Other journals in brief

A selection of abstracts of clinically relevant papers from other journals.
The abstracts on this page have been chosen and edited by Reena Wadia.

Comparison of root coverage procedures

Chambrone L, Ortega M A S, Sukekava F *et al.* Root coverage procedures for treating single and multiple recession-type defects: An updated Cochrane systematic review Updated. *J Periodontol* 2019; DOI: 10.1002/JPER.19-0079. [Epub ahead of print].

Acellular dermal matrix grafts appear to provide similar outcomes to those achieved by subepithelial connective tissue grafts.

This updated Cochrane systematic review evaluated the efficacy of different root coverage procedures in the treatment of single and multiple gingival recessions (GR). Randomised controlled trials of at least six months in duration that evaluated Miller's Class I or II GR (≥ 3 mm) were included. Five databases were searched and 48 studies were included. The results indicated a greater GR reduction for subepithelial connective tissue grafts (SCTG) + coronally advanced flap (CAF) compared to guided tissue regeneration with resorbable membranes (GTR rm) + CAF. There was insufficient evidence of a difference in GR reduction between acellular dermal matrix grafts (ADMG) + CAF and SCTG + CAF or between enamel matrix derivative (EMD) + CAF and SCTG + CAF. Greater gains in the keratinised tissue width (KTW) were found for SCTG + CAF when compared to EMD + CAF and SCTG + CAF when compared to GTR rm + CAF. There was insufficient evidence of a difference in KTW gain between ADMG + CAF and SCTG + CAF.

<https://doi.org/10.1038/s41415-019-0734-4>

Stability of root coverage procedures

Dai A, Huang J P, Ding P H, Chen L L. Long-term stability of root coverage procedures for single gingival recessions: A systematic review and meta-analysis. *J Clin Periodontol* 2019; **46**: 572–585.

Coronally advanced flap alone results in decreased root coverage with time. When combined with a connective tissue graft, long-term stability and root coverage outcomes are improved.

This review evaluated the stability of root coverage procedures for single gingival recessions. A literature search was completed and randomised controlled trials (RCTs) of ≥ 2 years were selected. Primary outcomes were complete root coverage (CRC) and mean root coverage (MRC). Secondary outcomes included width of keratinised tissue (KTW) and patient-centred parameters. Fifteen RCTs were included. The results demonstrated significantly higher MRC in the short-term than long-term after coronally advanced flap (CAF). When CAF was combined with connective tissue graft (CTG), no significant difference was observed in CRC or MRC for short-term versus long-term, resulting in better long-term efficacy than CAF alone in terms of CRC and KTW. For CAF plus enamel matrix derivative, the meta-analysis showed no significant difference between the short-term and long-term results of CRC.

<https://doi.org/10.1038/s41415-019-0756-y>

Load response – natural tooth vs dental implant

Robinson D, Aguilar L, Gatti A, Abduo J, Lee P V S, Ackland D. Load response of the natural tooth and dental implant: A comparative biomechanics study. *J Adv Prosthodont* 2019; **11**: 169–178.

Occlusal loading of the natural tooth compared with a dental implant results in lower stress-strain magnitudes in the underlying alveolar bone.

The biomechanical response of dental implants to occlusal loading remains poorly understood. A finite-element computational model of the stomatognathic system comprising the mandible, first premolar and periodontal ligament (PDL) was developed based on a natural human tooth, and a model of a dental implant of identical occlusal geometry was also created. Occlusal loading was simulated using point forces applied at seven landmarks on each crown. Model predictions were validated using strain gauge measurements. For the natural tooth, the maximum stress and maximal principal strains at the mandible were lower than those observed at the prosthetic tooth. As occlusal load was applied more buccally relative to the tooth central axis, stress and strain magnitudes increased. The authors commented that the PDL may function to mitigate axial and bending stress intensities resulting from off-centred occlusal loads.

<https://doi.org/10.1038/s41415-019-0755-z>

Implant retained overdentures – bar vs ball attachments

Park J H, Shin S W, Lee J Y. Bar Versus Ball Attachments for Maxillary Four-implant Retained Overdentures: A Randomized Controlled Trial. *Clin Oral Implants Res* 2019; DOI: 10.1111/clr.13521. [Epub ahead of print].

The maxillary four-implant supported overdenture exhibited predictable results regardless of attachment system, but the bar group was more vulnerable with respect to maintaining peri-implant tissue health.

This randomised controlled trial compared the clinical treatment outcomes of maxillary four-implant supported overdentures with either splinted (bar) attachments or non-splinted (ball) attachments. Forty participants who were dissatisfied with their existing conventional maxillary complete dentures were included. Six months after implant placement, a definitive prosthesis was inserted. Implant success, condition of peri-implant tissue, prosthodontic maintenance and complications, and patient satisfaction were assessed at baseline, prosthesis delivery, three months and 12 months. There were no significant differences in marginal bone loss after one year of loading. Plaque index, gingival index, and bleeding on probing were significantly higher in the bar group, and the implant success rate of the bar group was significantly lower than that of the ball group. The most frequent prosthodontic issue was the need to change the bar clip or O-ring as a result of retention loss. Patient satisfaction did not differ between the two groups except for aesthetics at three months.

<https://doi.org/10.1038/s41415-019-0757-x>