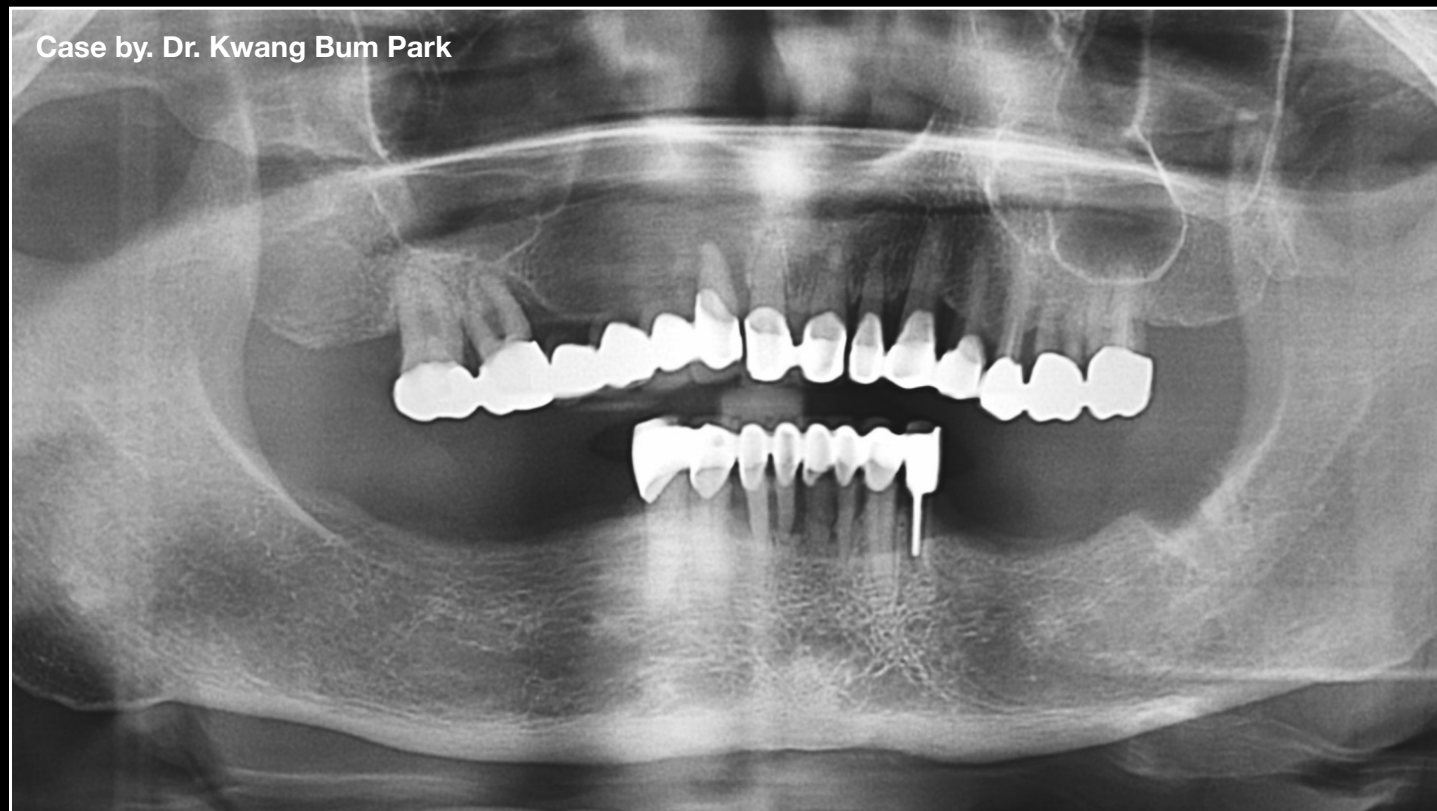


**The advantage of SmarThor Piezo
machine and AnyRidge implant
system at the Mandibular thin ridge
case (II)**

Dr. Kwang Bum Park

Case by. Dr. Kwang Bum Park

Case by. Dr. Kwang Bum Park

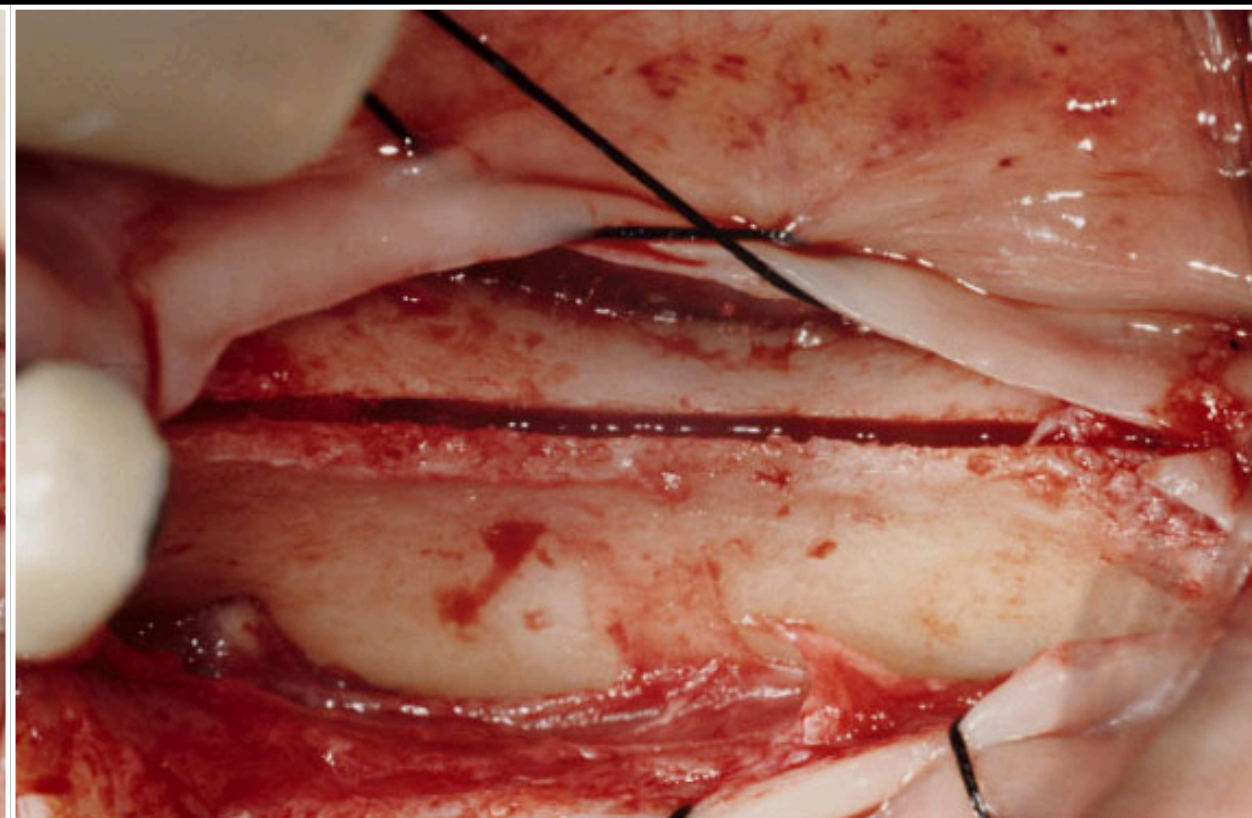
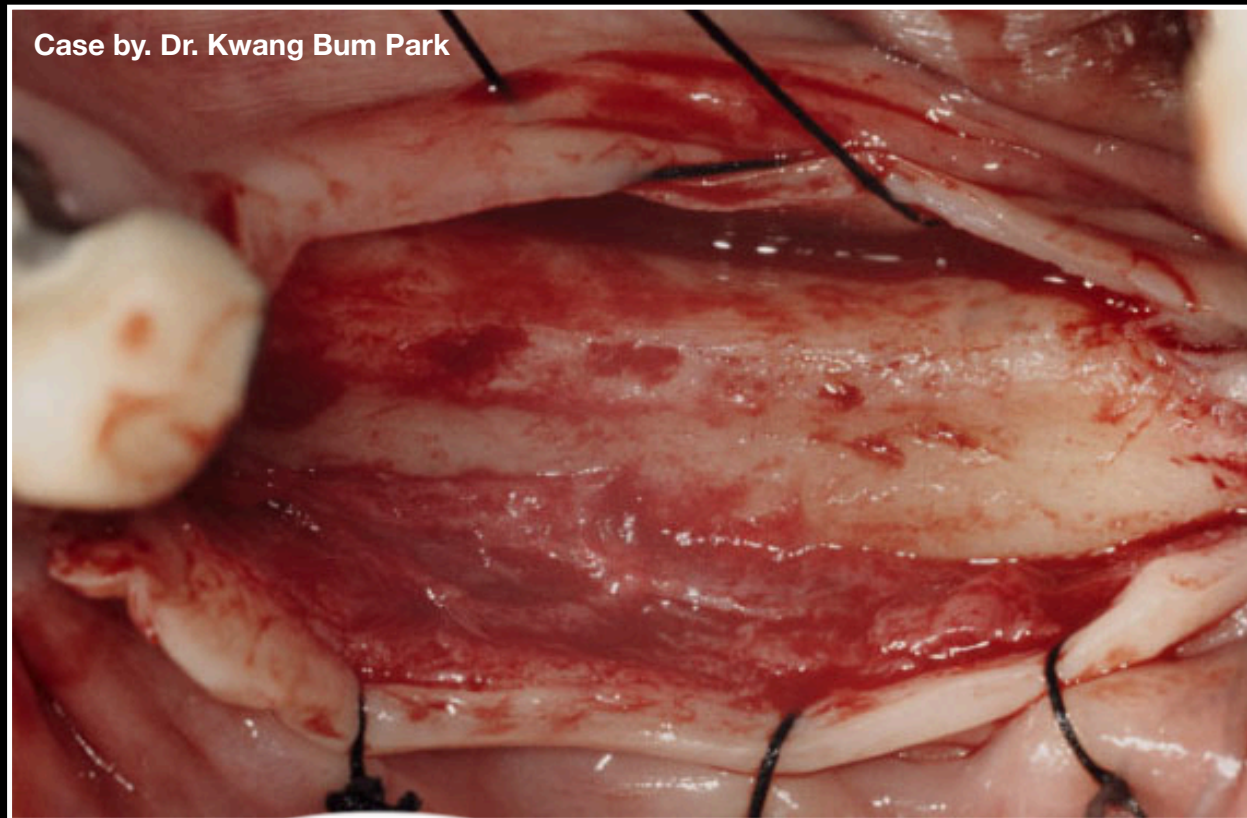


A 74 year-old female patient complained for her ill-fitting denture and chewing difficulty, especially on the left where the 3rd molar extracted recently. She had advanced periodontitis on the remaining teeth, but she only asked to have implant treatment on the mandibular missing areas.



The ridge condition appeared very thin with limited amount of keratinized tissue

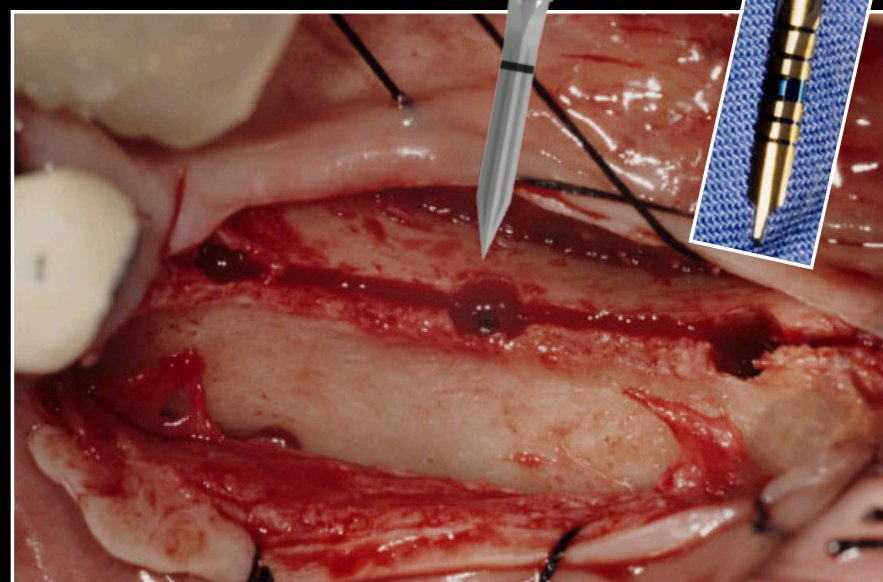
Case by. Dr. Kwang Bum Park



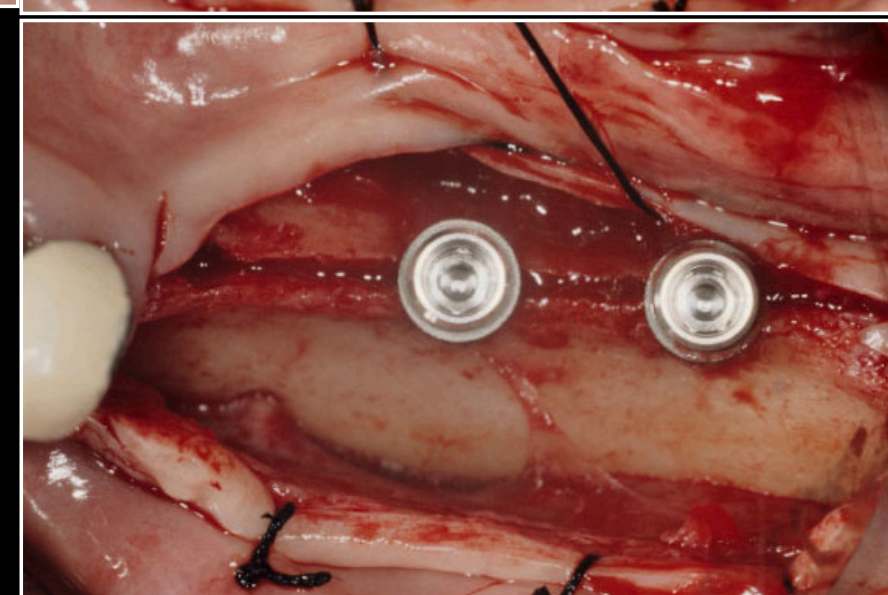
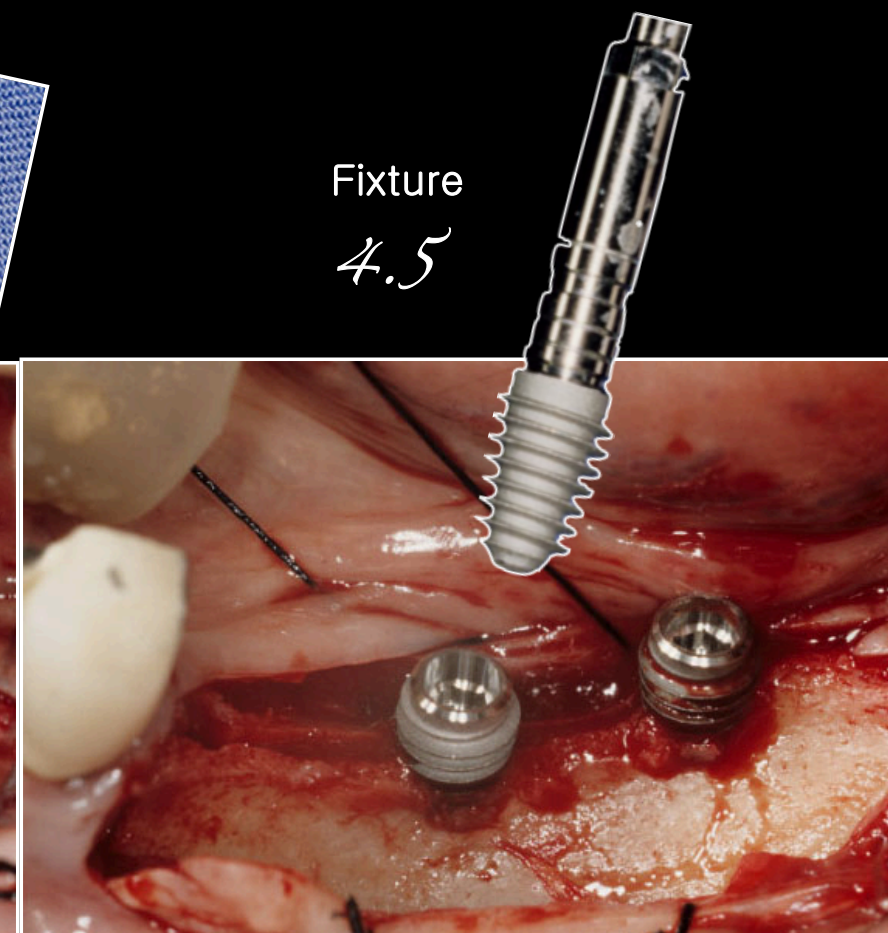
When the flaps on the left were reflected, thin ridge of 2-3mm thickness with a shallow undercut was exposed. And a horizontal bony cut was made with a Thor. In consideration of buccal bone resorption, the bony cut was made toward buccal side a little bit at the crest.

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Drill
Lance @ 2.9

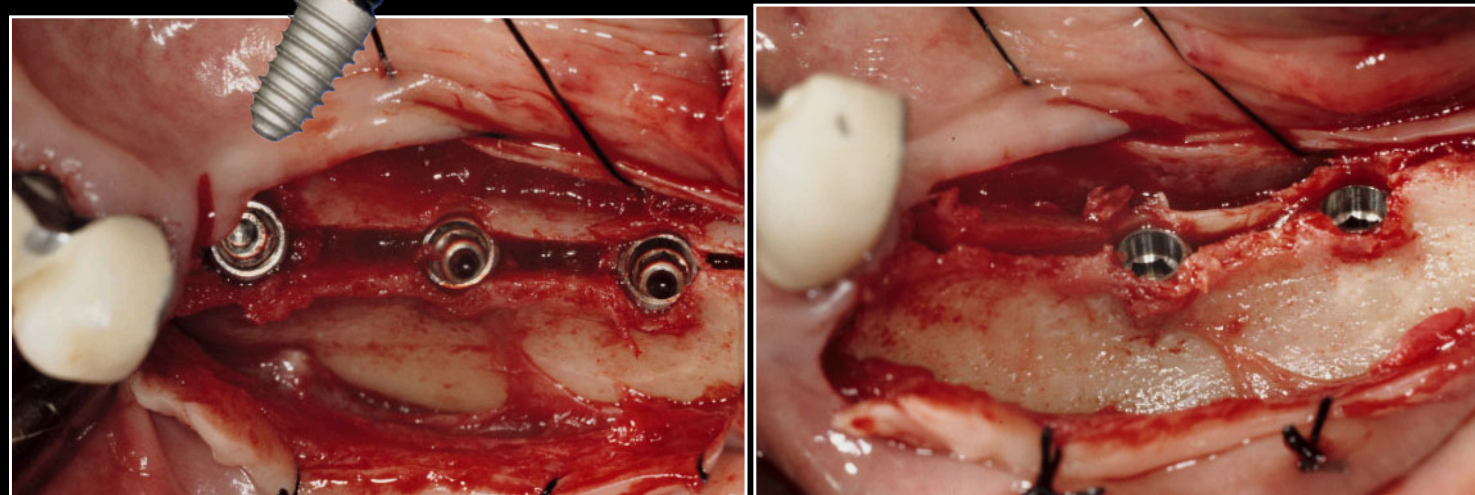


Fixture
4.5

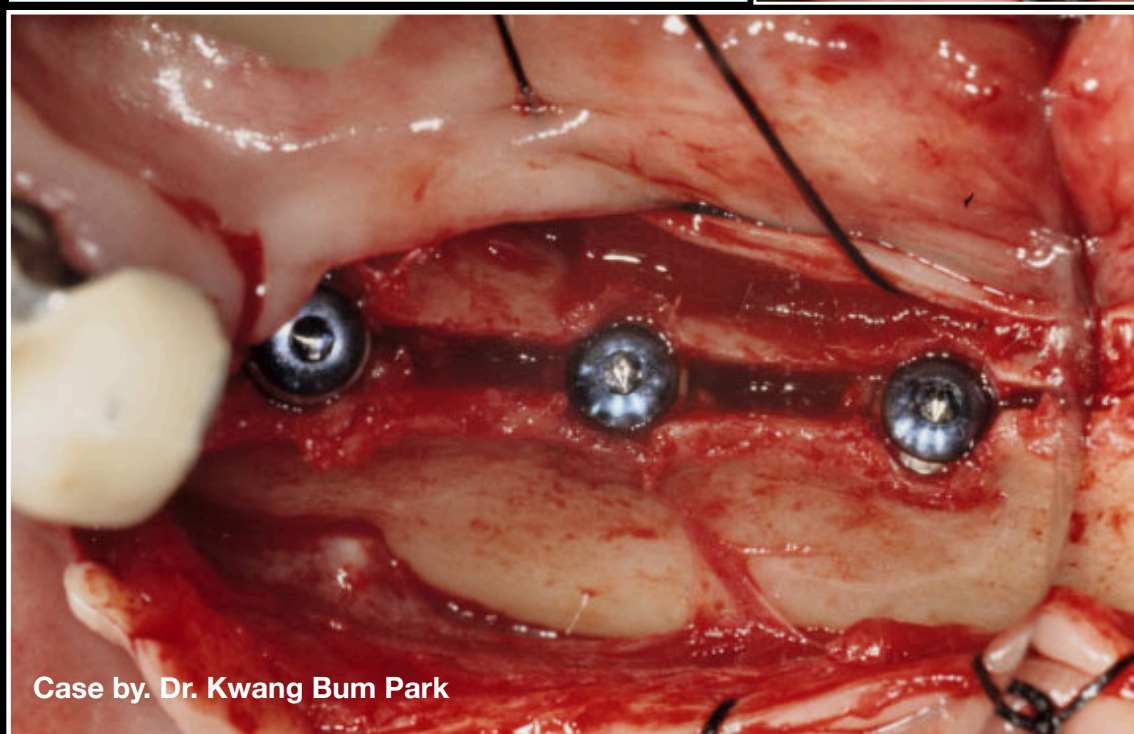


For the second premolar and the first molar, only a lance drilling which has 2mm in diameter was used. For the second molar area where the ridge is a little bit wide, 2.9 drilling was made. Then two 4.5x8.5mm fixtures started to be placed into molar area. The 40 Ncm set handpiece inserted those fixtures at this point, and still more than half of the fixtures were exposed above the ridge. From the occlusal view, we can see the difference between the ridge width and fixture diameter.

Fixture 4.0



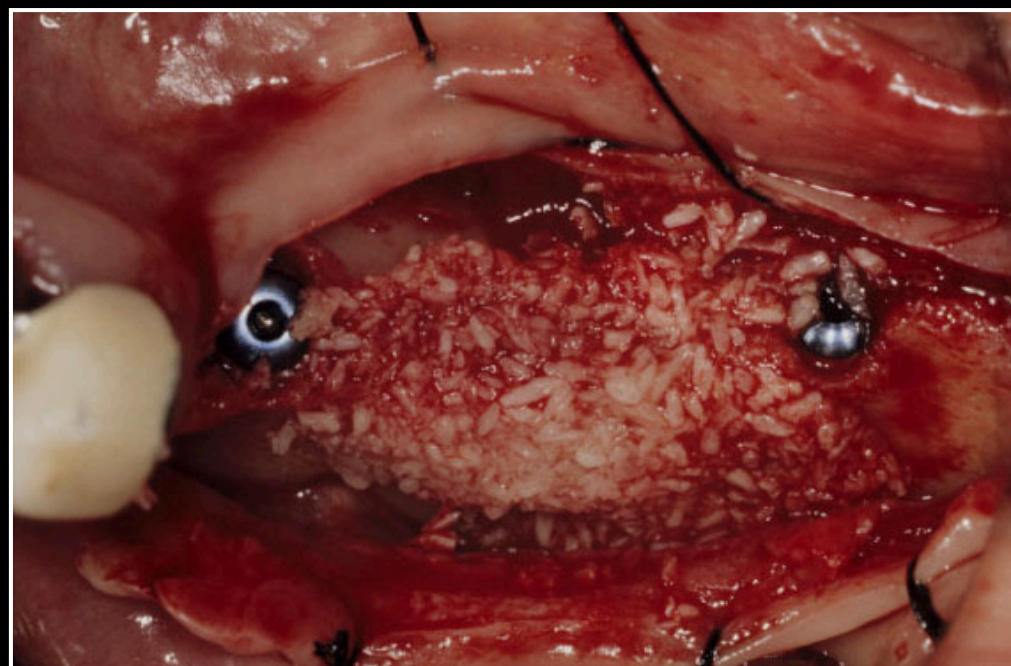
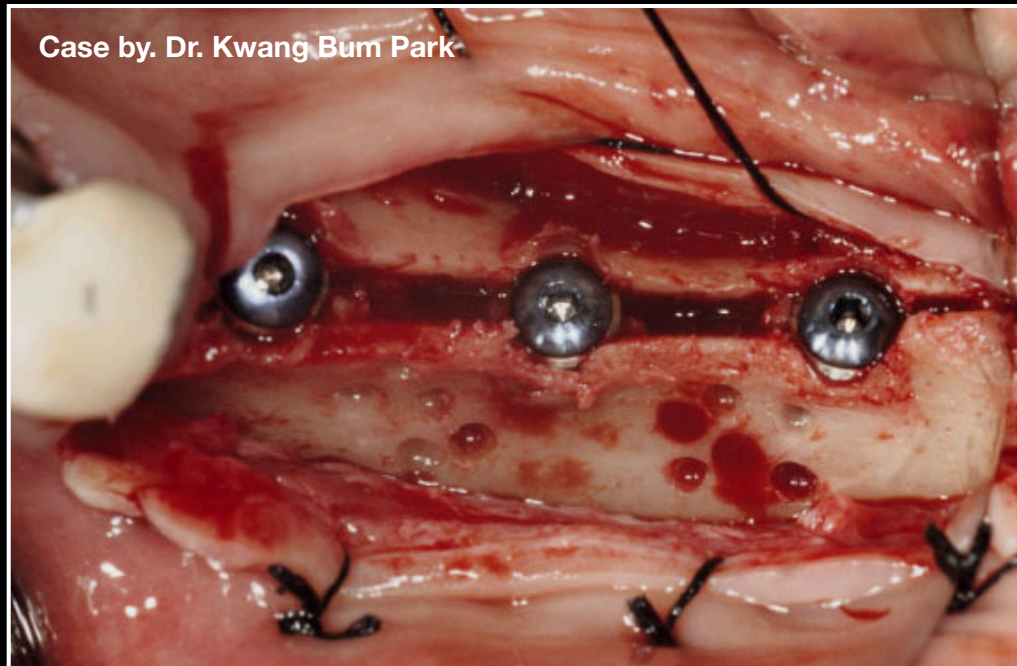
Two fixtures were placed completely under the crest with a hand wrench. And a 4.0mm diameter fixture was placed into the second premolar where the ridge width was narrowest. All the fixtures had excellent initial stability. Even there was small green stick fracture on the crest during implant placement in some case, there was no problem at all. The recommendable position of fixture platform is 1.0mm under the crest, considering future bone remodeling.



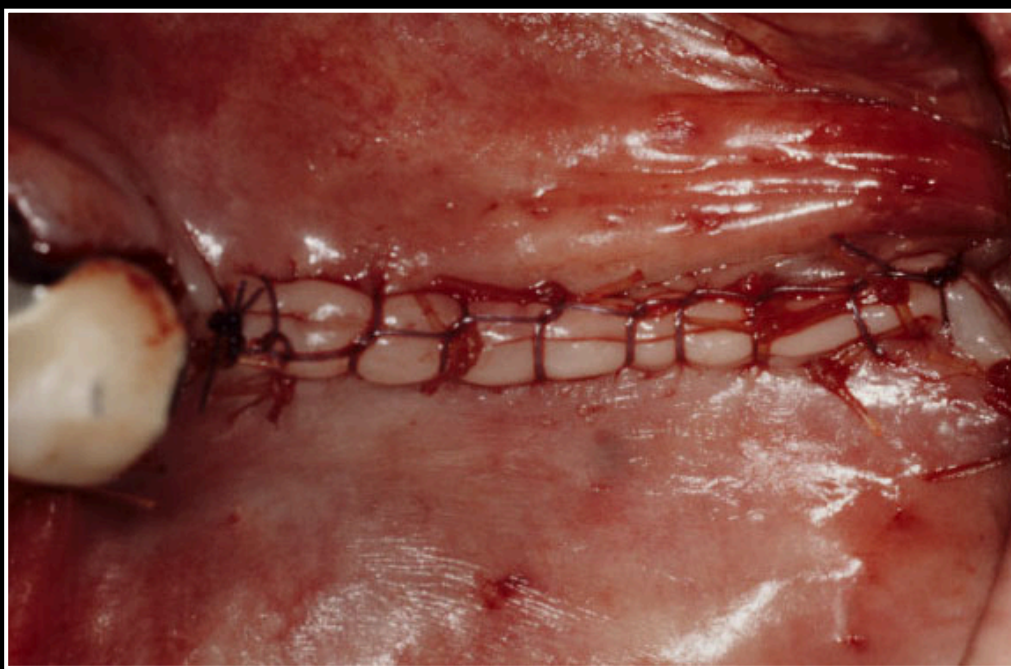
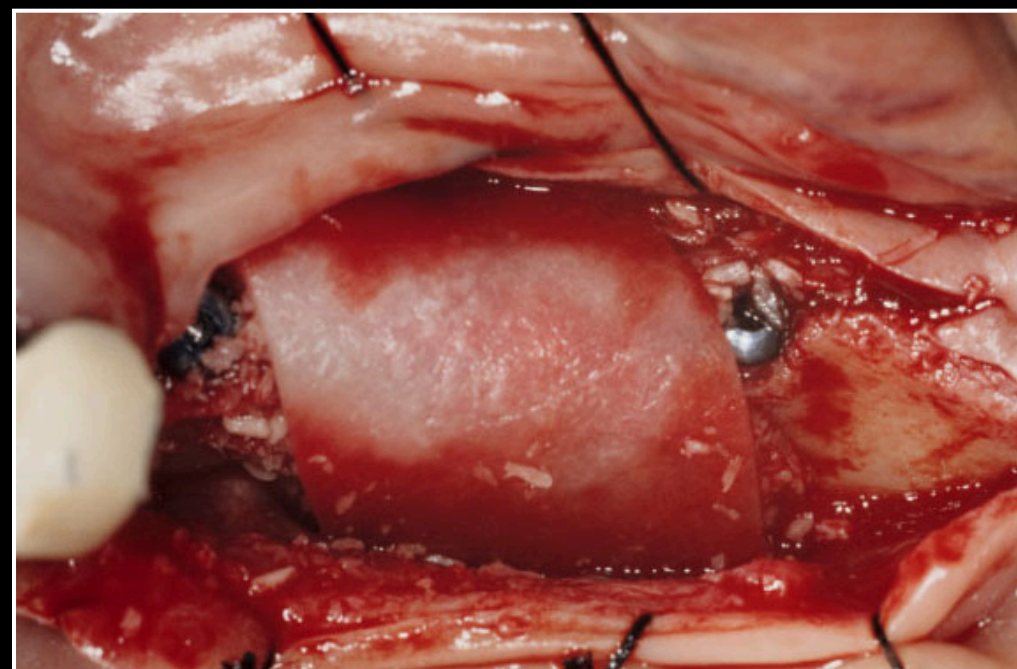
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Cover screws were connected with fixtures to make primary closure. Due to the undercut below the crest, the buccal bone thickness was thought not enough to maintain the crestal bone height around those fixtures.

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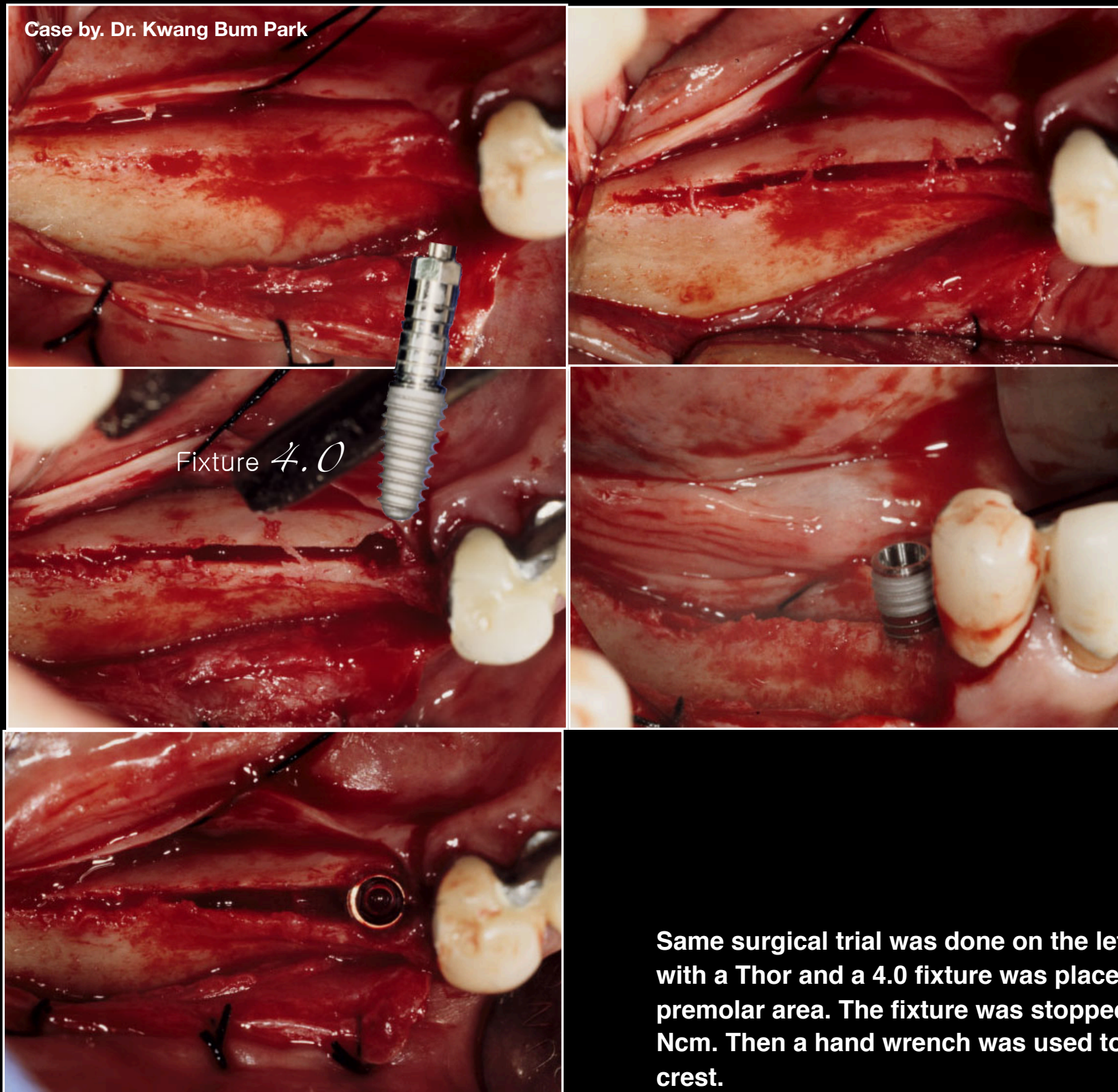


So it was decided to do bone graft on the buccal side and into the gap of ridge split.
Following cortical penetration on the buccal plate, allogenic bone graft was placed



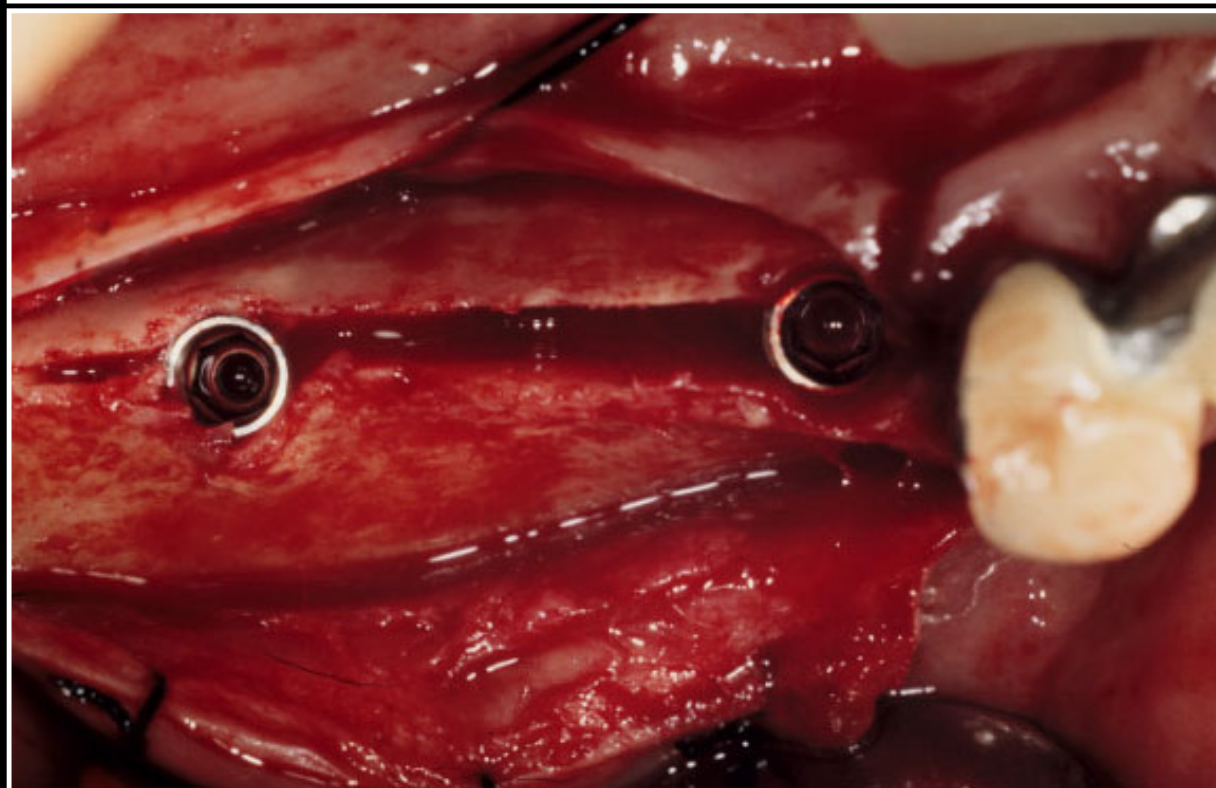
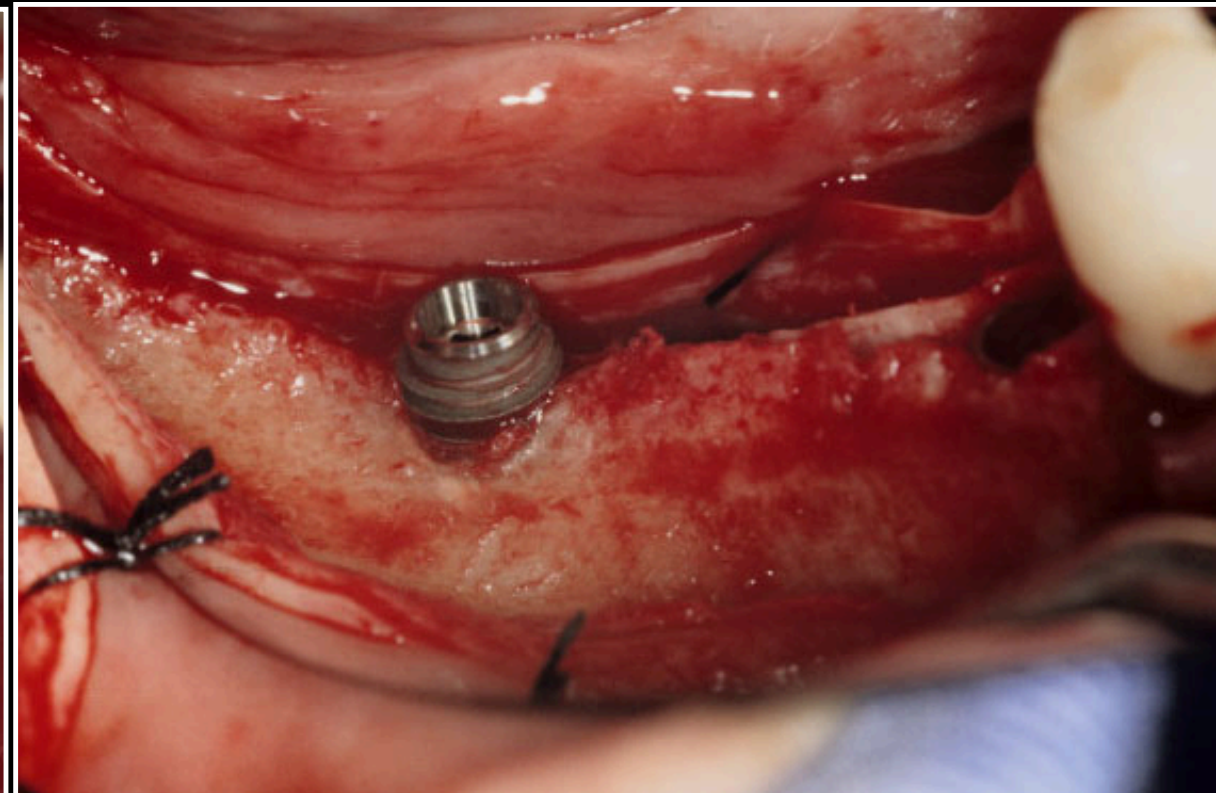
A collagen membrane was placed over the bone graft and primary closure was made with releasing incision on the periosteum.

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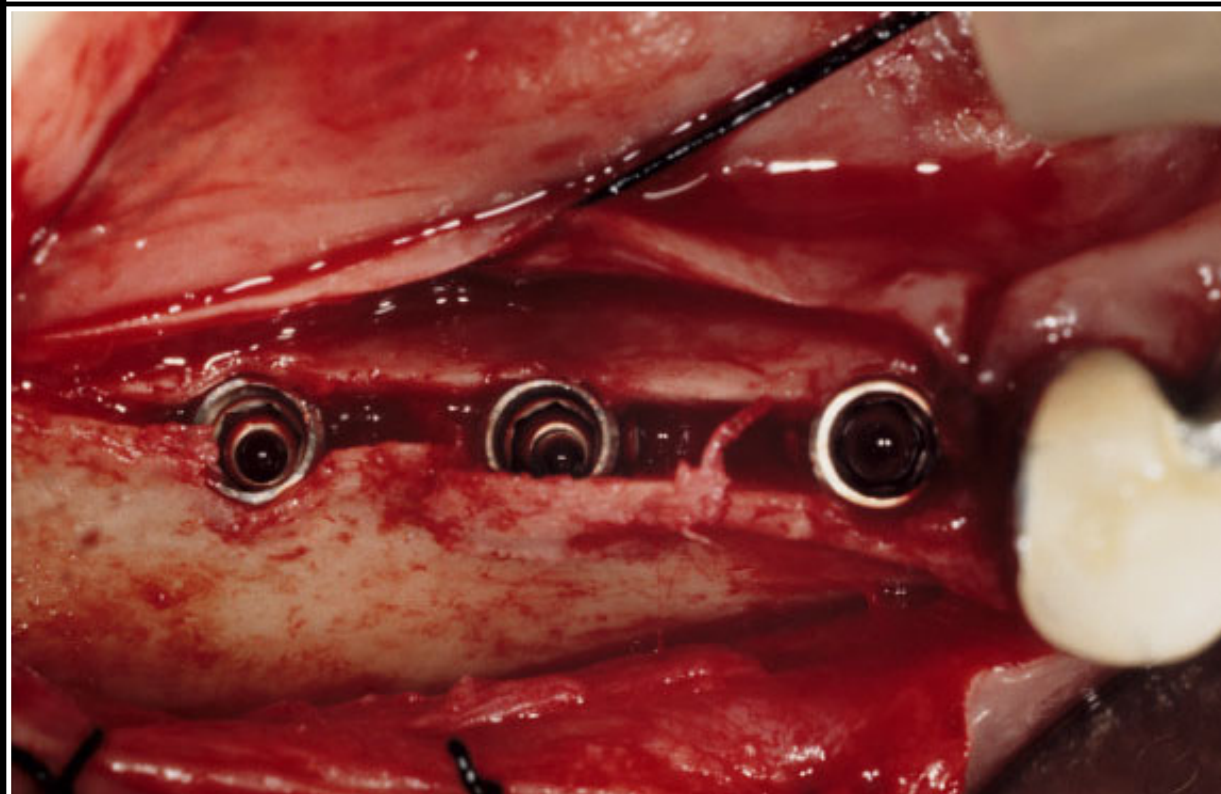
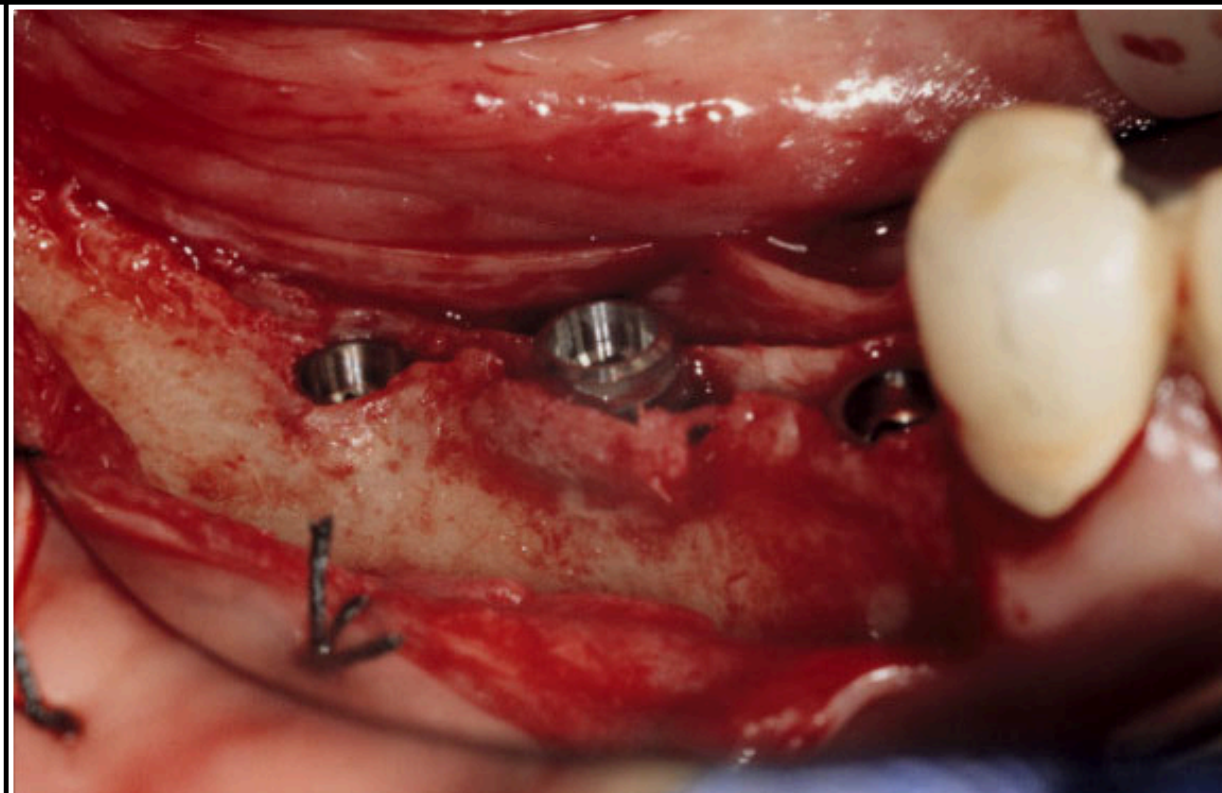
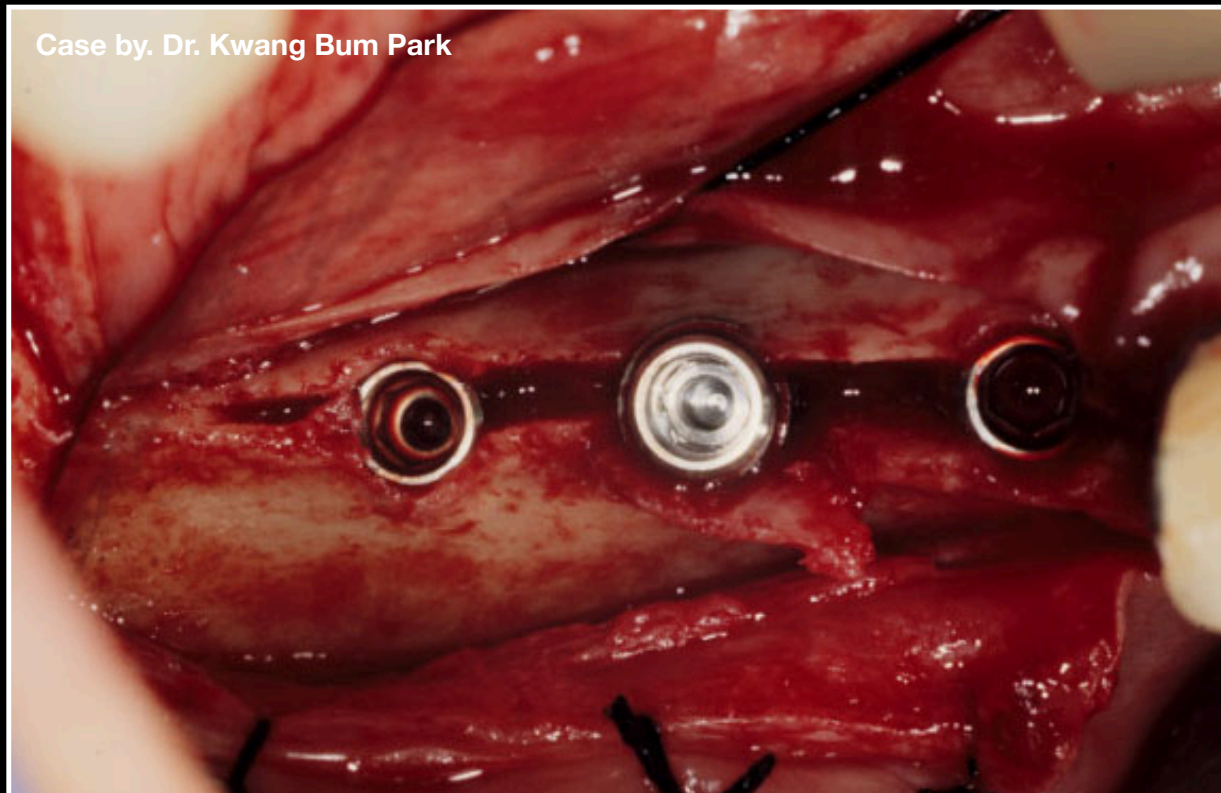
Same surgical trial was done on the left molar area. A horizontal bony cut was made with a Thor and a 4.0 fixture was placed following 2.9mm drilling on the second premolar area. The fixture was stopped at the middle with the handpiece force of 40 Ncm. Then a hand wrench was used to place the fixture completely 1.0mm under the crest.

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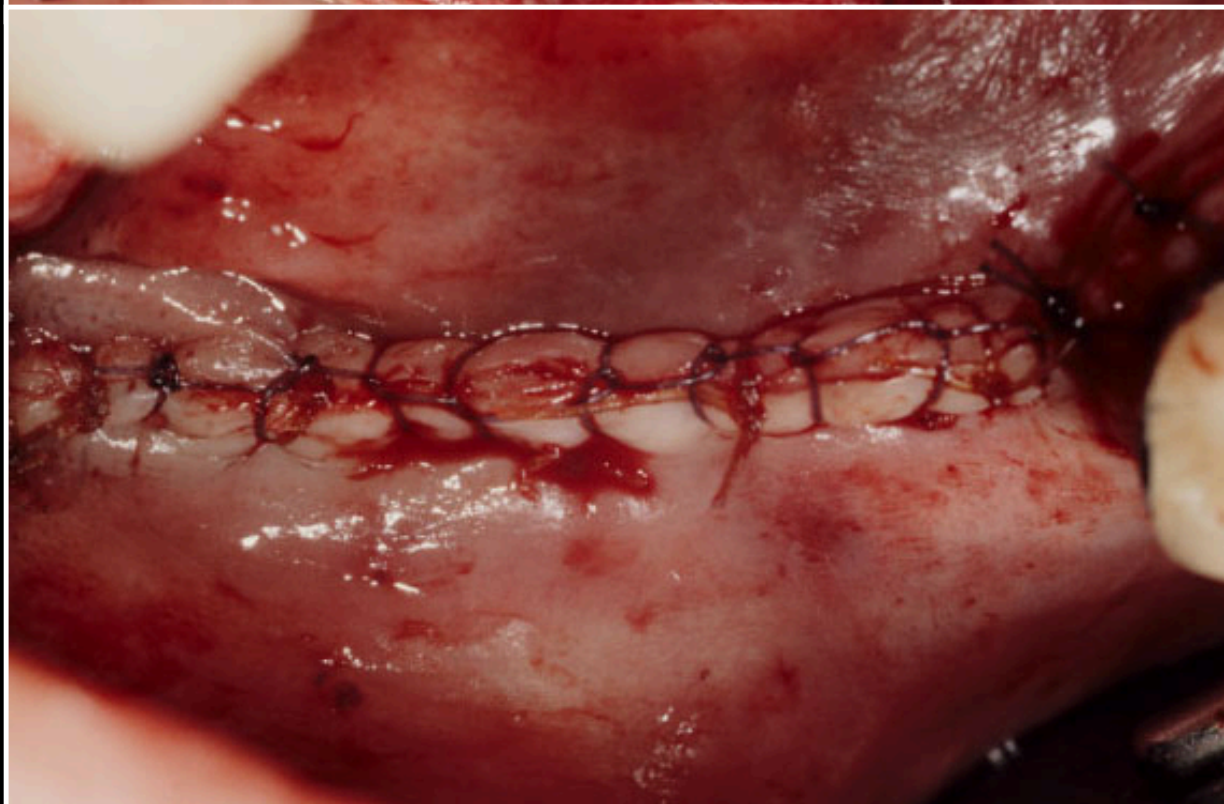
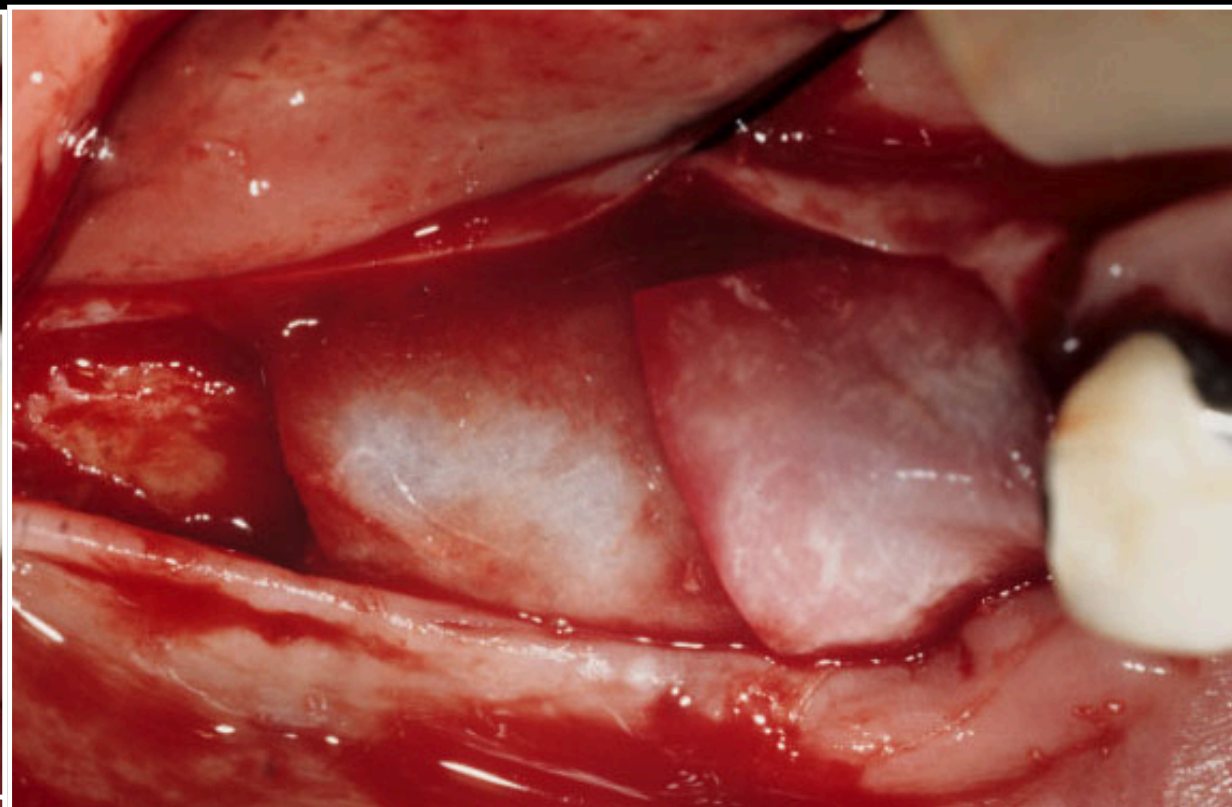
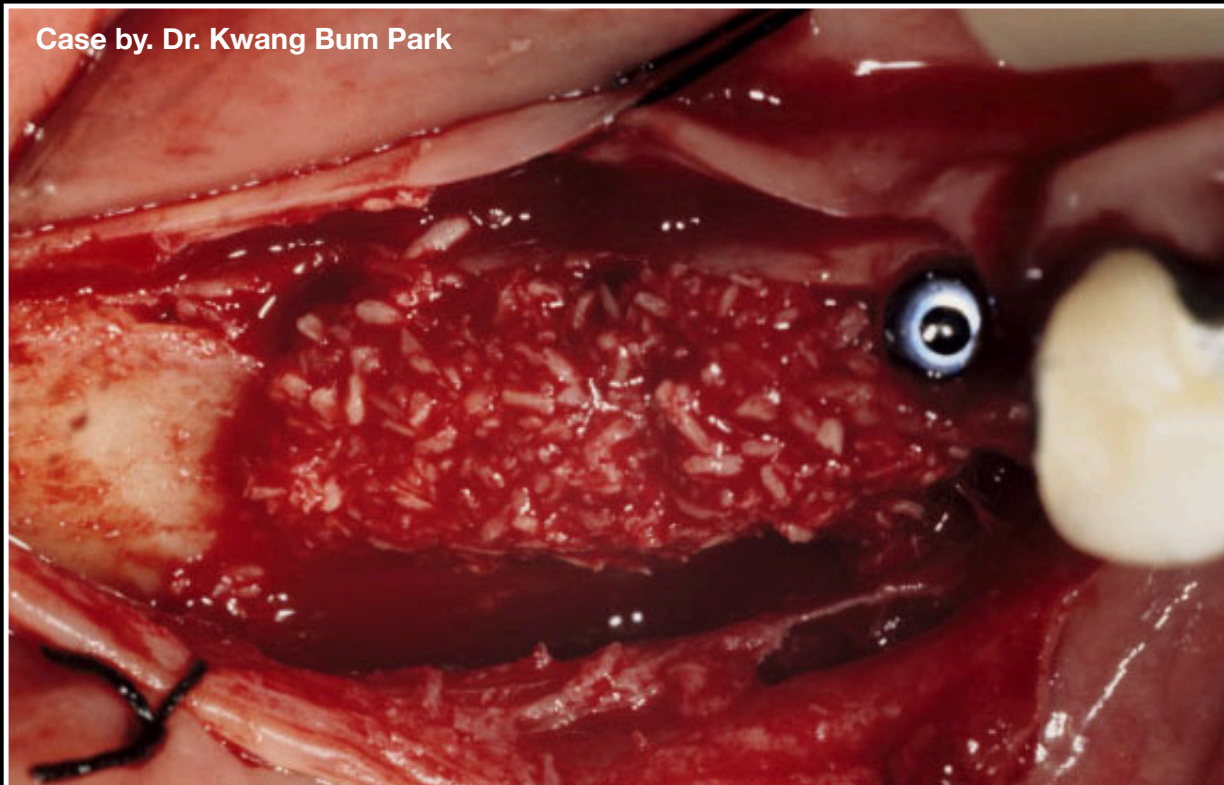
The second fixture was tried to place into the second molar position. As seen in these photos, the expansion of ridge was made to buccal side even the bony cut was made at the center of crest. This was really good to see to reduce worries about the positioning and angulation of fixtures at the atrophied ridge.

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The third fixture was placed without drilling in the middle. There was a green stick fracture at the crest, but when it was completely placed into the bone, the fractured bone returned to the original position. And there was not any movement on the lingual plate, nor green stick fractures even!

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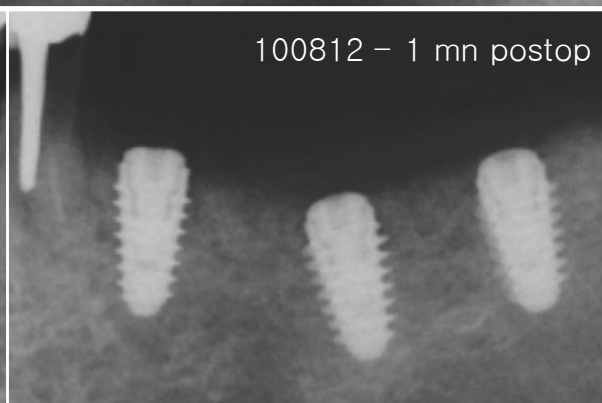
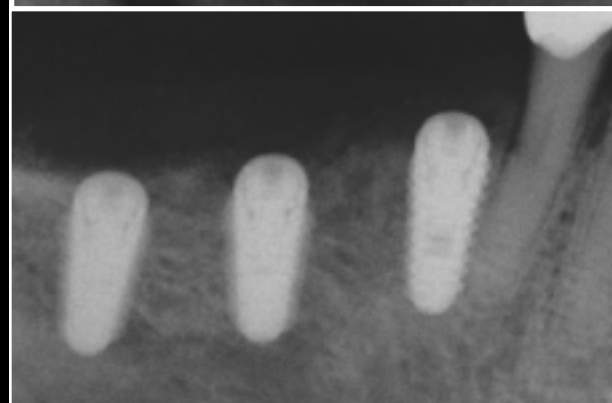


Same with the left side, allogenic graft was placed on the buccal and into the gap between fixtures. Collagen membranes were placed on the top of bone graft. Following releasing incision, the primary closure was made.

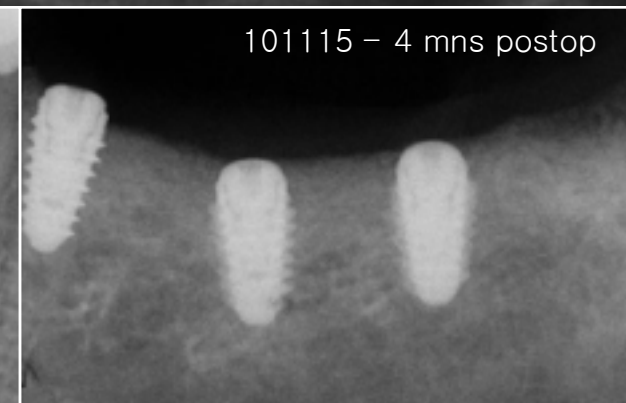
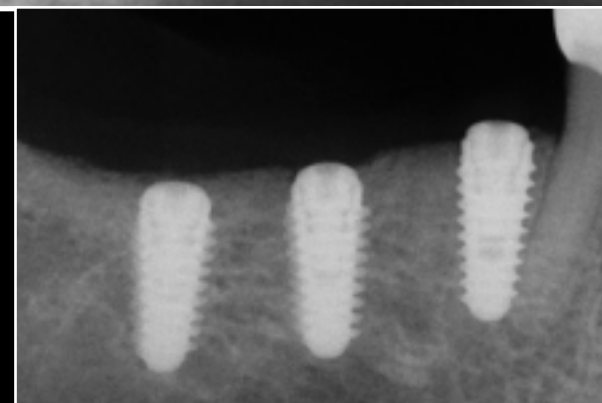
Case by. Dr. Kwang Bum Park



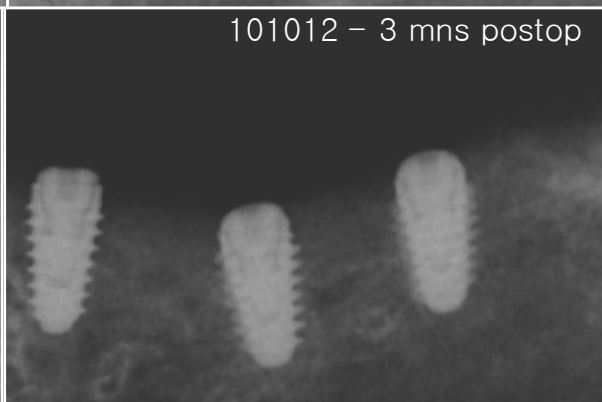
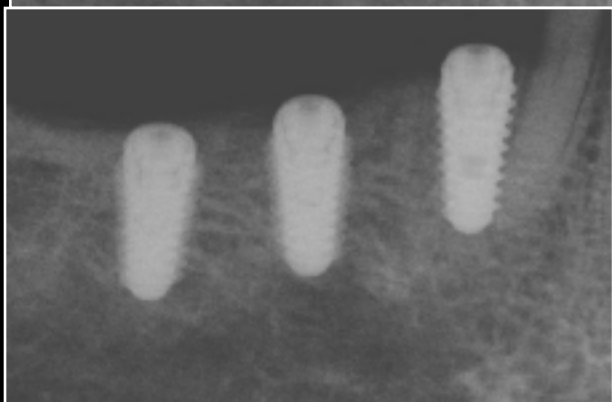
100812 – 1 mn postop



101115 – 4 mns postop

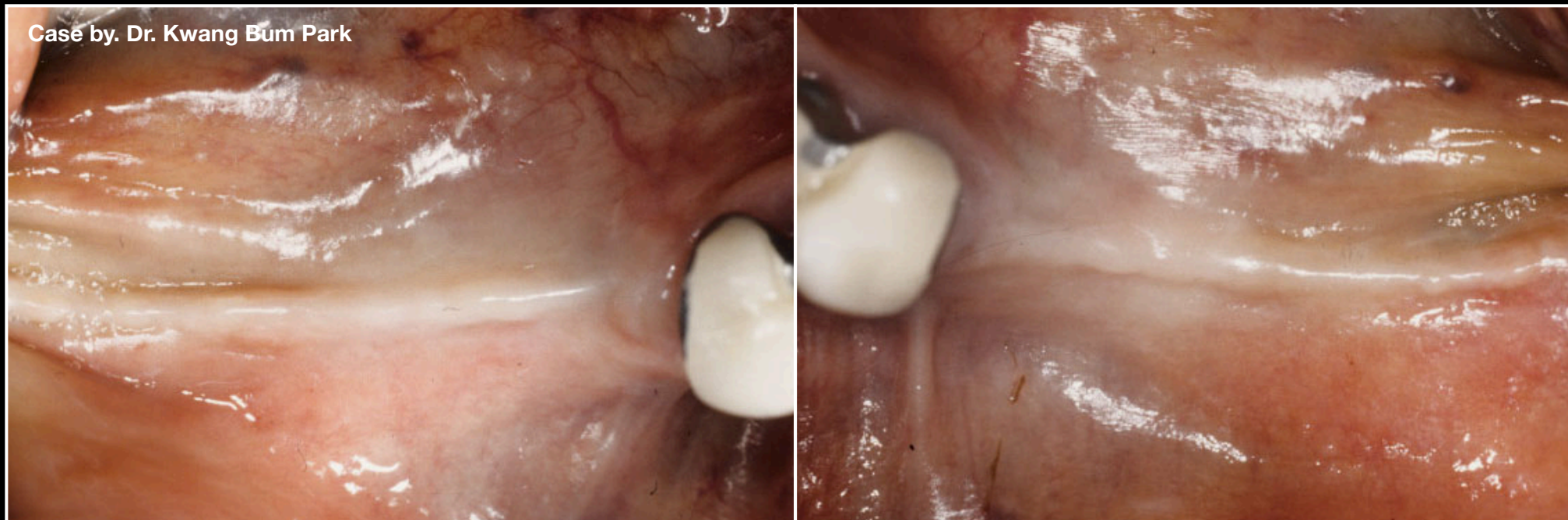


101012 – 3 mns postop

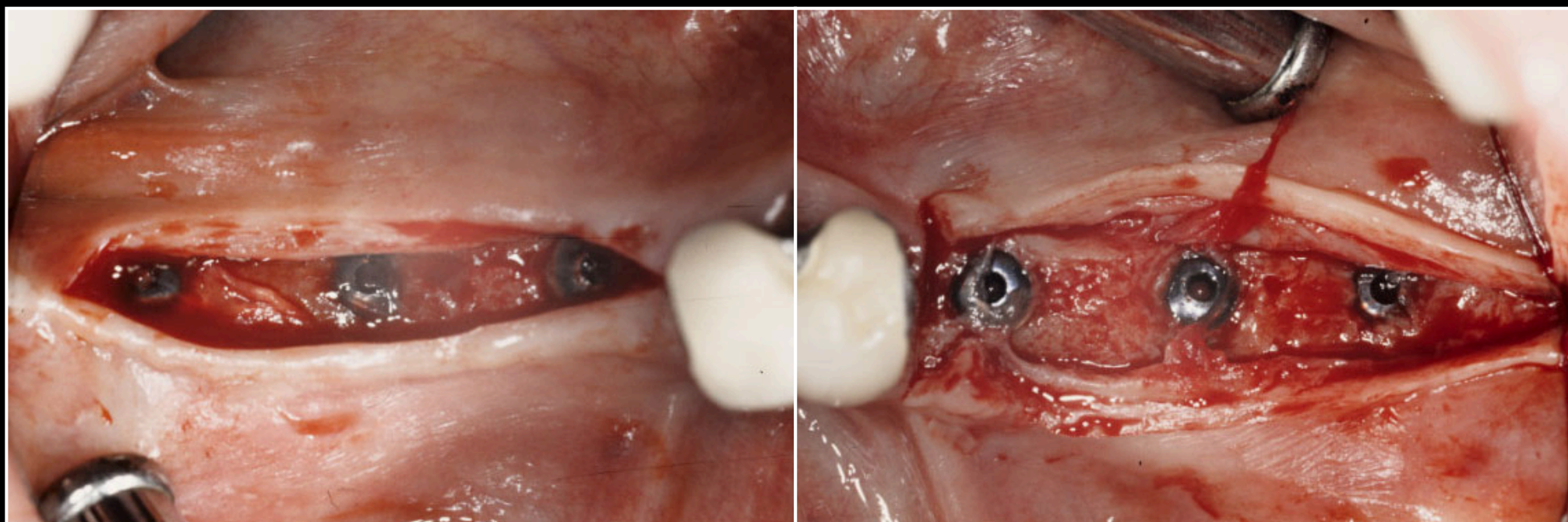


Intraoral radiographs on the check-ups. Due to patient schedule, the second stage surgery was delayed one month than schedule.

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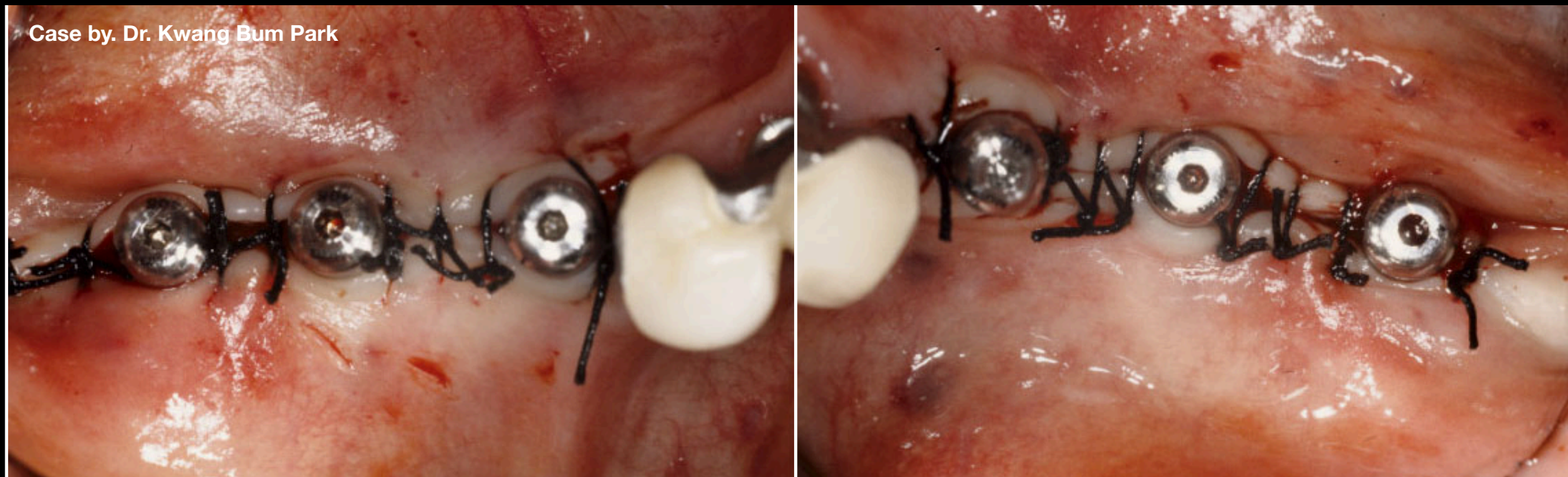


Clinical photos before the second stage surgery. There was only thin band of keratinized tissue on the crest. In most cases like this, I did free gingival graft at the same time with the second stage surgery. However, due to the innovative design of AnyRidge, the chance for FGg became much less than before.



A simple incision was made at the center of remaining keratinized tissue and flaps were made to see the regenerated bone. The bone regeneration was satisfactory as seen in these photos.

Case by. Dr. Kwang Bum Park



After removal of cover screws, small diameter of healing abutments were connected with fixtures. It is very useful to keep the small amount of keratinized tissue. If we use bigger diameter of healing abutments, we might lose all the remaining keratinized tissues.

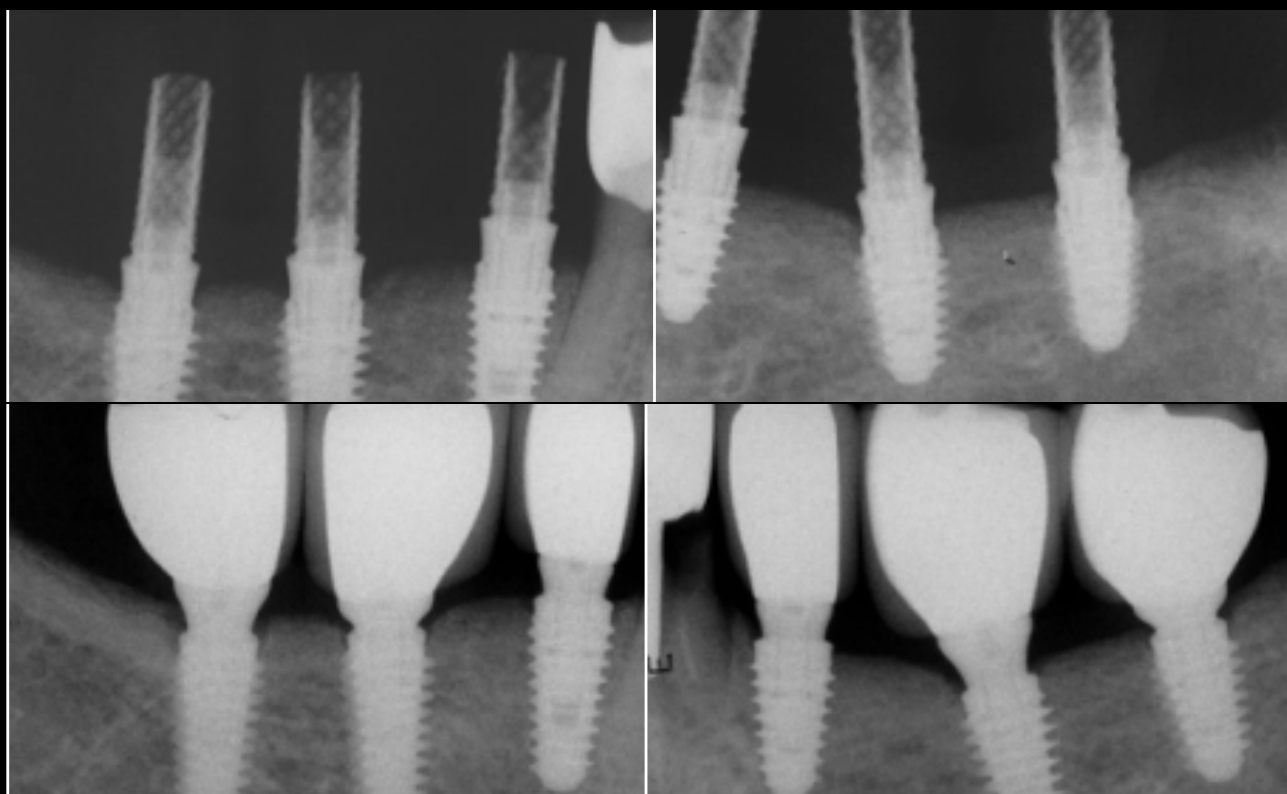


Following provisional restorations for a month, final restorations were placed. Please watch the marginal gingiva with very limited amount of keratinized tissue. I personally had many problems in the case like this.

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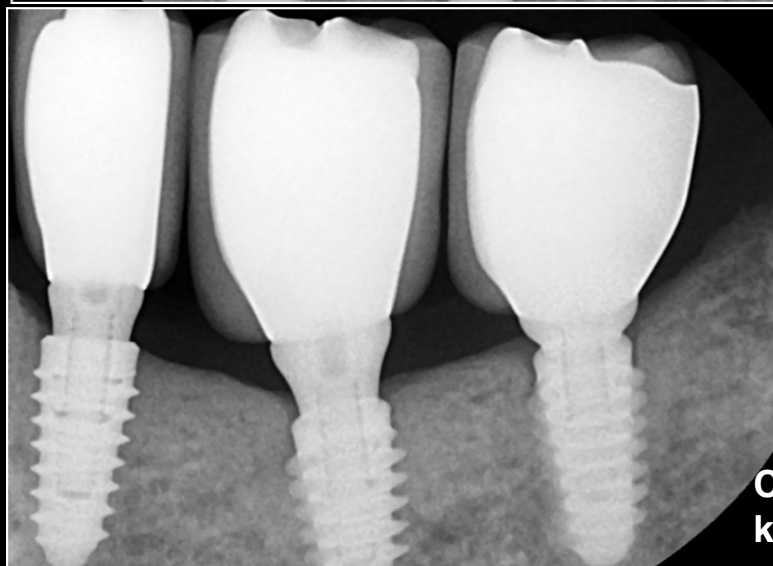
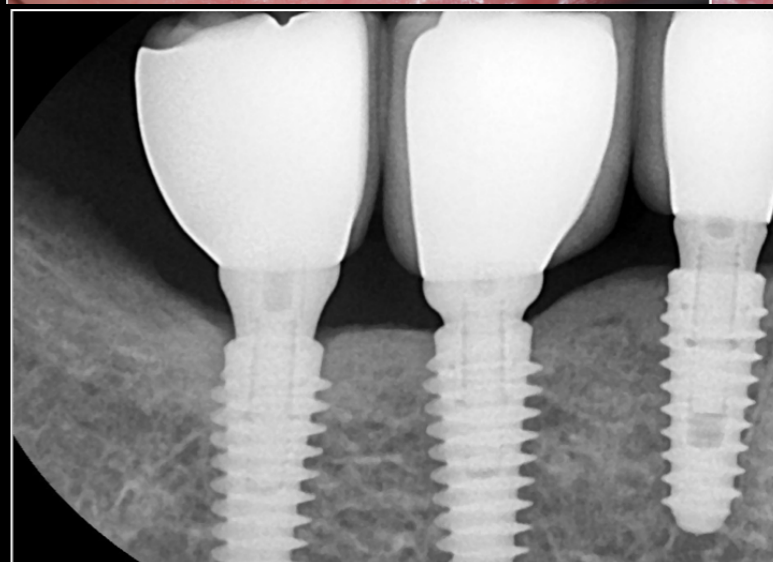


It was surprising to see the recovery of band of keratinized tissue around the implant prosthetics at the first follow up visit. In my experience in implant dentistry for more than 20 years, this kind of gingival recovery was very rare. Why this happened with AnyRidge implant system?



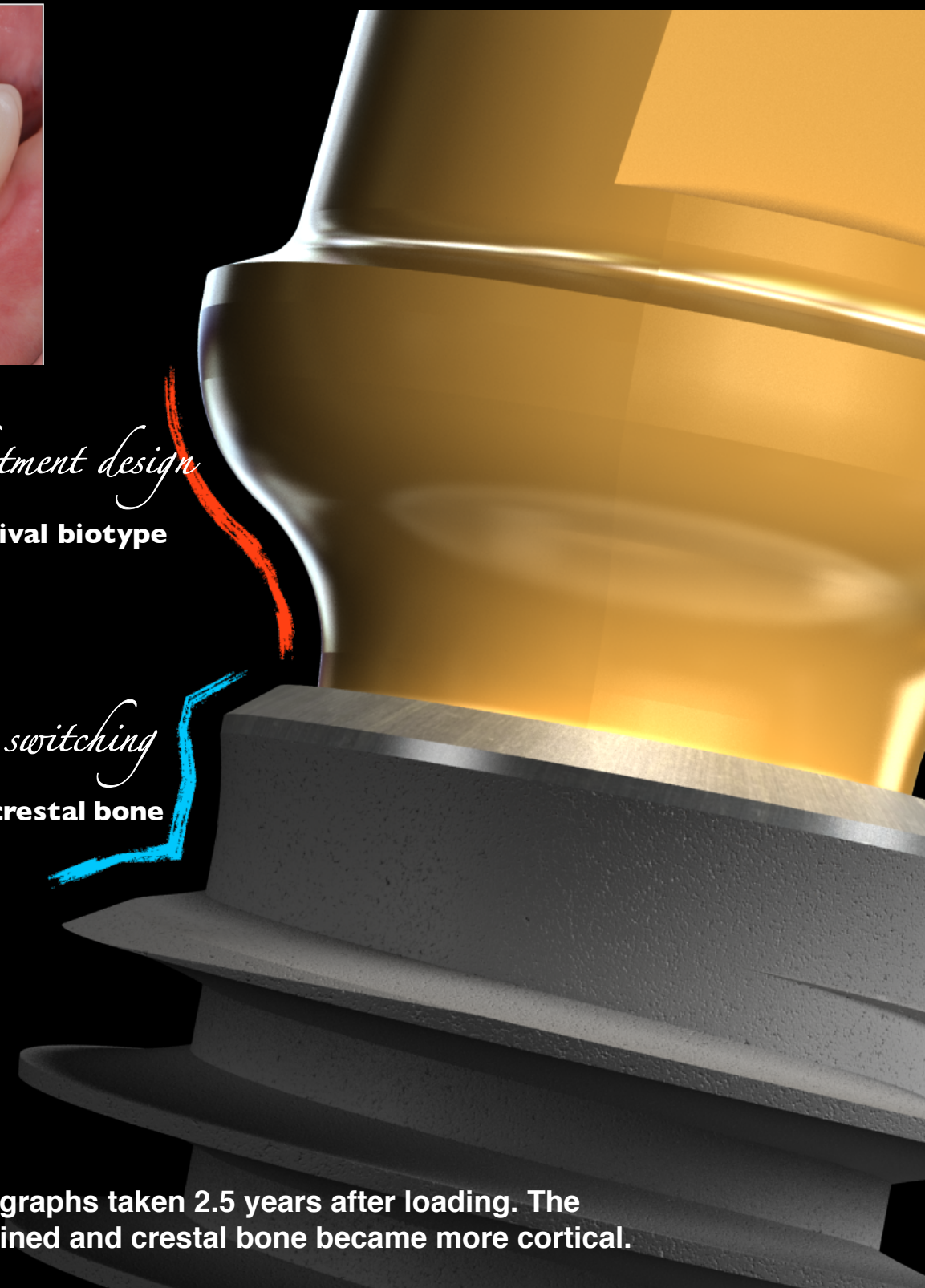
Intraoral radiographs at the day of delivery of provisionals and final restorations. The crestal ridge bone was maintained excellently around all the fixtures.

Case by. Dr. Kwang Bum Park



Anatomic abutment design
for better gingival biotype

Implant switching
for more crestal bone



Clinical photos and intraoral radiographs taken 2.5 years after loading. The keratinized tissue was well maintained and crestal bone became more cortical.

