

Facial reconstruction after resection of masseter muscle sarcoma. A case report

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Background:

Sarcomas of the head and neck account for 2% of the tumors of this area, and represent 4% of all sarcomas. Their clinical manifestations are non-specific, being in many cases an incidentaloma. As prognostic factors the free surgical margins are postulated as the most important, emphasizing on the histological subtype, the degree of differentiation or size. The masticator apparatus is composed of a complex of bony, muscular, articular and ligamentous elements, in which the masseter muscle is included. The surgical treatment of malignant tumors of this region often requires extensive surgery. The following is a case report of resection of a sarcoma of the masseter muscle with fascio-cutaneous neck flap reconstruction.

Keywords: Head and neck reconstruction, sarcoma, fasciocutaneous flaps.

Jalisco, Mexico

Case Report

Plastic Surgery



Sarcomas are malignant tumors originating from mesenchymal cells. These cells normally mature to differentiate into skeletal muscle, smooth muscle, adipose tissue, connective tissue, bone or cartilage.

Sarcomas of the head and neck account for 2% of the tumors of this area, and represent 4% of all sarcomas. (1)

Their clinical manifestations are nonspecific, being in many cases an incidentaloma. The most frequent local symptoms are general, such as fever, night sweats, general condition, weight loss and lymphadenopathy.

In the WHO classification soft tissue tumors are considered a benign neoplasm with potential for malignant transformation. As prognostic factors free surgical margins are postulated as the most important, standing out over histological subtype, degree of differentiation or size.

The following is a clinical case of resection of a masseter muscle sarcoma. (1)

Case report

The patient is a 40-year-old female with a 5-year history of systemic arterial hypertension, with adequate adherence to treatment and control, 2 caesarean sections with infraumbilical midline

approach, denied allergies and the rest of the interrogation denied.

Approximately 6 months before, she presented a nodular lesion on the left cheek, with rounded edges, well defined, non-painful, with the same color as the rest of the face, 2-3cm in diameter. Subsequently with progressive increase in volume, covering more than 50% of the cheek, until involving the angle of the mandible, with a purplish and reticular pattern, measuring approximately 10x 12cm.

A biopsy of the lesion was taken and a masseter muscle sarcoma with histological variant of rhabdomyosarcoma was reported.

Pre-surgical protocol for tumor resection was performed by the oncologic surgery service, however, given the absence of pre-surgical planning, plastic surgery service was requested to cover the defect. A defect of approximately 14x14cm was found, with exposure of the muscular, nervous and glandular planes, as well as impossibility to cover the tissues.

A fascio-cutaneous flap is performed with rotation from neck to cheek, giving an adequate tension-free coverage.

After recovery, the patient requires complementary treatment with fat infiltration in the cheek and chin, however the patient loses the follow up.



Figure 1. Lesion on left cheek, indurated, adherent to deep plane, with well-defined borders of 12x10cm.

Discussion

The masticatory apparatus is integrated by a complex of osseous, muscular, articular and ligamentous elements. The muscles that act in the mandibular opening and closing are divided into superficial and deep, within the superficial plane are the temporalis and masseter muscles. (2)The masseter muscle is a rectangular muscle that originates in the zygomatic arch and extends downward and backward to the external face of the inferior border of the mandible, its insertion extends from the region of the second molar to the same angle. It receives its innervation from the masseter nerve which comes from the anterior division of the mandibular nerve. (2)

Surgical treatment of malignant tumors of this region often requires extensive surgery, and orbital exenteration may be necessary. Cheek surface defects of 30% or less can be adequately repaired by direct closure or local flaps, which give better cosmetic results than free skin grafts. (3)

In our case, the surgery was first performed by oncologic surgeons with a focus on resection of the lesion, without prior planning to cover the defect.



Figure 2. Resection of the lesion with oncologic surgical edges, with exposure of the muscular and nervous plane, without the possibility of tissue confrontation.

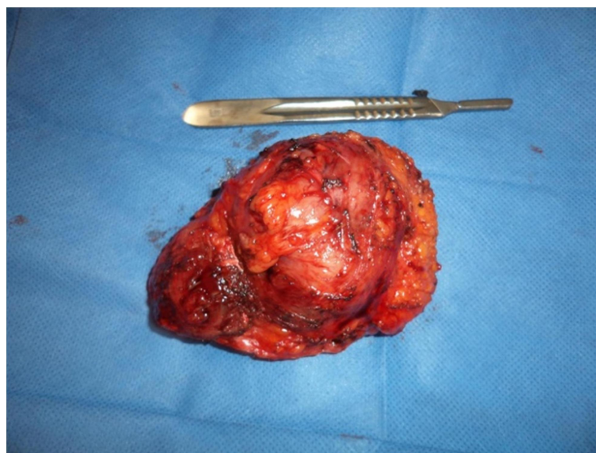


Figure 3. Sarcoma of masseter muscle, lesion of approximately 12x10cm.

Larger defects require more complex surgical techniques, however, the association of a fascial-



Figure 4. Upper. Surgical bed coverage with fascio-cutaneous flap from neck to cheek. Immediate postoperative status. Lower. Postoperative results 1 month after surgery. Viable tissue, free of tension.

cutaneous neck flap proved to be an excellent alternative for lesion coverage.

The difficulty of the procedure lies in the complexity of the anatomy of this region, having to take into account the nervous structures, facial nerve as the main one, as well as vascular and glandular, having as purpose of the reconstruction, not only the coverage of the defect, but the integrity of the same for a normal functionality at the time of recovery. Our patient managed to maintain the nerve integrity in its entirety, with adequate mobility and gesticulation in her recovery, with minimal sequelae, however at the aesthetic level it was necessary to complement with other techniques of fat injection on the cheek and chin to obtain the desired results. (4)

Conclusion

Soft tissue tumors, in this case masseter muscle sarcoma, is a rare and infrequent entity, with little potential for malignant transformation.

However, the reconstruction of large soft tissue defects in the maxillo-malar region is a complex task, which merits early and meticulous planning for an adequate resection with free surgical margins, as well as a total coverage of the lesion, with expected functional and esthetic results.

Conflicts of interests

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

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