LEADING REGENERATION

Geistlich Biomaterials

BioBrief

Extraction Socket Management

Dr. Meet Shah

The preventive minimally invasive regenerative procedure.

The Situation

A 53-year-old medically healthy female patient reported to the OPD with the chief complain of the fractured upper right back tooth and pain on mastication.
On clinical examination, tooth #17 (FDI numbering system) was observed to be fractured from crown and extending up to the root surface. The patient agreed with the decision to extract the tooth and replace with implant supported fixed prosthesis.

The Risk Profile

Risk Factors	Low Risk	Medium Risk	High Risk
Patient's health	Intact immune system	Light smoker	Impaired immune system
Patients 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 site	None	Chronic	Acute
Bone height at adjacent tooth	≤ 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

On radiographic observation, it was evident that the antral floor was in close approximation with the root apices. Immediate implant placement would have a risk of development of oro-antral communication and since the roots are close to each other and slender, inter-radicular bone would be insufficient to provide optimum primary stability for the implant.

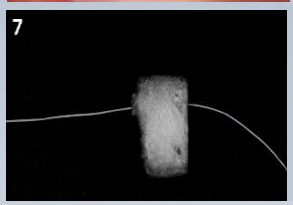
Dr. Meet Shah, MDS
Periodontist & Implantologist

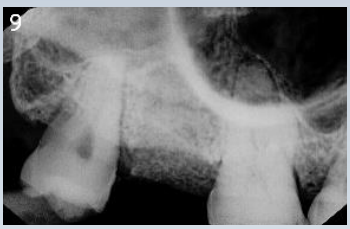
Dr. Shah did his BDS from Bharti Vidyapeeth Dental College & hospital, Pune and MDS in Periodontics & Implantology from MARDC, Pune. He has been trained in Perioplastic & implant surgeries from world renowned Periodontist Dr. Michael Sonic (New York). He has his specialty practice dedicated to Periodontics & Implantology at **Prime Conservative Dental Centre**, Surat. He has various published articles in renowned local & indexed journals. He has been lecturing extensively on Advanced Periodontal and implant related osseous reconstructive surgeries in various conferences. He is a Key Opinion Leader for Geistlich Biomaterials, Switzerland. He performs advanced implant site regenerative surgeries & has special interest in Perioplastic procedures.



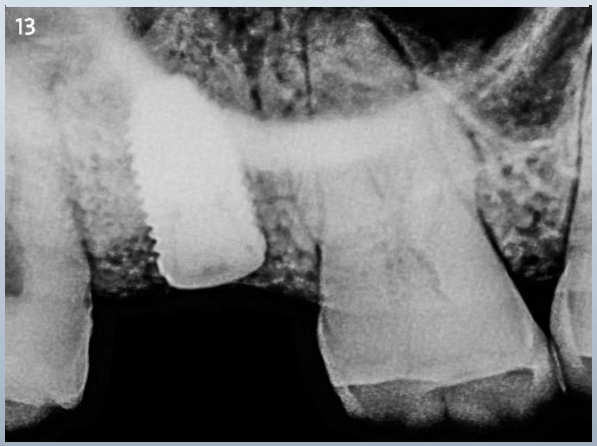












The Approach

#17 has to be atraumatically extracted, Geistlich Bio-Oss® Collagen in wedge shape fragments used to augment each root sockets till the apex and eventually fill the entire socket. The socket has to be sealed with Geistlich Mucograft® Seal which has to be sutured carefully with surrounding gingiva in order to cover the Geistlich Bio-Oss® Collagen completely. Wait for 12 weeks to achieve dense regenerated bone to place an implant in the 3D accurate position.

The Outcome

12 weeks CBCT shows that, the sinus has been stable following the socket grafting. Thus, as sufficient bone bulk was achieved by Geistlich Bio-Oss® Collagen, the implant could be placed in the prosthetically driven 3D position with optimum torque. If the implant would have been placed immediately after extraction, there were higher chances of perforating the sinus membrane.

1. #17(FDI) – fractured and indicated for extraction I 2. Radio opaque line passing through the mid-root region of the #16, #17 – denotes the buccal dip of the sinus (generally confirmed from CBCT) I 3. The tooth was extracted atraumatically. Inter-radicular bone appears to be thin and insufficient for immediate implant placement I 4. Geistlich Bio-Oss® Collagen immersed in normal saline and sectioned into small fragments I 5. Geistlich Bio-Oss® Collagen placed in all the root sockets I 6. Coronal aspect of the socket filled with Geistlich Bio-Oss® Collagen I 7. Geistlich Mucograft® Seal, pre-suture with 4-0 PTFE I 8. Geistlich Mucograft® Seal sutured with the surrounding gingiva by 4-0 PTFE suture I 9. Socket filled completely upto the apex with Geistlich Bio-Oss® Collagen I 10. 12-week follow-up, thick keratinized tissue in the region of #17 I 11. For implant placement, favourable bone dimension with good vitality I 12. Implant placed at 40 NCM I 13. Sufficient bone surrounding the implant

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Keys to Success

- ✓ Cases where the sinus is in close proximity to the apex, this procedure is a boon to regenerate sufficient 3D bone bulk for ideal implant placement.
- ✓ Atraumatic extraction – 'key to success' as it saves maximum available bone.
- ✓ Instead of placing implant in an inadequate bone volume, augment first to achieve stable bone (Preventive Concept - Prevent the possibility of unfavorable dimensional changes which later might require challenging augmentation procedures).
- ✓ Geistlich Bio-Oss® Collagen has to be sectioned in order to fill the socket till the apex.
- ✓ Excessive pressure while condensing Geistlich Bio-Oss® Collagen might result in post-operative discomfort, thus it has to be soaked enough in saline prior to application, to achieve optimum consistency.
- ✓ The implant should be placed at respective prescribed torque instead of overtorquing, which might result in crestal bone necrosis and unfavorable bone remodeling.

"Post extraction socket grafting with combining the use of Geistlich Bio-Oss® Collagen and Geistlich Mucograft® Seal is a predictable minimally invasive preventive regenerative procedure, able to create sufficient ridge volume suitable for prosthetically driven implant placement."

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