

Clinical Case Study - May 2019

Bone reconstruction after removal of a broken implant

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- Implant failure can be caused by lack of integration, bone resorption, or prosthetic reasons.
- In the following case a partially integrated overloaded implant was broken in its cervical part. The implant had to be removed and replaced by a new one. After removal of the implant and the granulomatous tissue, a large bone deficiency was evident.

An augmentation procedure was performed by using Bond apatite bone graft cement.

Surgical procedure :

Minimally invasive envelop technique was performed by intrasulcular and mid crestal incision with minimal flap reflection to expose the defect.

After removal of the implant and the granulomatous tissue, Bond apatite cement was ejected and compacted into the site according to the bone cements application protocols. Thus, immediately after ejecting the cement into the site a dry sterile gauze was placed on the material with a firm finger pressure for 3 seconds buccally and occlusally, thereafter for additional few seconds a periosteal elevator was used to apply additional pressure in order to compact the cement properly in place.

With bone cements, soft tissue manipulation is different and opposite than conventional grafting. The flap should be with tension and not tension free; primary closure is not mandatory since maximal closure is acceptable which means that up to 3 mm of graft exposure is completely fine but no more. No membrane or PRF should be used in between the flap and the cement. Therefore no releasing incisions were done and flap closure was done by stretching and suturing in the sequence of MDM- first, the mesial edge was sutured then the distal then middle and then in between them.

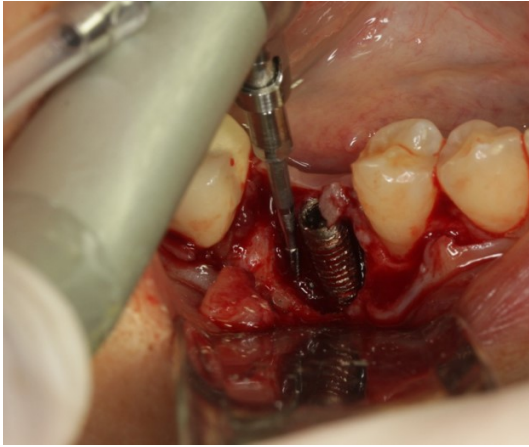
Healing was uneventful and after 3 months a new implant was placed and loaded after additional 3 months of healing with a fixed prosthesis.



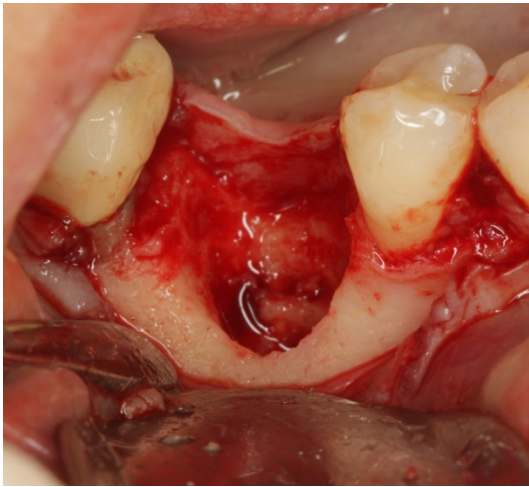
Clinical appearance of the broken
implant



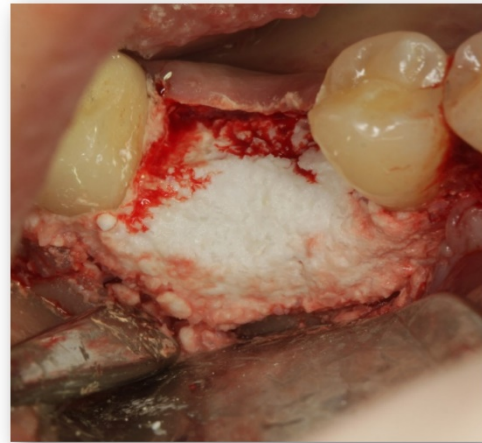
Envelop technique flap reflection



Implant and granulation tissue
removal



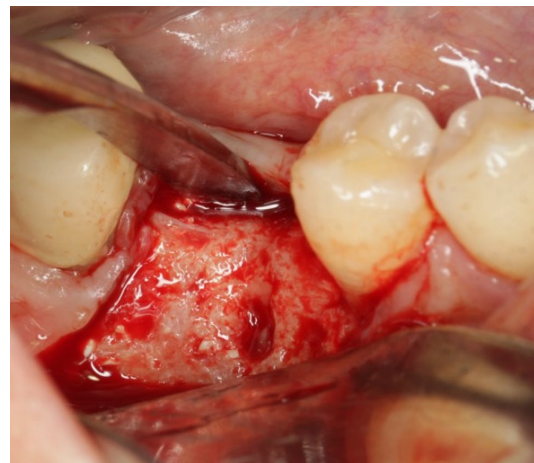
Large bone deficiency after removal of the implant and complete debridement.



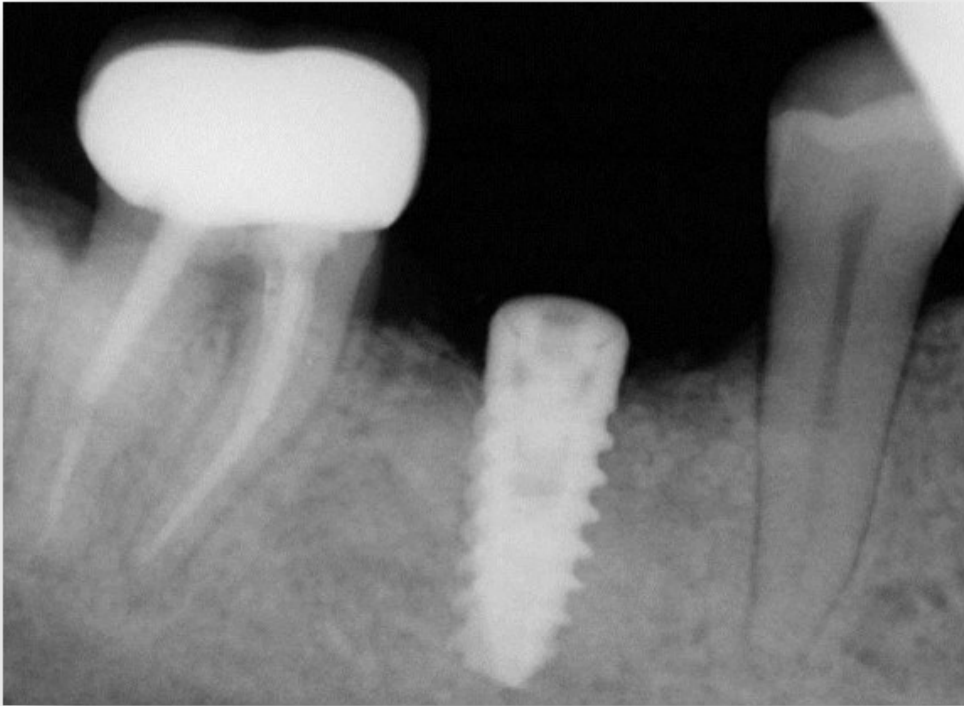
Bond Apatite® cement in place



3 months post op soft tissue appearance



3 months post op hard tissue appearance during reentry



Implant in place 6 months post op before loading



Soft tissue appearance with the
implant abutment



Final crown in place