BioBrief

GUIDED BONE REGENERATION

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Alveolar Ridge Preservation with vallos® Mineralized Cortico-Cancellous Allograft

leading regeneration

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The Situation

A 68 year old female patient was referred from her general dentist for persistent minor discomfort on #31, suspected endo-perio lesion. Upon the examination, deep probing depth and grade 1 mobility were noted. Radiographic interpretation indicating a large J shaped lesion and possible root fracture. Patient had missing #30 and #32 has been mesially drifted and left a restorative space more than > 13 mm mesio-distally.

The Approach

A successful treatment outcome comes with proper selection of the technique and materials. In order to facilitate an implant supported restoration in the site with > 13mm mesio-distal space, a staged approach was selected, with alveolar ridge preservation (ARP) performed using an atraumatic extraction technique and vallos® mineralized cortico-cancellous bone allograft chosen as the material.

The Risk Profile

	Low Risk	Medium Risk	High Risk
Patient's health	**Intact immune system**	Light smoker	Impaired immune system
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

* The esthetic related risk factors are not needed for this case. Restorative space of more than 13 mm may be an additional risk factor.

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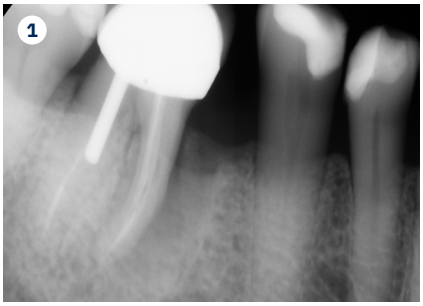
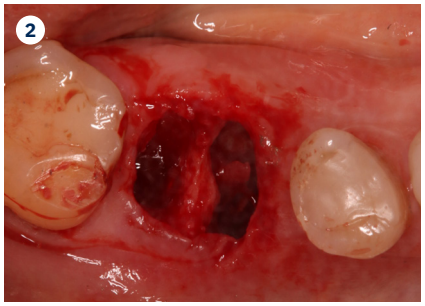
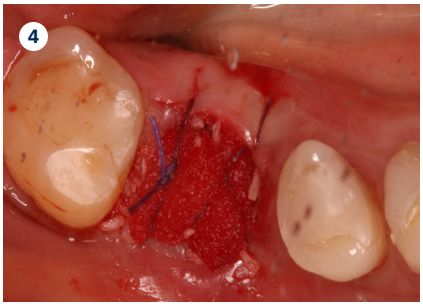
Hanae Saito, DDS, MS, CCRC serves as a clinical associate professor and oversees the Dual Perio-Pros program and predoctoral periodontal education within the Division of Periodontics, at the University of Maryland School of Dentistry. She is a Diplomate of the American Board of Periodontology. Dr. Saito obtained a Master of Science in Clinical Research and a certificate in Periodontics from New York University College of Dentistry. Additionally, she operates a faculty practice focused on periodontology and implant dentistry.

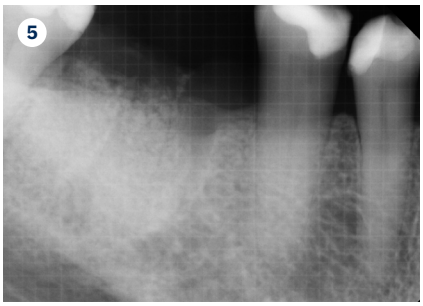
Andrew Tong, DDS earned his Bachelor of Science degree from the University of Maryland at College Park in 2015 before completing his Doctor of Dental Surgery (D.D.S) degree at the University of Maryland School of Dentistry in 2019. Following this, he undertook a General Practice Residency at the Newark Beth Israel Medical Center in New Jersey from 2019 to 2020. Dr Tong now practices general dentistry at Tong Dental Care in Gaithersburg, MD. Concurrently, he is pursuing a Master's degree in Periodontics at the University of Maryland School of Dentistry.

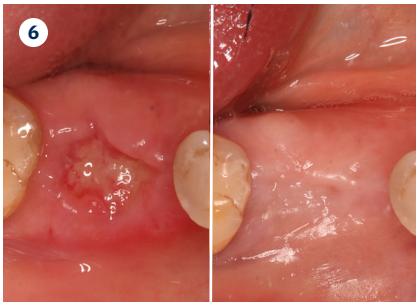
"Removal of the infection and maintaining the ridge dimension for the implant supported restoration in the site with > 13 mm mesio-distal space were required."

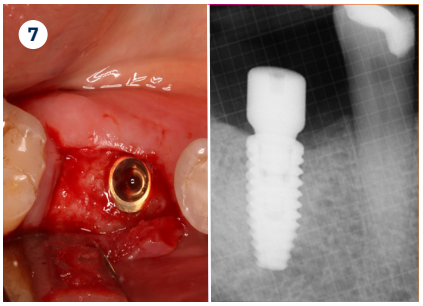


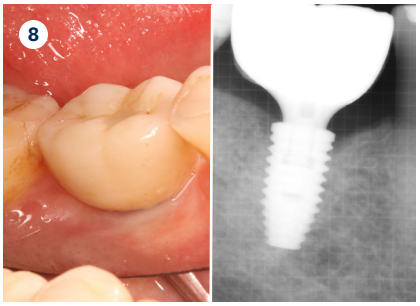












The Outcome

The planned treatment of replacing a tooth with a dental implant in the regenerated alveolar ridge was achieved. By employing secondary intention healing following ARP and utilizing a lingual paracrestal incision, adequate keratinized tissue was preserved on the buccal side of the implant-supported restoration.

1 Preoperative radiograph of #31 with guarded prognosis due to potential root fracture and infection.

2 Atraumatic extraction was performed and intact furcation bone is noted.

3 vallos® mineralized cortico-cancellous bone allograft was placed.

4 A collagen plug was used to cover the bone allograft

5 Immediate post alveolar ridge preservation radiograph.

6 Healing at 2 weeks and at 4 months prior to implant placement.

7 Implant was placed with 32 Ncm. Post implant placement radiograph.

8 6 months after the implant placement, the final restoration was delivered. Radiograph at the time of final restoration delivery.

> “Ensuring atraumatic extraction techniques, regardless of whether it’s in the anterior or posterior regions, is crucial for preserving the integrity of both hard and soft tissues. Equally important is the selection of biomaterials that not only offer structural support but also possess bone regeneration properties.”

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Keys to Success

- → Atraumatic extraction via 1. flapless and 2. sectioning the multi-rooted tooth to preserve alveolar bone especially furcation bone.
- → Removal of the infection by thorough curettage and degranulation of the extraction socket.
- → Thorough packing of vallos® allograft all the way to the apex of the socket.
- → Selection of the bone graft material that provides structural support and osteoinductive potential.

- → vallos® mineralized cortico-cancellous allograft is an osteoconductive scaffold which encourages bone formation and allows remodeling with the patients own bone.

> “The particulate size of the bone graft facilitated thorough packing throughout, extending all the way to the apex.”

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

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https://www.geistlich-na.com/dental-professionals/instructions-for-use