head/neck areas (cheeks, forehead, scalp, neck):

TECHNIQUE	ADVANTAGES	DISADVANTAGES
Standard surgical excision	Margin evaluation	Surgical risks
Flat	Tissue conservation purposes. It has a great value in cosmetic effects.	Costs, availability
Mohs surgery	For patients who may not tolerate surgery Patients who prefer not to undergo surgical excision. Older patients that aren't available for returning	More visible scar Incomplete tumor removal
Curettage and electrodesiccation	Minimal anesthesia Cost effective Freeze the tumor	Formation of ice cystals, hypertonic damage, disruption of membranes, vascular stasis. Hypopigmentation Scarring

FIGURE 2. *Hyperhemic plaque with rounded edges and telangiectasias. Moderate risk injury.*[7]

FIGURE 3. *Recurrent BCC tumor in right nasolabial fold.*[2]

FIGURE 4. *Nodule-ulcerative BCC tumor in the periauricular region with translucent edges.*[7]

TRUNK OR EXTREMITIES

For primary superficial BCCs <20 mm located on the trunk or extremities:

First-line treatment:

Curettage and Electrodesiccation (C&E).

- Is fast and easily performed.
- Does not allow histologic confirmation of tumor removal.
- Is highly operator dependent (requires a lot of experience).
- **Scars are visible:** a round, hypopigmented scar.

Second-line treatment:

Topical imiquimod, topical fluorouracil, or surgical excision.

RECONSTRUCTION

The surgical defects are immediately repaired after surgery either by various techniques, such as: side-side closure, using adjacent tissue flaps, skin grafts, or distant tissue flaps. If it is done correctly, and there is not a secondary infection or dehiscence, wound healing would be completed within one to two weeks.[5,6]

In order to choose the type of several factors must be considered: size, depth, location of the defect; the availability and laxity of nearby tissue. Also, the patients have to express their preference with the clinician advise.

Depending on the size of the defect and the invasion of surrounding tissues, reconstructive techniques may include:

- Linear closure: in cheek, lip and forehead areas **(Fig. 2).**
- Rearrangement of locoregional tissue **(Fig. 3, Fig. 4).**
- Skin graph **(Fig. 3, Fig. 4).**

The closures could distort the topography of the tissue, altering the location of the residual tumor seeds and preventing the formation of adequate margins. It is of utmost importance that the linear seals are properly oriented to avoid inappropriate and unsightly retraction.

If nose reconstruction is required for large and complex defects, the gold standard is the forehead flap. This will provide the nose with coverage, lining, and support (cartilage graft will be applied if necessary).

For large cheek defects (> 2 cm), where direct closure is not possible, "cut as you go" cervical advancement grafts will be considered.[6,7]

PREVENTION

Primary prevention

It is important to promote and apply preventive measures in the population to decrease the risk of basal cell carcinoma, since although it can be avoided, its incidence worldwide is increasing.[8]

To prevent it is necessary to take into account the following:

- Use of broad-spectrum FPS sunscreen.
- Avoid sun exposure (10 am-16pm).
- Use of protective clothing: long sleeves, wide-brimmed hats, sunglasses, pants.
- Avoid using tanning beds.
- Vitamin B3 / Oral nicotinamide consumption.[9]

Secondary Prevention

- Dermatological examination

FOLLOW- UP AND PROGNOSIS

The established follow-up depends on the clinical scenario, but patients should be evaluated minimum every three to six months for the first two years after the initial treatment and then once or twice per year.[10]

The prognosis for most patients with primary BCC is excellent if it is treated early.

These tumors are frequently slow-growing and metastasis is not very common (0.0029 and 0.55 percent). The recurrences are evident within the first two years (50 percent), two-thirds within three years, 80 percent within five years, and 20 percent between 5 and 10 years after initial treatment.[11,12]

Unfortunately, these cancers can result in significant morbidity, as they are capable of causing considerable disfigurement by locally destroying skin, cartilage, and even bone; creating unfavorable results for the aesthetics and appearance of the patient.

Untreated advanced lesions generally ulcerate, creating problems in wound care.

CONCLUSION

It is important to promote and apply preventive measures in the population to decrease the risk of basal cell carcinoma, since although it can be avoided, its incidence worldwide is increasing.

Some of the factors that influence decision-making about treatment of BCC are: tumor morphology and location, presence or absence of aggressive clinical and pathological features, morbidity of late additional surgery, patient tolerance, and preference.

If the tumor was incompletely removed, it is very important to establish a clear and complete discussion of the risks and benefits of treatment with patients, due to the high risk of recurrence of the lesion.

Close follow-up is required every six months for the first year after treatment and then once a year.

The injuries usually are presented in the face and can compromise the patient's daily life due to its aesthetic involvement, a certified plastic surgeon can offer optimal treatments for each case.

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