The zygoma implant as anchorage for dental rehabilitation after partial mandibulectomy

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Statement of the problem: The remaining bone after partial mandibular reconstruction for dental implants placement and rehabilitation is usually limited in terms of height and width, causing the implants to fail or could not be rehabilitated.

The use of zygoma fixtures in areas adjacent to the bone grafting or bone transport is analyzed in this study.

Materials and method: The data is based on 10 patients (ages 13–63 years old, mean 36, 24 years) who underwent mandibular reconstruction: after benign tumors (7), malignancy (1) and after trauma (2). Seven patients were treated by free bone grafts from the iliac crest. Two by bone transport via distraction osteogenesis and one after microvascular fibula flap. All patients obtained bone continuity after surgical reconstruction, and zygoma implants were inserted in the healthy non-operated bone, completing the tripod with short standard fixtures; allowing proper distribution and adequate biomechanics utilizing hybrid screw retained prostheses.

Results: All patients were dentally rehabilitated with functional and esthetic hybrid prostheses, using 18 zygoma implants and 30 standard fixtures. The patients were followed for 6 years (6.3–1.5 years, average 2.9 years).

Conclusions: The zygoma fixtures were used in the mandible as anchorage for dental rehabilitation after mandibular reconstruction in patients with tumors or severe trauma. They were indicated where bone quantity or quality was deficient, but there was bone continuity.

All patients were treated by a combination of zygoma fixtures and standard dental implants, and screw retained hybrid dentures with a high level of satisfaction and excellent clinical follow-up.

Conflict of interest: None declared.


Quadrangular versus pentagonal zygoma implants design in complete edentulous patients

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Statement of the problem: Quadrangular zygoma implants establishes an anterior maxillary canti-lever or a pseudo-Class III maxillo-mandibular relationship, secondary to posterior implants positioning into the zygoma, producing severe detrimental axial occlusal forces with anterior screws loosening, fractures and implants failure. Placing a fifth zygoma in the anterior maxillary area creates an ideal biomechanical design.

Materials and method: 30 patients (ages 29–66 average 47.5) underwent zygoma fixtures insertions to treat severe maxillary atrophy and be rehabilitated with hybrid dentures. The patient group treated with quadrangular were 5 and 25 with pentagonal. All patients were provisionally rehabilitated at the time of surgery and definitive prosthesis were installed within 2 months. A metallic structure was used to unite all the implants across arch, and either acrylic or porcelain dental fabrication were made. The fifth zygoma fixture was inserted from the alveolar bone, through the piriform rim into the infraorbital rim, anterior to the ocular globe and lacrimal duct.

Results: 2/5 patients treated with the quadrangular design had repetitive episodes of loosening and fracture screws, requiring the placement of the fifth anterior zygoma implant to eliminate the severe anterior maxillary prosthetic canti-lever. All patients showed satisfaction, even those who needed a secondary surgery to place the fifth zygoma fixture.

Conclusions: Patients with severe maxillary atrophy also concur with a pseudo-Class III malocclusion indicating the use of the pentagonal design to ideally distribute the masticatory forces along the metallic structure without cantilever.

Conflict of interest: None declared.


Use of alloplastic and xenograft bone filling with platelet rich fibrin in sinus lift, procedures and immediate dental implant placement

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Objective: To evaluate the clinical and radiological behavior after immediate implant placements after sinus lift when using (platelet rich fibrin) PRF and bone grafting in atrophic maxilla.

Materials and methods: It was planned the implant-supported rehabilitation in three atrophic maxillae, where radiographically evidence of pneumatization of the maxillary sinuses range from 5 to 8 mm. It was placed 9 dental implants and 4 sinus lift in three patients. We use simultaneous sinus lift technique through side window, bone graft combined (alloplastic and xenograft) with PRF, and the immediate implants placement.

Results: Implants stability, was clinically and radiographically evaluated one and six months post surgical procedure demonstrating a proper soft tissue healing and bone regeneration.

Conclusions: The placement of osseointegrated implants and sinus lift in the same surgical procedure is a predictable treatment option that have been supported in the literature. The use of PRF is useful because it promotes wound healing, growth and bone maturation, stabilization of the graft, the wound closure and hemostasis.

Conflict of interest: None declared.


Primary closure v/s secondary closure in third molar surgery, evaluation of pain and swelling

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Objective: An experimental study with a control and study group was performed with the objective of determining if the postoperative edema and pain in secondary surgical closure is lower than in primary closure, in desinclusion of mandibular third molars.

Materials and methods: Two groups of 10 patients were designated. All