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TECHFIT

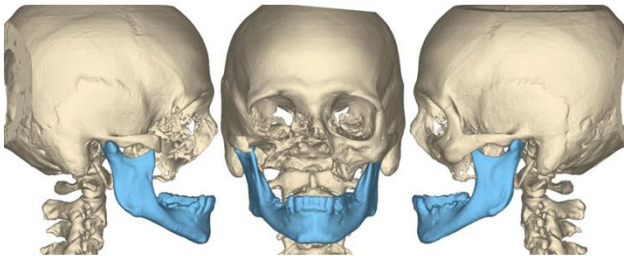
COMBINATION OF CUSTOM-MADE PROSTHESIS WITH MICROVASCULAR FIBULA FLAP BASED ON CAD CAM TECHNOLOGY IN A CASE OF MAXILLO-RHINO-CEREBRAL MUCORMYCOSIS

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MUCORMYCOSIS

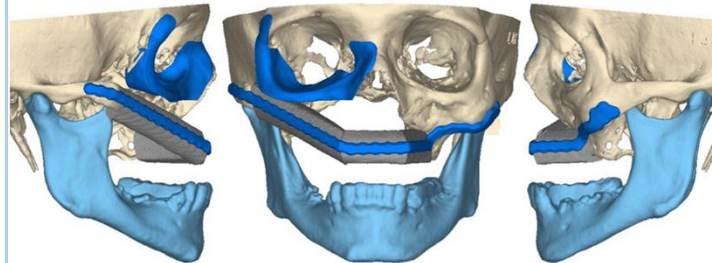
Mucormycosis is a rare, but in some cases fatal, fungal infection. It is triggered by a group of molds collectively called mucormycetes belonging to the mucoromycotina subphylum of the Mucorales. Mucormycosis is found mainly in immunocompromised hosts. It is known that patients with uncontrolled diabetes mellitus, hematological diseases, HIV infection, steroid therapy, malnutrition, poor hygiene and currently cases related to SARS-CoV-2 may contract this infection. (1) Maxillo-rhino-cerebral mucormycosis is the most common type of mucormycosis and its pathophysiology is related to high levels of glycemia, which favors fungal growth. The classic hallmark is necrosis or black crust in the nasal cavity, nasal dorsum, palate or orbital area (2).

The use of diagnostic imaging such as computed axial tomography scan (CAT scan) makes it possible to evaluate the extent and delimit the involved tissue. Additionally a resection and reconstruction planning is required to restore the function and obtain an adequate physical appearance for the patient. In some cases the defects are so extensive that a microvascular flap reconstruction is required to restore both function and esthetics (3). This is why, CAD CAM technology is currently used for this type of intervention, since it greatly facilitates the resection of necrotic tissue with surgical margins and additionally the planning for reconstruction with microvascular flaps.



CASE REPORT

The following is the case of a 55-year-old male patient with a history of maxillo-rhino-orbito-cerebral mucormycosis after tooth 17 extraction, which was treated with lavage and debridement at the local hospital and then referred to Hospital Universitario San Ignacio for multidisciplinary management. The procedures involved debridement of facial bones, bilateral FEME, right suprastructure maxillectomy, left infra-mesostructured maxillectomy, resection of right malar, resection of nasal septum and right pterygoid process proving no local recurrence.



The maxillary and infraorbital resection area was performed with **TechFit San Pedro** planning by using cutting guides. Then the facial reconstruction was performed multidisciplinary with the plastic surgery team. An osteoseptocutaneous fibula free flap was chosen to restore the volume and shape of the upper jaw. Personalized prosthesis were used for the reconstruction of the orbital floor and malar eminence.

It is important to know that surgical intervention is crucial to stop the spread of infection to nearby tissues and anatomical structures.

The subsequent prognosis of this type of patient depends essentially on the site of infection, etiology of the fungus, spectrum and associated comorbidities. Surgical management becomes challenging in cases of disseminated mucormycosis or in cases where, despite removal, the infection continues to spread.

This is why a multidisciplinary management, digital pre-planning and post-surgical controls are important to achieve this type of results. After free flap placement and microvascular anastomosis, the maxillofacial team planned and placed 5 dental implants on upper jaw restoring esthetics and occlusal function to the patient.



BIBLIOGRAPHY:
(1) Rhino-orbital-cerebral mucormycosis: An epidemiological study from tertiary care referral center in Western India
(2) Rhino-orbital-cerebral mucormycosis: Jungal epidemic in a viral pandemic
(3) Píquez C, R; Cevo E, J; Fonseca A, X. (2006). *Terapéutica de Apoyo en la Mucormicosis*. *Revista De Otorrinolaringología Y Cirugía De Cabeza Y Cuello*, 66(3). doi: 10.4067/0718-4816200600300010