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Guided bone regeneration with polypropylene membrane – histological analysis

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Introduction: One of the main purposes in Oral Implantology for bone regeneration is to maintain or to improve the height and thickness of alveolar bone after tooth extraction as well as to avoid the connective tissue migration through the remaining bone, which is known to reduce the amount of bone at this place.

Objectives: This paper introduces a non resorbable polypropylene membrane used in guided bone regeneration surgeries. This barrier is intentionally exposed to the oral cavity and has to be maintained in position for two weeks after tooth extraction since its installation, mainly in alveolar sockets with vestibular loss in teeth indicated to be extracted. The membrane allows the alveolar socket to be full filled with the blood clot and works as a barrier to the gingival tissue ingrowth, avoiding the use of grafts and biomaterials to fill the remaining alveolar bone. The surgical technique is simple, safe and predictable, intending the regeneration of both: bone and epithelial tissue.

Purpose: The purpose of this paper is to show the viability of this material by clinical evidences and histological analysis using light microscopy.

Conflict of interest: None declared.

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Finite element analysis of 3 dental implant designs at different straight/tapered ratios

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Introduction: Mandibular reconstruction techniques have limitations, particularly when a bone segment of the

mandibular angle has been lost. When angled reconstruction plates are used, the stress of muscle action may lead to plate fractures and consequent complications.

Aim: This study describes a complementary angle reinforcement plate for mandibular reconstruction developed to provide greater resistance to the system by the author in an oromaxillofacial technical development office of MDT – *Indústria Comércio Importação e Exportação de Implantes LTDA.*, Rio Claro, Brazil.

Material/method: Preclinical trials tested static mechanical behaviors and dynamic resistance-fatigue and were conducted in the Biomechanical Engineering Laboratory of the University Hospital of Universidade Federal de Santa Catarina, Florianópolis, Brazil (Engineer: Carlos Rodrigo Roesler). Test parameters were those prescribed by the ASTM F382-99 Standard Specification. Standardized mandibular reconstruction plates were fixed to polyethylene blocks, to which forces were applied to simulate physiological loading of the specimens (5 per trial). After that, the plates were sent for analysis and approval by the National Sanitary Surveillance Agency of the Brazilian Health Ministry.

Results: Results showed that the angled mandibular reconstruction plates had acceptable resistance indices for the application suggested; when used as a complement of angle reinforcement, they increased resistance to the action of simulated masticatory forces.

Conclusion: Angled reinforcement plates for mandibular reconstruction add rigidity to the system, provide greater stability and a better prognosis for clinical cases that present with loss of a bone segment in the mandibular angle.

Conflict of interest: None declared.

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Implementation of the “WHO Surgical Safety Checklist” in an outpatients setting – minimising the risk for error

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Introduction: Wrong site surgery is a preventable adverse event; however, such events do occur.

Although there is a safety check mechanism in place for all outpatient minor oral surgical procedures (MOS), there is

scope to modify this in accordance with the World Health Organisation Surgical Safety Checklist, currently used nationally and internationally, for general anaesthetic procedures in operating theatres.

Therefore, a new “Outpatients Surgical Safety Checklist” was adapted from WHO Surgical Safety Checklist published in 2008. The authors present a novel modification of the WHO surgical checklist for local anaesthetic procedures.

Methods: The Surgical Safety Checklist, was implemented for use in all local anaesthetic procedures. The printed ‘Surgical safety checklist’ was attached to each set of notes. An initial prospective two-month audit and a second cycle retrospective audit was carried out, looking at completed checklists for patients having dental extractions only. These enabled assessment of use and compliance with the new measures, highlighting any sources of error.

Conclusion: Following the analysis of the two audit cycles, a total of 580 checklists were reviewed. All forms were fully and correctly completed by all members of staff, there was 100% compliance with the guidelines and no untoward outcomes ensued.

Current literature suggests that error of a wrong tooth extraction accounted for 83 per cent of serious adverse incidents in oral and dental treatments.

Therefore, we suggest the introduction and implementation of a surgical safety checklist in local anaesthetic settings in order to minimise possible error and prevent untoward incidents from occurring.

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Radiographic evaluation of the lower second molar’s movement, following removal of the third molar

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Introduction: Occlusal alterations are report by many patients submitted to the removal of third molars, postoperatively. Thus, it is interesting to assess whether this possible movement to the distal of lower second molars, following the removal of third molars, really exists.