# BioBrief

GUIDED BONE REGENERATION

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Gregory A. Santarelli, DDS

# Mandibular Alveolar Ridge Split with Delayed Implant Placement

leading regeneration

Geistlich

# The Situation

A healthy (ASA 1) non-smoker 63-year-old female presented to my office with Kennedy Class II partial edentulism in the mandibular right posterior quadrant for several years. She denied removable options and wanted dental implants to individually replace her missing teeth. The clinical and radiographic evaluation revealed atrophic mandibular bone height and width at site #'s 29, 30 & 31. The edentulous site required engineering prior to the placement of conventional dental implants and prosthetics.

# The Approach

The goal is to provide adequate soft and hard tissue at edentulous site #'s 29, 30 & 31 in order to place dental implants and restore a stable balanced occlusion.

# The Risk Profile

| | Low Risk | Medium Risk | High Risk |
|---|---|---|---|
| Patient's health | Intact immune system/ Non-smoker | Light smoker | Impaired immune system (heavy smoker) |
| Patient's esthetic requirements | Low | Medium | High |
| Height of smile line | Low | Medium | High |
| Gingival biotype | Thick - "low scalloped" | Medium – "medium scalloped" | Thin - "high scalloped" |
| Shape of dental crowns | Rectangular | | Triangular |
| Infection at implant sight | None | Chronic | Acute |
| Bone height at adjacent tooth site | ≤ 5 mm from contact point | 5.5 - 6.5 mm from contact point | ≥ 7 mm from contact point |
| Restorative status of adjacent tooth | Intact | | Restored |
| Width of tooth gap | 1 tooth (≥ 7 mm) | 1 tooth (≤ 7 mm) | 2 teeth or more |
| Soft-tissue anatomy | Intact | | Compromised |
| Bone anatomy of the alveolar ridge | No defect | Horizontal defect | Vertical defect |

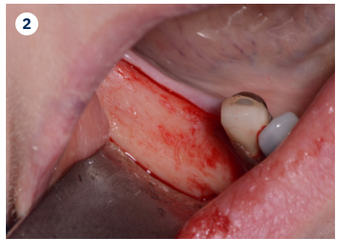
**Gregory A. Santarelli, DDS** | Kenosha, WI
*Oral Maxillofacial Surgeon*

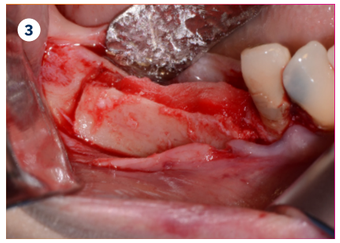
Dr. Santarelli earned his DDS degree in 1998 from the University School of Dentistry, Milwaukee, WI, after graduating with his B.S. in Biology from Arizona State University (Tempe, AZ). In 1999, he completed his General Practice Residency at the University of Iowa Hospital and Clinics, and went on to an Oral & Maxillofacial Surgery Internship at the Medical College of Virginia (Richmond, VA) as well as an Oral & Maxillofacial Surgery Residency Program, Christiana Care Health System (Wilmington, DE).

After completing his formal training in 2004, Dr. Santarelli's work experience includes the Bankor Hospital for Children, Cambodia (2003), Adjunct Clinical Professor, University of Marquette, School of Dentistry, Department of Oral Surgery, Marquette, WI (2005), and Oral Surgery Associates of Milwaukee, Milwaukee, WI (2004-2005). He now maintains a private practice in Kenoasha, WI with his partner Dr. Deno Tiboris.

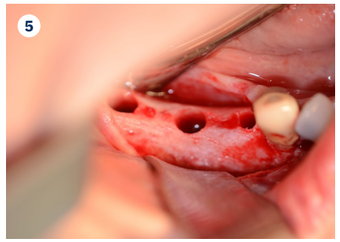
Dr. Santarelli performs numerous hard / soft tissue regeneration surgeries in preparation for dental implants and is actively involved in clinical research with The McGuire Institute (iMc).

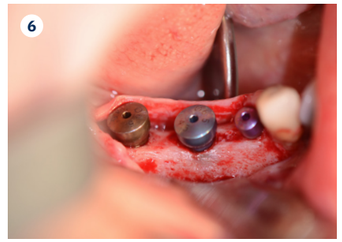
> **"The hard and soft tissue of the edentulous posterior mandible were inadequate to rehabilitate with dental implants."**








# The Outcome

The patient summarized this challenging case very well – **"I never imagined I would have fixed teeth again."** Geistlich Bio-Oss® and Geistlich Mucograft® allowed for retention of the hard and soft tissue volume to achieve our final result and for maintenance of the final prosthesis.

**1** Initial panoramic radiograph.

**2** Atrophic edentulous alveolar ridge.

**3** Alveolar ridge split with Geistlich Bio-Oss® graft in place (subsequently applied Geistlich Mucograft®).

**4** 6 months post grafting with Geistlich Bio-Oss® and Geistlich Mucograft®.

**5** Implant osteotomies with adequate alveolar width.

**6** Implants in tooth positions 29, 30 and 31.

**7** Panoramic radiograph of implants.

**8** Final restorations.

> "Precise osteotomies along with the use of Geistlich Bio-Oss® and Geistlich Mucograft® provide adequate bone volume for dental implants."

Geistlich

**Geistlich Pharma North America, Inc.**
Princeton, NJ 08540
Customer Care Toll-free: 855-799-5500
info@geistlich-na
**https://geistlich.us**

## Keys to Success

- → Flap management and passive closure over the bone graft.
- → Choosing the appropriate biomaterials.
- → Patient education and compliance.
- → Providing adequate time for healing before moving to the next step.
- → Implant planning and proper implant placement.
- → Follow up care.

→ “Careful patient selection, treatment planning and operative efficiency were used to provide a previously non-functional segment with fixed stable dental implant prosthetics and a balanced occlusion.”


For more information, please visit:
**www.geistlich.us**

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For more information on contraindications, precautions, and directions for use, please refer to the Instructions for Use at:
**https://www.geistlich-na.com/dental-professionals/instructions-for-use**