Clinical study on bone repair capacity of graft materials fabricated from auto-tooth

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As techniques rapidly grow, numerous graft materials also developed, therefore bone defect considered to be irreparable became possible to be managed by using these materials which were applied to these new techniques. Auto-tooth bone graft materials are manufactured with the tooth which is traditionally discarded after extraction. This bio-recycling system is helpful for bone repair with rapid osteoinduction, osteoconduction, and patient’s emotional satisfaction.

Auto-tooth bone graft material is composed with 55% of inorganic and 45% of organic substances. Inorganic HA has characteristics of combining and dissociating of calcium and phosphate which is same as bone. Organic substances include BMP and proteins which has osteoinduction capacity as well as type I collagen which is same as alveolar bone itself where it should be mix with.

Auto-tooth bone graft materials divided into block and powder type. Block type have ability of blood wettability, osteoconduction, osteoinduction, creeping substitution and space maintaining. Powder type have various size and ability of blood wettability, osteoconduction, osteoinduction, creeping substitution and space maintaining.

Auto-tooth bone graft material underwent gradual resorption and was replaced by new bone of excellent quality through osteoinduction and osteoconduction. Auto-tooth bone graft material is useful in that it supports excellent bone regeneration capacity and reduces not only foreign body reaction but also any other genetic diseases and disease transmission.

This study introduces new bio-recycling system and bone healing capacity of Auto-tooth bone graft material based on radiological, histological, and clinical results.

Conflict of interest: None.


Reconstructive surgery of the atrophic maxilla with calvarial bone grafting: follow-up of 10 years

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Patients with severe atrophic maxillas are a challenging for oral rehabilitation using dental implants. There are some surgical options in those cases, like zygomatic implants and use of extra-buccal donor sites for bone grafting for posterior implants placement, such as iliac bone, tibia and calvarial bone. Our purpose is to present a follow up clinical study of 10 years accompanying 30 patients (24 female, 06 male), who submitted to reconstructive surgery of the atrophic maxilla with calvarial bone grafting to posterior dental implants installation. In the female group, 45 dental implants were installed in maxilla after the bone grafting healing period and in the male group, 37 dental implants were installed, with a total of 82 implants. Of those 82 implants, 04 were losted in the female group and 01 was losted in the male one. The surgical techinic with a different approach to remove calvarial bone, and complications of this procedure are also presented.

Conflict of interest: None declared.


Rehabilitation of severe resorbed maxilla only using multiple zygomatic implants

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Introduction: A series of procedures have been described, for treating atrophic edentulous maxilla, which provide adequate bone volume for the placement of dental implants. However, such treatment options include additional procedures for obtaining bone from extraoral sites, need for hospitalization, high costs and long treatment periods. All these have led to the rejection of said procedures by many patients, due to the high morbidity these entailed. The zygomatic implants have been used as posterior anchors for implant-supported prostheses in patients with severe resorbed maxilla. The original concept included the placement of a single implant in the zygoma, bilaterally, combined with at least four conventional implants in the posterior sector of the maxilla. However some cases of extremely resorbed maxillas prevent the use of anterior conventional implants, compromising the clinical results due to unfavourable prosthetic biomechanics.

Purpose: Evaluate clinical results of severe resorbed maxillas using only zygomatic implants as prostheses anchors.

Patients and methods: Retrospective review of 3 patients with severe atrophic maxillas restored only with zygomatic implants. Clinical records, photographs and radiographs were studied.

Results: Rehabilitation of three patients was achieved using four zygomatic implants, two in each side, in one patient and six zygomatic implants, three in each side in the other two. Immediately loaded prostheses were installed. Implant osteointegration, prostheses stability, functional and aesthetic outcomes were evaluated. The average follow up was of 28 months.

Conclusion: Rehabilitation using only zygomatic implants in severe resorbed maxillas allows an adequate aesthetic and functional rehabilitation.

Conflict of interest: None declared.


The thickness of facial alveolar bone overlying healthy maxillary anterior teeth

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Abstracts

Introduction: A thin facial bone (<2 mm) overlying maxillary anterior teeth is prone to resorptive processes after extraction and
immediate implant placement. A thin bone contributes to risk of bone fenestration, dehiscence, and soft tissue recession.

Objective: This study measured the distance between Cementum–Enamel Junction (CEJ) and alveolar bone crest and the thickness of facial alveolar bone at points 1 to 5 mm from the bone crest for the six maxillary anterior teeth.

Methods: Sixty-six tomographic scans (35 female and 31 male) of intact anterior maxilla were randomly selected (mean age: 39.9 years, range: 17–69) and evaluated by two calibrated and independent examiners.

Results: A high variation of CEJ-bone crest (0.8–7.2 mm) was detected. A significantly larger CEJ bone crest was measured in smokers (p < 0.05) and patients who were 50 years or older (p < 0.05). The average bone thickness at 3 mm from the CEJ for maxillary right central incisor was 1.41 mm and for maxillary left central incisor 1.45 mm. For the maxillary right and left lateral incisors, the crestal bone thickness averaged 1.73 mm and 1.59 mm respectively. For the maxillary right and left canines, the crestal bone thickness averaged 1.47 mm and 1.60 mm, respectively.

Conclusion: The present study supports the finding of a predominantly thin facial bone overlying six maxillary anterior teeth. It is therefore essential to make informed treatment decisions based on thorough site evaluation before immediate implant placement.

Conflict of interest: None declared.


95 Bone-to-implant-interface of two implant surface modifications a comparative back-scatter scanning electron microscopic and light microscopic study in the pelvic model in sheep

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Aim: The aim of this study was to analyse the influence of two surface modifications on osseointegration of two different implant surfaces with identical macro design and to compare the informative value of back-scatter scanning electron and light microscopy.

Methods: In 6 sheep either implants (n = 36) with a highly crystalline and phosphate-enriched anodized titanium oxide surface (group A), or implants with a hydrophilic, sand-blasted, large grit and acid-etched surface (n = 36; group B) were placed in the iliac shaft of the pelvis. After 0, 2, 4, 8 weeks the total and trabecular bone-to-implant contact (BIC, n = 6) was analyzed by back-scatter scanning electron (B-SEM) and light microscopy (LM).

Results: BIC values in both groups revealed a steady rise in the trabecular bone after 2, 4 and 8 weeks (B-SEM and LM). In the 2–4 time interval in group A (p = 0.005) and in group B (p = 0.008) a statistically significant increase of the trabecular BIC could be observed (LM). In both groups BIC values after 8 weeks were significantly higher than after 2 weeks (p ≤ 0.05). By using B-SEM a significant increase of total BIC values in the 0–2 time interval in group B (p = 0.001) and a significant increase in the 2–4 time interval in group A (p = 0.002) could be seen. There were no significant differences between the two groups at any time point.

Conclusion: The two surfaces showed comparable osseointegration in this sheep model. B-SEM demonstrated a high degree of mineralization.

Conflict of interest: None declared.


96 Apicotomy and double traction: conservative interventions for impacted teeth

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Impacted teeth, due to systemic or local factors, represent a frequent problem in most populations. The authors present two techniques for conservative intervention: the apicotomy and the double traction (E. Puricelli). Apicotomy is a technique which has been successfully used for conservative intervention in cases of impacted upper canines with dilaceration or apical root-ankylosis. The technique aims at freeing the tooth from its dilacerated or ankylosed portion inducing, thus, its traction and eruption. It was initially indicated after failure of conservative techniques for inducing spontaneous eruption and orthodontic traction. At the moment, image examinations allow precise diagnosis and its indication as a first surgical therapeutic option. The technique is counter-indicated for young patients with incomplete rhizogenesis or for teeth with total root ankylosis. Double traction is a technique used for conservative intervention in cases of upper central incisor with crown-root dilacerations. The upper central incisor with crown-root dilaceration is diagnosed in teeth with