Guided Tissue Regeneration in Periodontal Therapy

The application of growth factor mediated tissue engineering to regenerate lost periodontal tissues

Drs. Alan Rosenfeld and George Mandelaris
Diplomates, American Board of Periodontology
Guided Periodontal Tissue Regeneration (GTR)

- This x-ray demonstrates a patient who has experienced advanced, but localized bone loss around a molar (#31).
- The turquoise arrows denote where bone should be located in a healthy, non diseased level around this tooth.
- The red arrow denotes the bone level extent which has been suffered as a result of localized periodontal disease. Nearly 70% bone loss has occurred on the distal aspect. Its future is uncertain and this tooth could easily be lost in a short period of time if therapy is not pursued.
- The yellow line denotes the pattern of bone loss, which is vertical in this case. Because this is bone loss pattern that is vertical in nature, it has depth & width characteristics which allow periodontal regeneration to be possible (unlike other patterns of bone loss resulting from gum disease).
Guided Periodontal Tissue Regeneration (GTR)

• This radiograph was taken 6 months after guided periodontal tissue regeneration surgery. Regenerative surgery involves applying a bone graft into the defect. The bone graft is usually a human donor graft (allograft) which is hydrated in a powerful synthetic growth factor (PDGF- platelet derived growth factor) which helps stimulate robust wound healing and an accelerated repair process by the body.

• The yellow arrow and triangle demonstrates the volume of bone that has been regenerated successfully back to the tooth. This result has changed the short and long-term tooth prognosis to excellent.
Guided Periodontal Tissue Regeneration (GTR)

**Before**

The red lines and yellow arrows indicate the before and after bone levels around tooth #31.

**After**