Versatility of the use of the osteomyocutaneous fibula free flap in the reconstruction of mandibular defects: a retrospective study

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Introduction

Mandibular reconstruction after tumor removal constitutes a permanent challenge for the surgeon. Primary reconstruction is not always achieved because limiting factors may occur. It is important to take into account the mandibular biomechanics, and the correction of the defect with an exhaustive planning, thus avoiding an inadequate primary reconstruction that leads to considerable difficulties for patients, thus condemning them to failure. They are generally complex defects that require a composite reconstruction that provides different tissues (bone, muscle and skin). The free microvascularized osteomyocutaneous fibula flap has become a reliable technique for the reconstruction of large oromandibular defects due to its wide advantages.

Objective

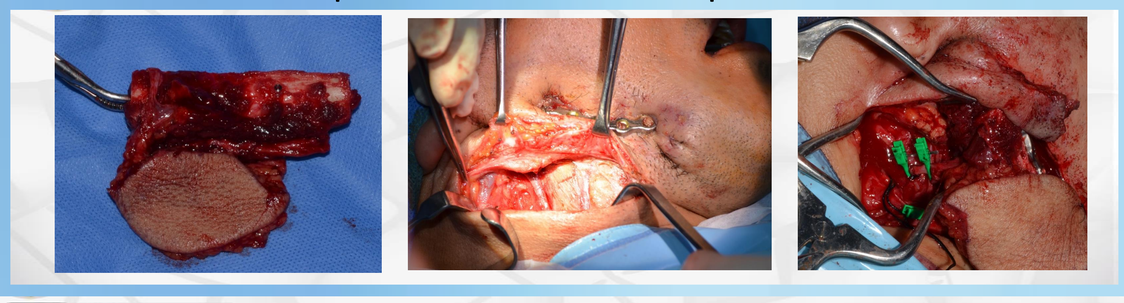
The purpose of this study is to evaluate the versatility in our experience in the use of the microvascularized osteomyocutaneous fibula free flap in the reconstruction of mandibular defects

Result

18 patients were reported (11 males and 7 female) between January 2017 and December 2020, with a mean age of 42 years (range 24-47 years) who underwent jaw reconstruction, treated in the Surgery Service Oral and Maxillofacial Hospital Dr. "Angel Larralde" Carabobo-Vzla.

55% of the flaps were of the osteocutaneous type, the rest of the osteomyocutaneous type. The mandibular defects according to Urken that were presented were: 9 CRB patients, 8 RBS patients, 2 BSB patients. The mean length of the vascular pedicle was 10.2 cm (range, 9 to 12 cm). End-to-end anastomosis of 95.3% arterial and 88% venous were performed. All anastomoses were performed using the Ridsom approach.

The viability of all flaps was recognized. Donor site recovery was assessed with the presence or absence of local complications. Minor complications occurred at the receptor site such as: seroma, edema, pain, and dehiscence, however, his recovery was satisfactory. The functional results were evaluated in relation to the presence of an adequate opening of the mouth and swallowing, classifying them as excellent or good, acceptable and poor. 15 Patients with an excellent result and 3 with acceptable results were reported



Conclusion

The fibula, as a vascularized free graft in its different options; osteocutaneous and osteomyocutaneous, has been widely recognized and considered the most complete therapeutic option for mandibular reconstruction. It constitutes a safe flap due to its advantages in terms of bone anatomical characteristics, thus providing abundant supply of bicortical bone available for the reconstruction of defects, providing and subsequent rehabilitation with the insertion of osseointegrated implants. In addition, its constant vascular anatomical disposition, the opportunity to perform simultaneous dissection by two surgical teams and the minimal morbidity of the donor site. By adding a skin island based on septocutaneous perforating branches of the peroneal artery, its versatility increases, helping to cover skin defects, with exposure of deep tissues or osteosynthesis material. The challenges in reconstruction are manifold, but excellent results can be achieved based on the functional and aesthetic characteristics achieved with the flap. The fibula microvascular free flap should be considered as the, gold standard in reconstruction of facial defects.

Reference:

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