



TOLMIE, RASENBERGER & VAN KESTEREN

D.D.S., P.A. Periodontics ♦ Implantology

Perio News

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

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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 A
- 8-9mm PD
- vertical bone loss on #18 mesial
- class II mobility



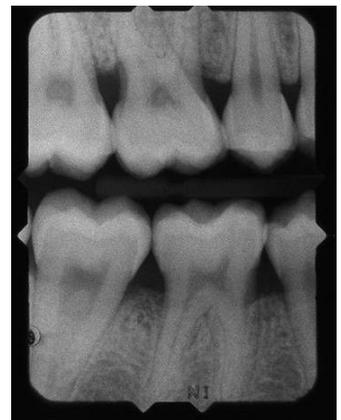
Regenerative therapy with bone graft and a collagen membrane.
- 90% bone fill achieved
- Probing depth 3-4 mm
- No mobility

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).



Patient B
- Quadrant 7-8mm probing depths
- Crater bone loss patterns
- Vertical bone loss



Regeneration therapy with bone graft and growth factors (PDGF)
- Probing depths 3mm
- Bony defects corrected as noted radiographically.

Clinical Applications

In clinical practice, regenerative treatment is often performed using a combination of treatment modalities to include the 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 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 should be employed.



Patient C
- 17 year-old with aggressive periodontitis
- 8mm probing depths and vertical bone loss around teeth #19-20.



Regenerative therapy utilizing bone graft and growth factors (EMD)
- Excellent bone fill
- Probing depths 3-4 mm.

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 a concern as with other treatment modalities because the lost periodontal tissues are regenerated.



Patient D
- 10mm probing depth
- Severe vertical bone loss on #30 distal



Regenerative therapy with a bone graft
- Excellent bone fill.
- Probing depth 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.

If you have any questions or comments, please call or email drvank@trvperio.com. We appreciate any feedback and will be happy to discuss in further detail any thoughts or questions you may have.

Paul Tolmie, D.D.S.
drtolmie@trvperio.com

Kenneth Rasenberger, D.M.D.
dras@trvperio.com

Chris van Kesteren, D.D.S.
drvank@trvperio.com

2315 West Arbors Drive, Ste 100 Charlotte, NC 28262 (704) 549-4991