

**In this issue** we present another study which evidence the bone forming ability of Ti-oss<sup>®</sup> and its assistance to long-term stability of the Implant (**Ref: Article-17 in Ti-oss<sup>®</sup> website**)

## **Article17: Simultaneous Implant and Guided Bone Regeneration using Bovine-Derived Xenograft and Acellular Dermal Matrix in Aesthetic Zone.**

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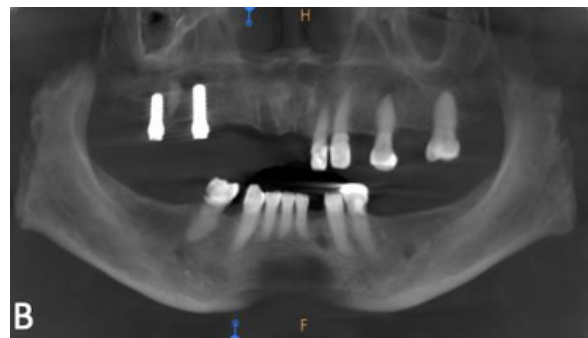
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**Conclusion :** Guided Bone Regeneration (GBR) in dental implant placement is a pivotal strategy in addressing inadequate buccal bone for successful implant treatment. Further incorporation of xenograft (bovine-derived Ti-oss<sup>®</sup>) with barrier membrane (Acellular Dermal Matrix) in GBR emerges as a promising approach resulting increase in bone volume and soft tissue thickness, even on a geriatric patient.

- **Clinical situation:** 65 years of female with missing teeth and bone volume shrinkage due to disuse atrophy. Implant placement with GBR using Xenograft and ADM are recommended.
- **Year of Surgery: 2023; Treatment duration: 7 Months**



**A** Clinical Appearance of anterior maxilla at baseline

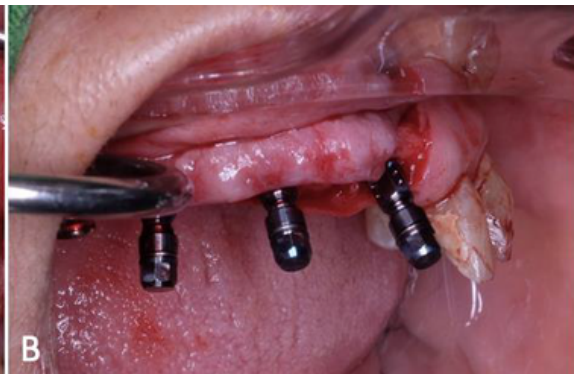


**B** Presurgical Panoramic Image

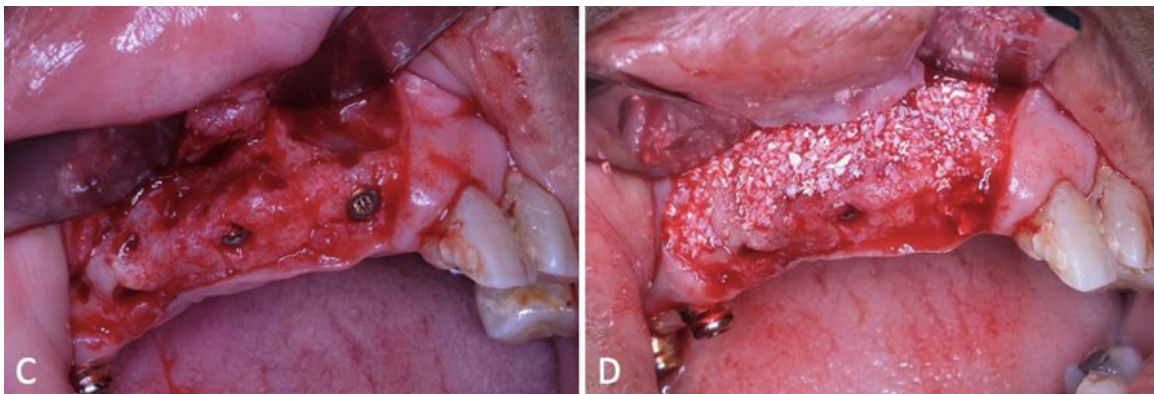
## **Preparation and Surgical procedure:**



**A.** Opening of the trapezoidal full-thickness muco- periosteal flap.

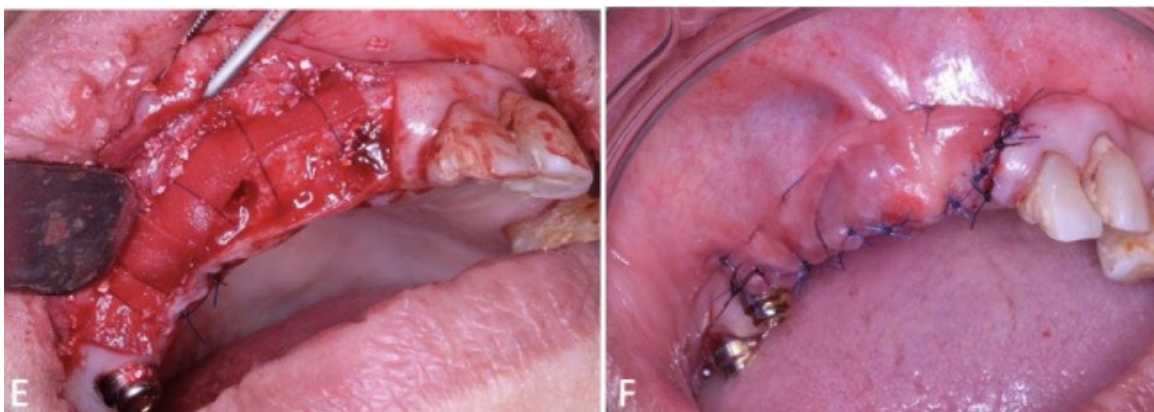


**B.** Placement of implants on teeth 12,14,21



**C. Decortication to obtain vascularization.**

**D. Placement of bovine-derived Ti-oss<sup>®</sup> xenograft mix with autogenous graft.**

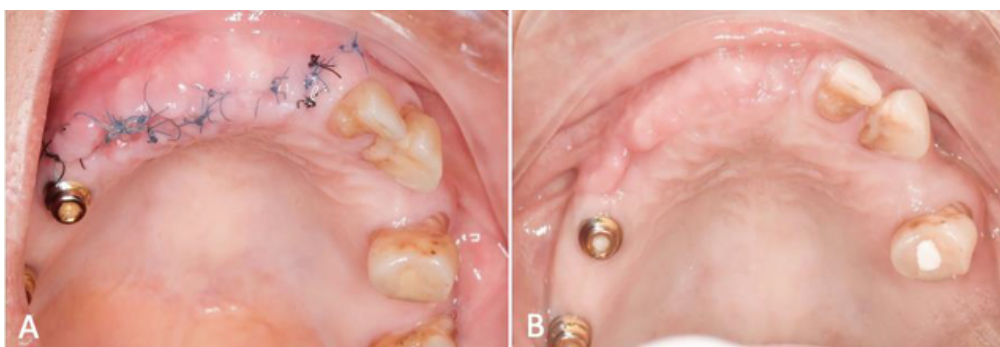


**E. Placement of the membrane stabilized by suturing.**

**F. Suturing with vertical internal mattresses, continuous locking, and interrupted suture.**

## Follow-up evaluation:

Follow-up evaluation evidenced **marked clinical improvement** demonstrating favourable and progressive healing with complete subsidence of gingival inflammation.

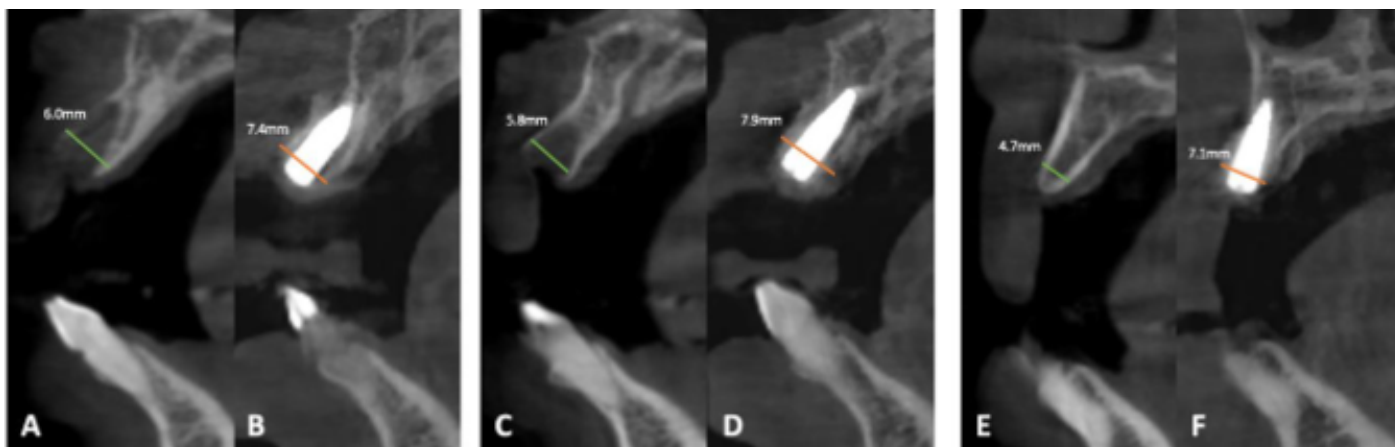


**A. 2-week showing gingival condition and B. 4-week post-op shows marked improvement.**



**Three-month post-op reassessment shows visible Soft tissue and bone thickness indicating stability.**



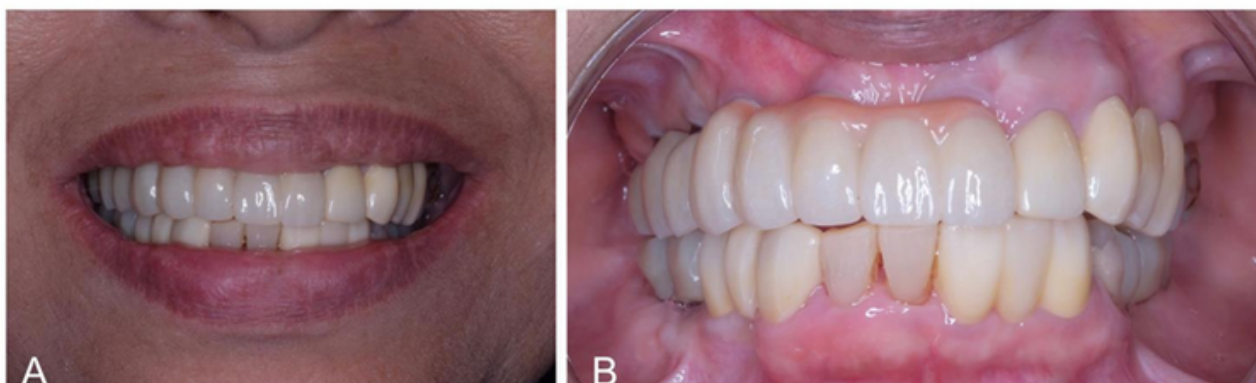


Four-months post-op, CBCT evaluation of (A,B) tooth 21, (C,D) tooth 12, and (E,F) tooth 14 . **Marked augmentation in peri-implant bone volume** surrounding teeth 21, 12 and 14 is seen.

	Site	Baseline (mm)	4 Months (mm)	Difference (mm)
Buccal-palatal bone width	21	6.0	7.4	1.4
	12	5.8	7.9	2.1
	14	4.7	7.1	2.4
Gingival Thickness		1.0	2.0	1.0

Initial clinical and CBCT examination before and 4 months after implant placement and GBR procedure.

After implant placement and GBR procedure, **differences in bone formation and increase in bone height** is observed. This findings underscore the efficiency of GBR with xenograft (Ti-oss®) and ADM, demonstrating favourable outcome both functionally and aesthetically.



Result : 7 months post-op clinical photograph of final prosthesis delivery (A,B)

**Summary** : The success of implant placement relies on the availability of adequate bone. Ti-oss® with its porous structure akin to cancellous bone in human, offers **high osteoconduction**. Further the Octacalcium phosphate (OCP)coating on Ti-oss® surfaces also induce osteoclast cells and **expedite new bone formation**. The versatility of OCP also proves advantageous in cases of extensive bone loss or when large volumes of bone are required. **GBR using Ti-oss®** not only offers significant advantages in terms of function, and aesthetics but also holds the potential to contribute positively to the overall **well-being and satisfaction of patients** undergoing implant procedures.