VERTICAL & HORIZONTAL AUGMENTATION: 7 YEARS FOLLOW-UP

PERIODONTAL DEFECT: LEFT AND RIGHT CENTRAL INCISOR

CLINICAL CASE

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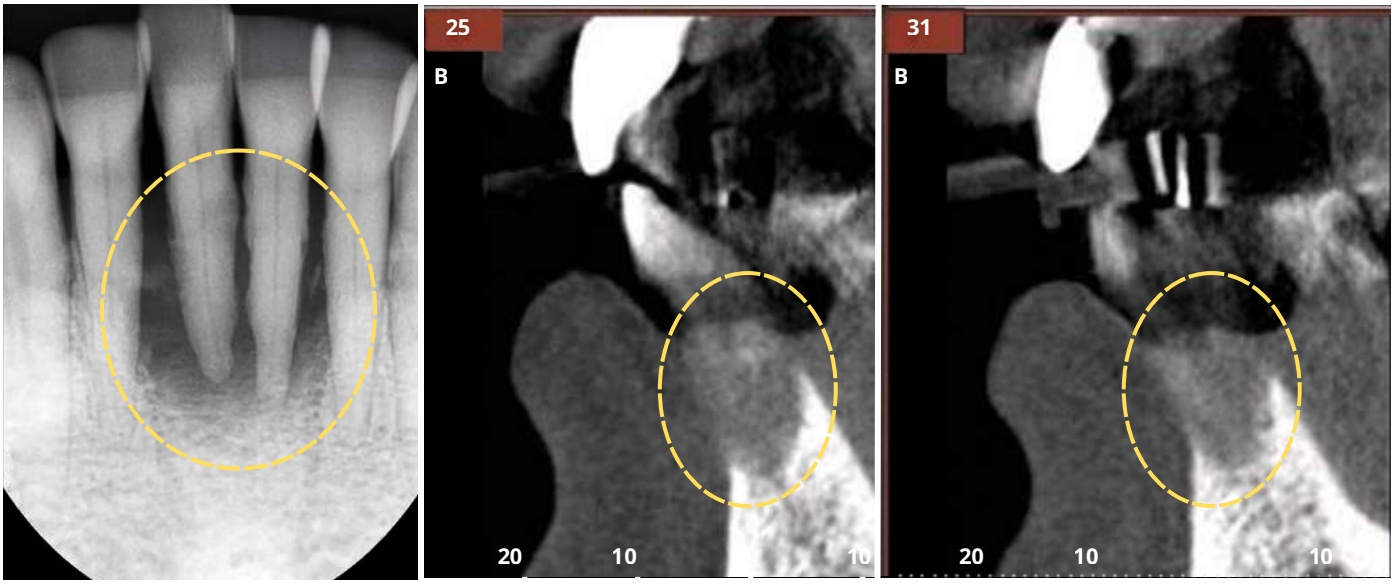

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Figure 1. Periapical radiographic and CBCT images showing a severe periodontal defect in a 58-year-old female patient involving the mandibular right and left central incisors. The treatment plan included horizontal and vertical augmentation with Ti-oss® Xenograft (Chiyewon, Korea) and implant placement in the areas of teeth 31 and 41.

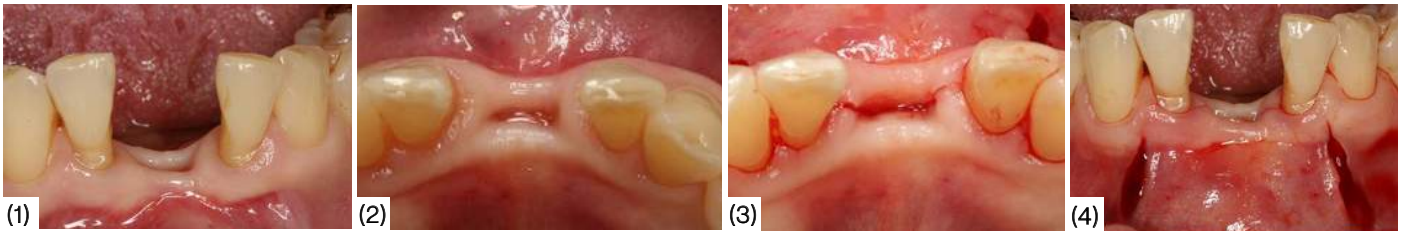

Figure 2. (1) & (2) Soft tissue image showing post-extraction curvature. (3) A linear horizontal incision was made along the gingival margin between teeth #31 and #41 (mandibular central incisors). (4) Two vertical releasing incisions were performed in the gingiva.

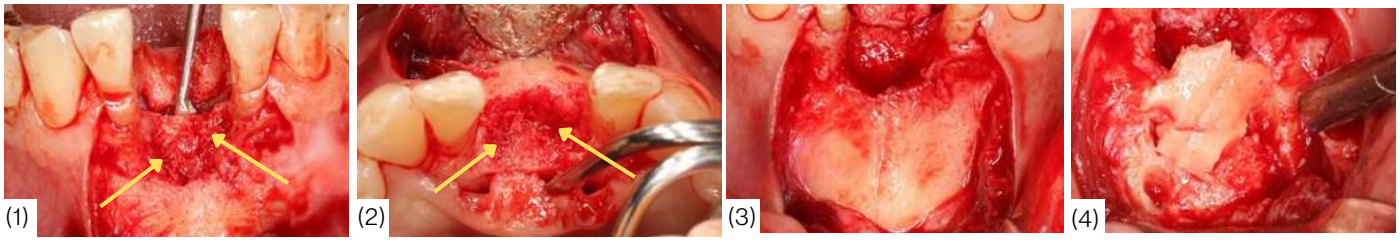

Figure 3. (1) & (2) A flap was carefully performed to provide direct access to the surgical site, exposing the bone defect. (3) & (4) Corticotomy was performed to provide adequate blood supply and prepare the surgical site. A thin block of bone was harvested as an autogenous bone graft for use with Ti-oss® bone graft (Chiyewon, Korea).

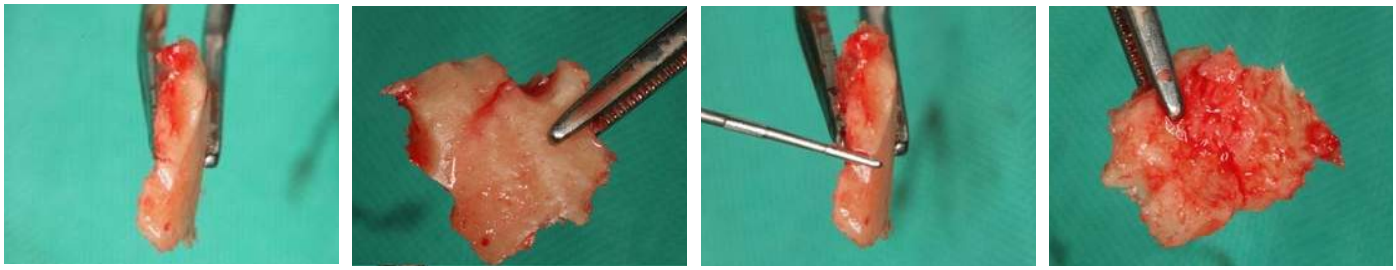

Figure 4. Harvested autogenous cortical bone block.

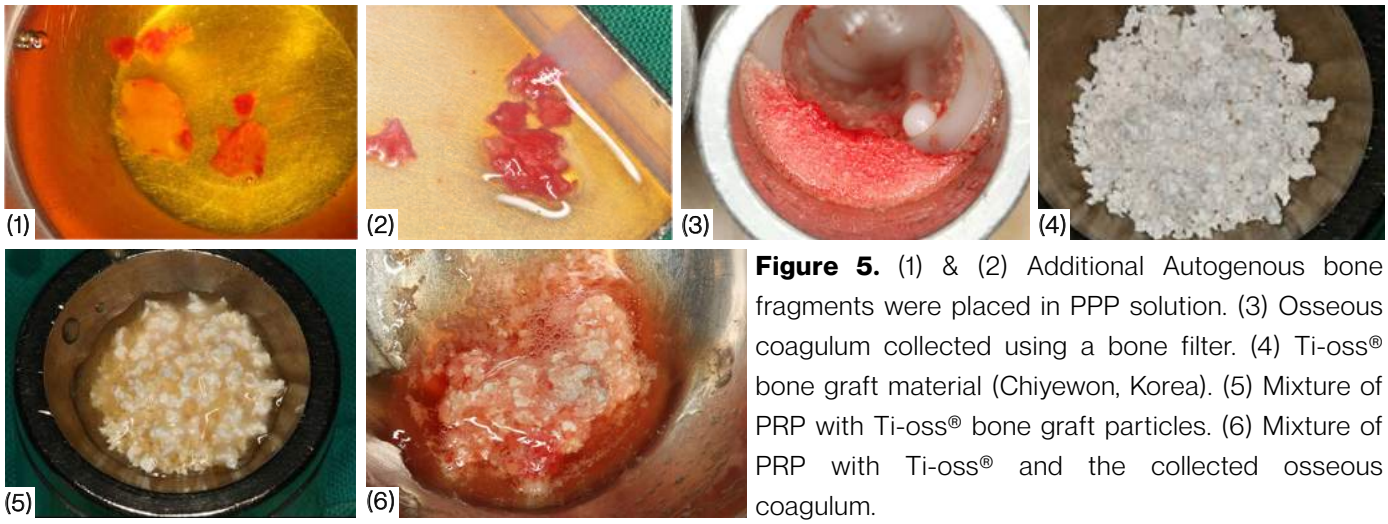

Figure 5. (1) & (2) Additional Autogenous bone fragments were placed in PPP solution. (3) Osseous coagulum collected using a bone filter. (4) Ti-oss® bone graft material (Chiyewon, Korea). (5) Mixture of PRP with Ti-oss® bone graft particles. (6) Mixture of PRP with Ti-oss® and the collected osseous coagulum.

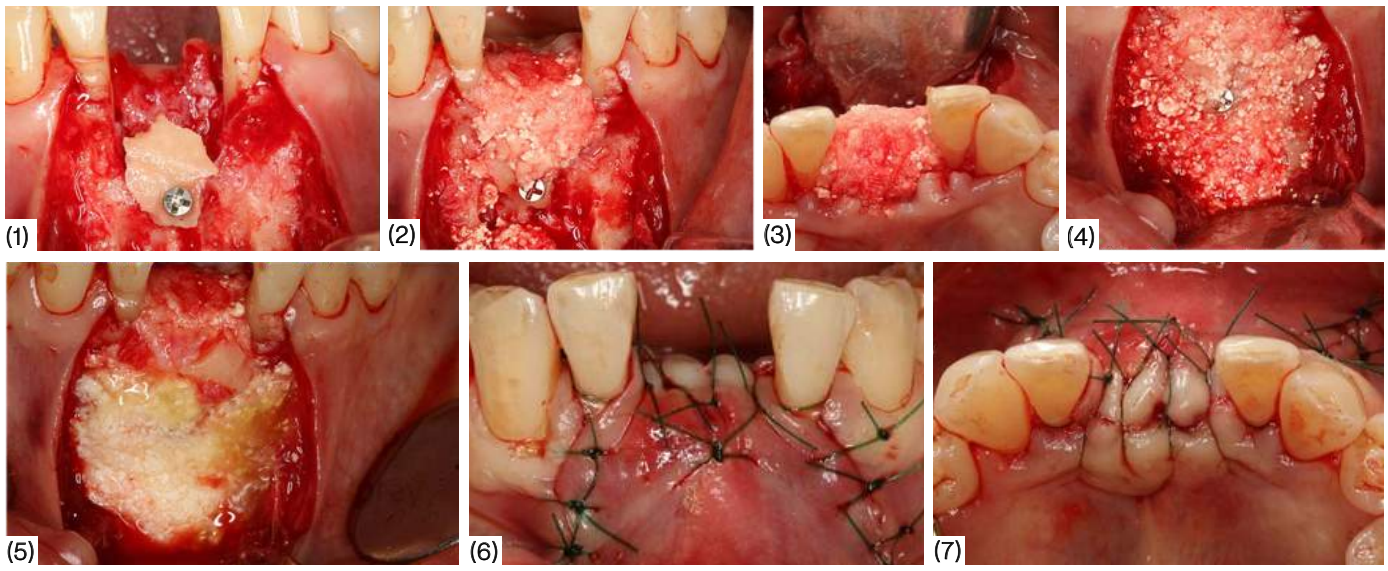

Figure 6. (1)The autogenous cortical bone block (Figure 4) was fixed with a titanium screw. (2), (3) & (4) Placement of the mixture of PRP, Ti-oss®, and collected osseous coagulum into the surgical site in the mandibular anterior region. (5) Application of PRP spray to the graft material. (6) & (7) Final flap closure following graft placement.

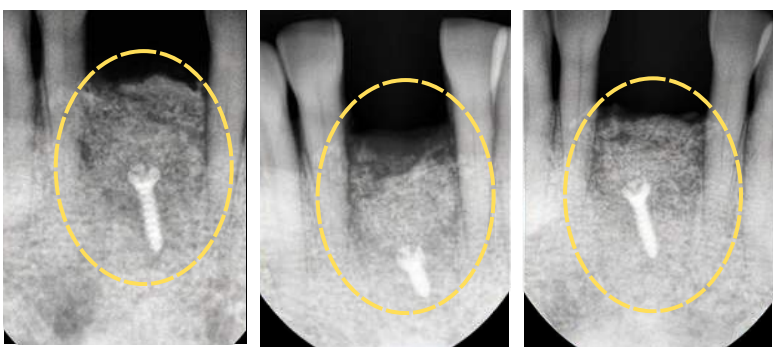

Figure 7. Right after surgery to 2 months post-surgery: Periapical radiographic images showing a comparison between right after surgery and 2 months post-surgery, with the development of radiopaque images proving good mineralization of the Ti-oss® bone graft.

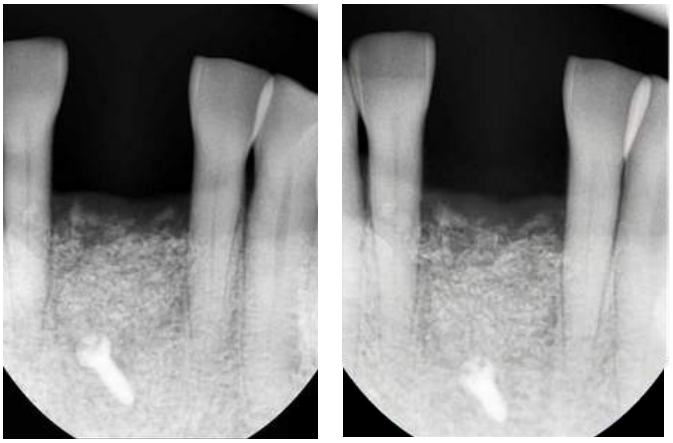

Figure 8. 8 months after surgery: Periapical images show dense mature bone, radiopaque image, around the titanium screw, with no signs of complications, suggesting successful graft integration.

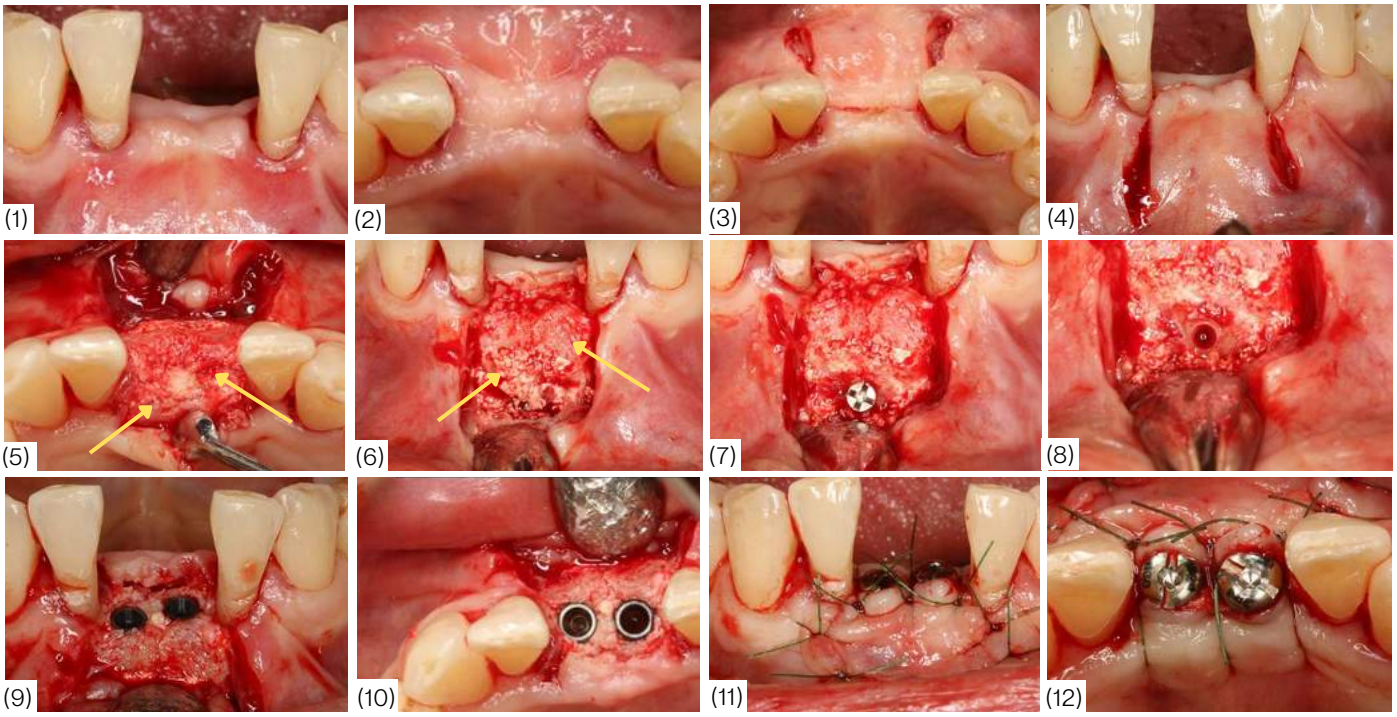

Figure 9. (1) & (2) The images show well-healed soft tissues 8 months after surgery. (3) & (4) A horizontal incision was made along the gingival margin between teeth #31 and #41, followed by two vertical releasing incisions in the gingiva. (5) & (6) A flap was performed, exposing the newly well formed dense bone. (7) & (8) Removal of the titanium screw. (9) & (10) Implant placement in the #31 and #41 areas. (11) & (12) Final closure after Implant placement.

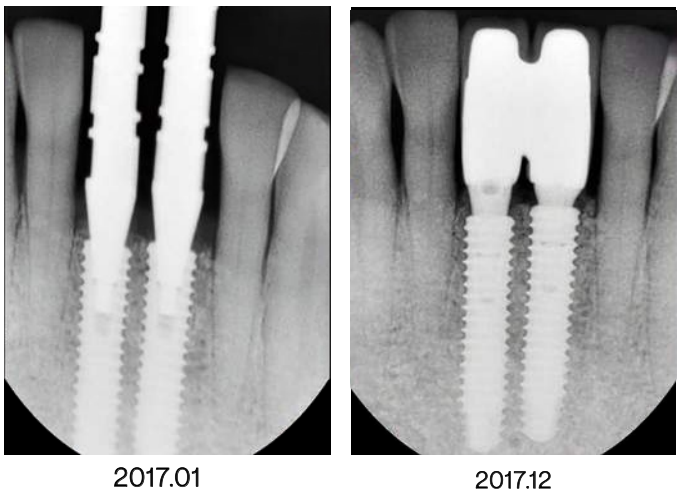

Figure 10. 1 year and 2 years after bone grafting/5 months and 1 year 4 months after implant placement: Bone around the implants appears stable and well matured, with no signs of complications, demonstrating good osteoconductivity.

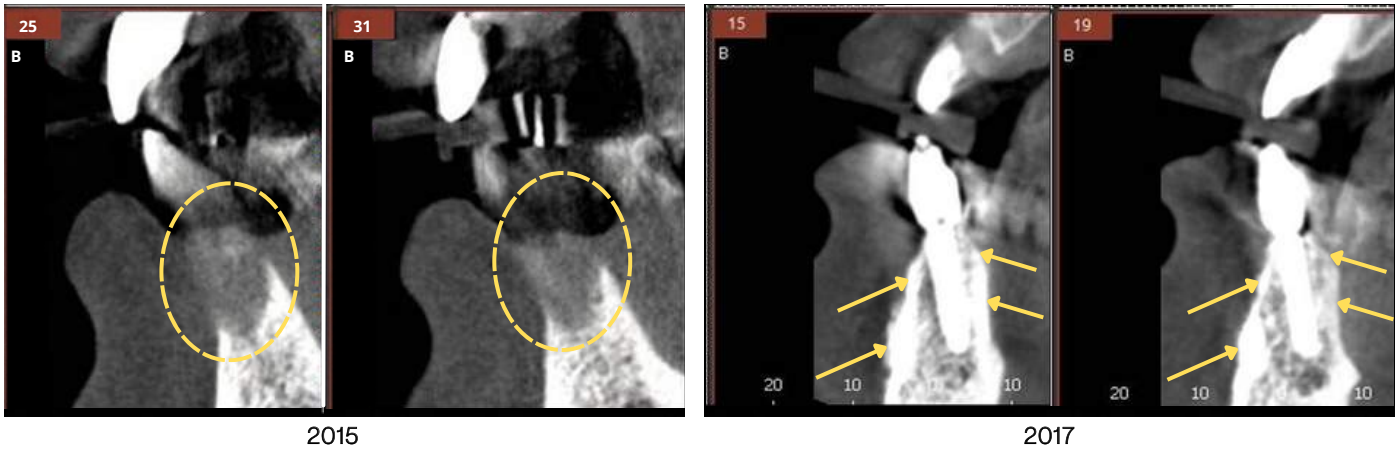

Figure 11. CBCT images show successful bone regeneration within the defect, with stable bone levels maintained over 7 years, confirming long-term regenerative success.

Figure 12. 3 years after bone grafting and 2 years after implant placement: Ti-oss® demonstrates excellent biocompatibility and osteoconductivity (periapical radiographic). The bone is mature, stable, and well integrated around the implants.

Figure 13. 7 years after bone grafting and 6 years after implant placement: periapical radiographic show bone levels remained consistent, confirming long-term regenerative success and reliability of Ti-oss® bone graft.

DISCUSSION:

Periapical radiographic images showed no side effect or complications during the healing period (7 months), with **successful Ti-oss® bone graft integration** 8 months after bone grafting surgery.

3 years after bone grafting and 2 years after implant placement, periapical images showed **mature** and **stable bone** with **good integration** around the implants. **Ti-oss®** bone graft was **successfully integrated**, demonstrating **excellent biocompatibility** and **osteoconductivity**.

Bone levels remained consistent up to 7 years after bone grafting and 6 years after implant placement, confirming the **long-term stability** and **successful integration** of the **Ti-oss® bone graft**.

This clinical case demonstrates the **reliability** of bone formation and **long-term stability** following **Ti-oss®** grafting.

Thank You

Ti-OSS®
CANCELLOUS SUBSTITUTE

Octabone®

Premium Brand

Standard Brand

Ti-oss® Bone Substitute - Vial Type

Re	Code	Product/Weight		Size
1	25-0512	Ti-oss®	0.25g/0.6CC	0.5-1.2mm
2	05-0512	Ti-oss®	0.5g/1.2CC	0.5-1.2mm
3	10-0512	Ti-oss®	1.0g/2.3CC	0.5-1.2mm
4	20-0512	Ti-oss®	2.0g/4.5CC	0.5-1.2mm
5	25-1217	Ti-oss®	0.25g/0.75CC	1.2-1.7mm
6	05-1217	Ti-oss®	0.5g/1.5CC	1.2-1.7mm
7	10-1217	Ti-oss®	1.0g/3.0CC	1.2-1.7mm
8	20-1217	Ti-oss®	2.0g/6.0CC	1.2-1.7mm
9	25-0210	Ti-oss®	0.25g/0.45CC	0.2-1.0mm
10	05-0210	Ti-oss®	0.5g/0.8CC	0.2-1.0mm
11	10-0210	Ti-oss®	1.0g/1.5CC	0.2-1.0mm
12	20-0210	Ti-oss®	2.0g/3.0CC	0.2-1.0mm

Octabone ® Bone Substitute - Vial Type

Re	Code	Product/Weight		Size
1	25-0512	Octabone®	0.25g/0.6CC	0.5-1.2mm
2	05-0512	Octabone®	0.5g/1.2CC	0.5-1.2mm
3	10-0512	Octabone®	1.0g/2.3CC	0.5-1.2mm
4	20-0512	Octabone®	2.0g/4.5CC	0.5-1.2mm
5	25-1217	Octabone®	0.25g/0.75CC	1.2-1.7mm
6	05-1217	Octabone®	0.5g/1.5CC	1.2-1.7mm
7	10-1217	Octabone®	1.0g/3.0CC	1.2-1.7mm
8	20-1217	Octabone®	2.0g/6.0CC	1.2-1.7mm
9	25-0210	Octabone®	0.25g/0.45CC	0.2-1.0mm
10	05-0210	Octabone®	0.5g/0.8CC	0.2-1.0mm
11	10-0210	Octabone®	1.0g/1.5CC	0.2-1.0mm
12	20-0210	Octabone®	2.0g/3.0CC	0.2-1.0mm

Ti-oss® Bone Substitute - Syringe Type

13	S25-0512	Ti-oss®	0.25g/0.6CC	0.5-1.2mm
14	S05-0512	Ti-oss®	0.5g/1.2CC	0.5-1.2mm
15	S25-1217	Ti-oss®	0.25g/0.75CC	1.2-1.7mm
16	S05-1217	Ti-oss®	0.5g/1.5CC	1.2-1.7mm
17	S25-0210	Ti-oss®	0.25g/0.45CC	0.2-1.0mm
18	S05-0210	Ti-oss®	0.5g/0.8CC	0.2-1.0mm

Octabone® Bone Substitute - Syringe Type

13	S25-0512	Octabone®	0.25g/0.6CC	0.5-1.2mm
14	S05-0512	Octabone®	0.5g/1.2CC	0.5-1.2mm
15	S25-1217	Octabone®	0.25g/0.75CC	1.2-1.7mm
16	S05-1217	Octabone®	0.5g/1.5CC	1.2-1.7mm
17	S25-0210	Octabone®	0.25g/0.45CC	0.2-1.0mm
18	S05-0210	Octabone®	0.5g/0.8CC	0.2-1.0mm

Ti-oss® Bone Substitute - Block Type

19	BLK8812	Ti-oss® Block	8 x 8 x 12mm
20	BLK8825	Ti-oss® Block	8 x 8 x 25mm

Octabone® Bone Substitute - Block Type

19	BLK8812	Octabone® Block	8 x 8 x 12mm
20	BLK8825	Octabone® Block	8 x 8 x 25mm

Ti-OSS Guide®

Ti-oss® Guide - Biodegradable Collagen Membrane

21	DTG-10002	Ti-oss® Guide	15 x 30mm
22	DTG-10006	Ti-oss® Guide	30 x 40mm

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