

# Vertical Bone Augmentation and Soft Tissue Reconstruction in the Posterior Atrophic Mandible

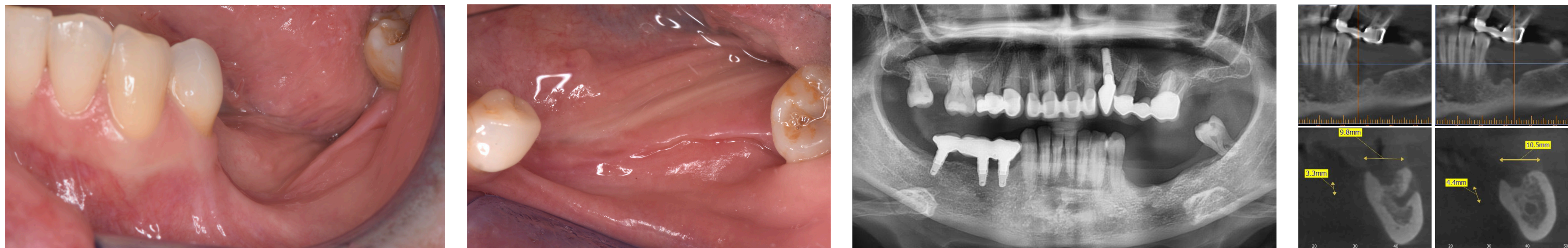
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## BACKGROUND

Severe atrophic posterior mandible together with the presence of inferior alveolar nerve is the most challenging implant surgical treatment.

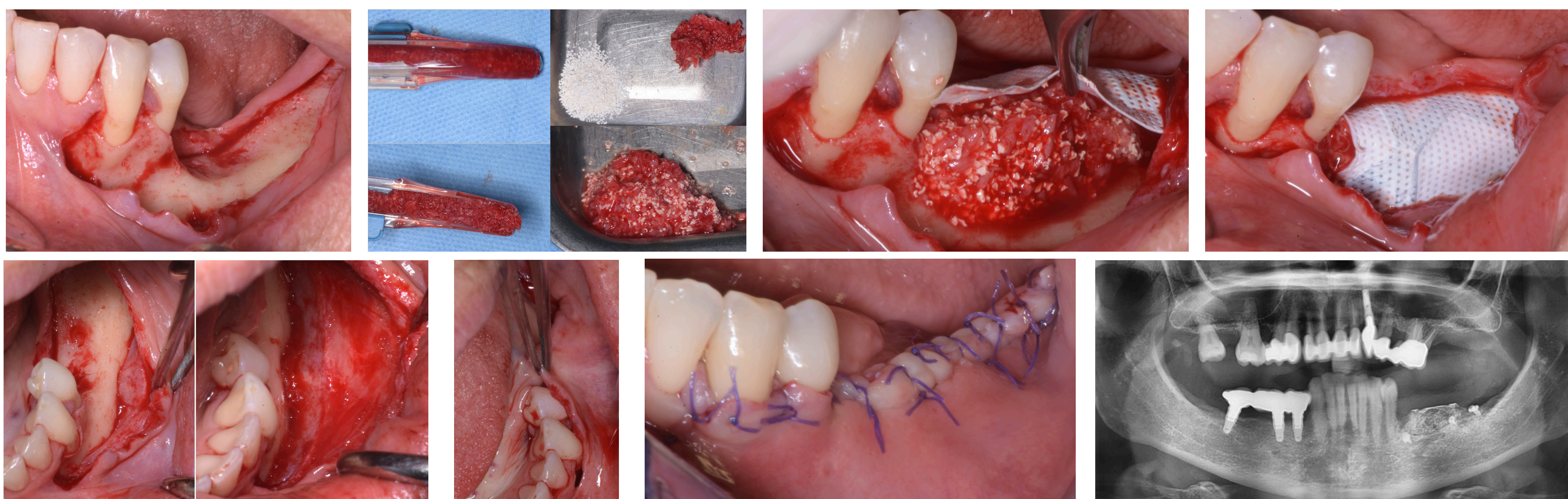
## CASE PRESENTATION

A female 51 years old non-smoker patient was referred for severe vertical ridge atrophy in the left posterior mandible due to peri-implantitis and subsequent implant loss. She asked for fixed rehabilitation for elements 3.5-3.6.



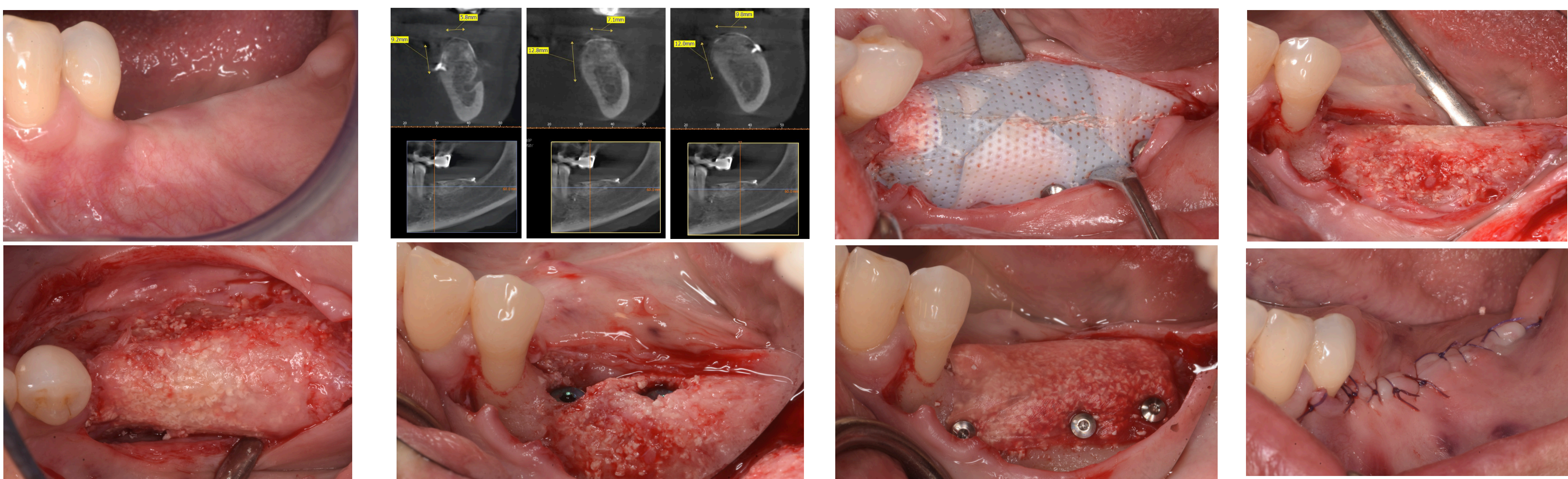
The defect has been treated by means of guided bone regeneration (GBR) with non-resorbable titanium-reinforced membrane and mixture (50:50) of autologous bone chips (collected with a bone scraper from mandibular ramus) and xeno-graft.

Flap passivation, both vestibularly and lingually, was performed in order to obtain primary wound closure with passive adaptation.



After 9 months of uneventful healing, clinical control and CBCT images showed improved three-dimensional crestal bone, considering alveolar ridge height and fornix depth; the membrane was removed and two 4.2x8 mm implants were inserted in #3.5 and #3.6, with prosthetically oriented 2 mm sub-crestal position.

Additional GBR with xeno-graft and resorbable collagene membrane was performed.



After 3 months soft tissue augmentation was performed by means of free gingival graft collected from posterior palatal mucosa to gain keratinized tissue and mucosal thickness around implants before prosthetic loading. A definitive screw-retained prosthesis is secured to the implants 6 months after insertion.



## CONCLUSIONS

According to this results, guided bone regeneration using non-resorbable titanium-reinforced membrane and a mixture of autologous bone chips and xeno-graft is a feasible and effective way to enhance vertically bone in the presence of severe vertical ridge resorption in the posterior mandibular region.

Vestibular and lingual flap passivation and free of tension primary wound closure are the key factors of the treatment and must be performed in the respect of the local anatomy of the mandibular posterior region.

Peri-implant keratinized mucosa and soft-tissue thickness need to be increased in order to allow better hygienic maintenance and marginal bone stability.

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