

CHARLOTTEPERIO

Periodontics ♦ Implantology

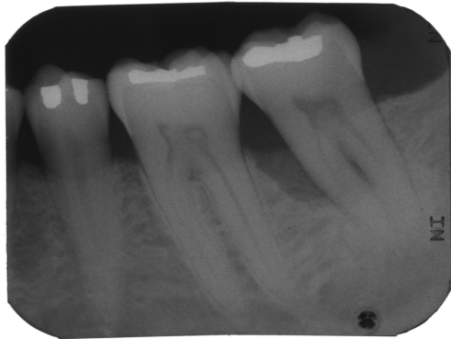
Perio News

... this newsletter represents our opinion about current periodontal technologies / procedures...

Periodontal Regeneration

Rationale for Regeneration

Periodontal disease results in progressive destruction of the attachment apparatus and supporting structures of the tooth. This can lead to tooth mobility and eventual tooth loss. Treatment of periodontitis has many objectives: arrest disease progression, resolve inflammation, and deter recurrent disease. One significant goal in treating periodontitis should be to regenerate lost periodontal tissues when appropriate. Periodontal regeneration is defined as treatment that results in regeneration of periodontal ligament, cementum, and bone on a previously diseased root surface.



Patient presented with an 8-9mm probing depth, vertical bone loss on the mesial of #18 and class II mobility.

Following regenerative treatment using bone graft and a collagen membrane, the bony defect has been corrected and probing depth is reduced to 3-4mm.

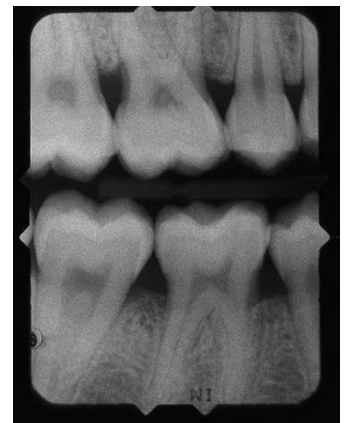


Biologic Principles

Key principles in regenerating lost periodontal support are: wound stabilization, epithelial exclusion, bone grafting, and osteopromotion. Wound stabilization and epithelial exclusion can be accomplished using barrier membranes. These collagen membranes are slowly resorbed over time and help to create and maintain space for the regenerating tissues during healing. Bone grafts are used to provide a matrix or scaffold to allow the patient's own osteogenic cells to enter this area and re-grow bone. Osteopromotion is achieved through the use of growth factors that help to promote bone growth and maturation. These include platelet-derived growth factor (PDGF), bone morphogenic protein (BMP), and enamel matrix derivative (EMD).



This female patient presented with 7-8mm probing depths and vertical bone loss throughout the molars.



Regeneration was performed using growth factors (PDGF) and bone graft. Probing depths were reduced to 3mm and correction of the bony defects is noted radiographically.

Clinical Applications

In clinical practice, periodontal regeneration is often performed using a combination of treatment modalities. This may include use of a membrane in conjunction with bone grafting, or using a combination of bone grafting with growth factors.

At the time of surgery, the gingival tissues are carefully preserved while providing access for thorough root debridement and cleansing. All of the plaque and calculus are removed from the diseased root surface and any soft tissue remnants are removed from the bony defect. The regenerative materials are placed to completely fill or correct the bony defect and primary closure is achieved. In regenerating lost periodontal tissues, optimal clinical outcomes are best achieved in cases of vertical bone loss. This is due to the presence of supporting bone and tissue for the grafted area. In horizontal bone loss, often regeneration is not the best treatment option and other modalities such as apically positioned flap or osseous surgery should be employed.



This 17 year-old patient presented with aggressive periodontitis, with 8mm probing depths and vertical bone loss around teeth #19-20.

Regenerative therapy utilizing bone graft and growth factors (EMD) resulted in excellent bone fill and postoperative probing depths of 3-4mm.

Indications

Regenerative treatment is most effective in treating moderate to severe periodontitis with probing depths of 5mm or greater. Typically, vertical bony defects respond more favorably than horizontal bone loss. In general, postoperative recession is not as much a concern as other treatment modalities because the lost periodontal tissues are regenerated.



Patient presented with a 10mm probing depth and severe vertical bone loss on the distal of tooth #30.

The 2-wall bony defect was treated surgically with a bone graft. The lost supporting bone was regenerated and the probing depth decreased to 4mm.



Conclusion

Periodontal regeneration is an effective and predictable treatment modality in treating periodontitis. However, each case should be evaluated individually regarding the best mode of therapy. Clinical evaluation can determine areas in which regenerative therapy can be used to help improve and preserve the health, function, and stability of the patient's periodontal support. Regeneration is an important treatment in the management of periodontitis, helping patients maintain the health, function, and esthetics of their dentition.

Please call or email if you have questions or comments. We appreciate your feedback and will be happy to discuss in further detail any thoughts or questions you may have.

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