

# Open sinus lift with the use of allogeneic bone block



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Primary implant stability is a significant factor during an embedment procedure. Complete implant immersion in the bone is also important.

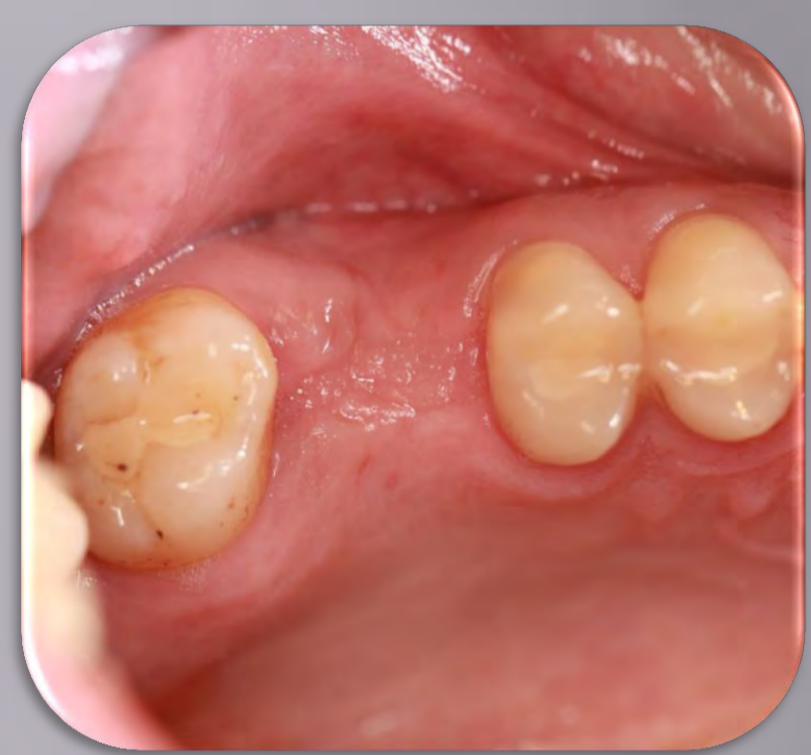
The lateral section of the maxilla is a specific area, where, due to proximity of the maxillary sinus and relatively thin bone tissue, primary stability is considerably more difficult to obtain. Long-lasting edentulousness, pathologies leading to bone atrophy, iatrogenic effect or significant maxillary sinus aeration often decrease the volume of the patient's own bone within this area to the extent, which makes implant embedment impossible.

Severe bone atrophy or flat structure of the alveolar recess of the maxillary sinus often makes the classical method too difficult or impossible to use.

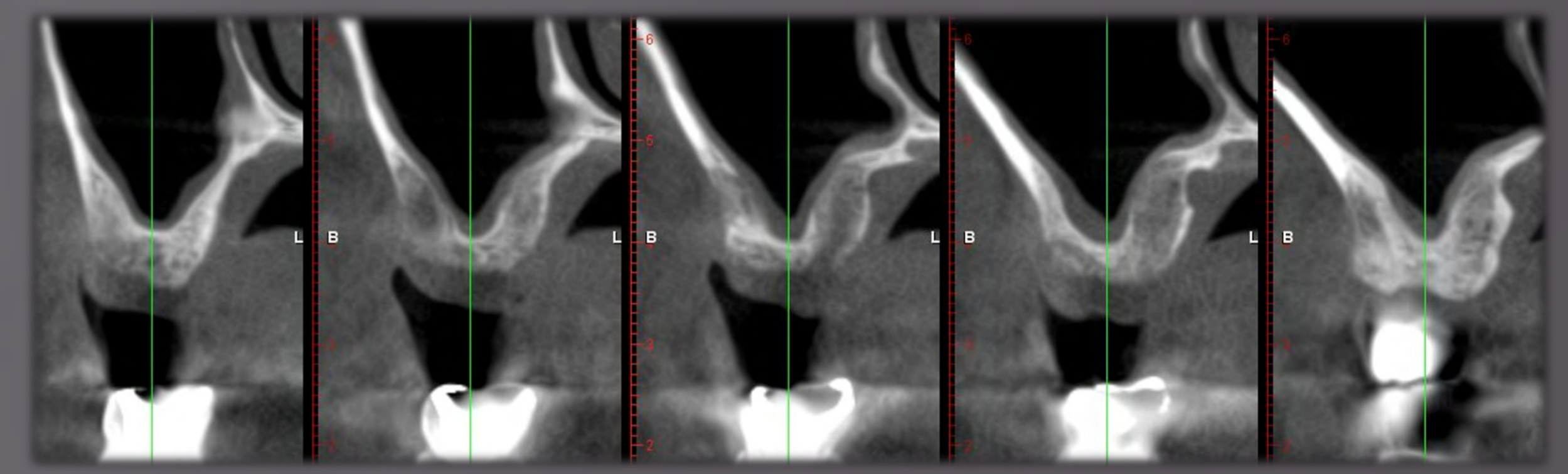
The study objective was to present the author's original method of an open sinus lift performed using an allogeneic bone block with an L-shaped lamina dura.

## Material and methods

The study involved 7 patients, who underwent 11 open sinus lift procedures altogether. The basic inclusion criteria covered no inflammation within the sinus and bone atrophy preventing other augmentation methods. Expansion of the height of the alveolar ridge was obtained with an L-shaped, allogeneic block. In each case the space within the maxillary sinus was cushioned with a PRF membrane, whereas the graft was prepared to reflect the shape of the alveolar recess in the area. The bone block was stabilised with titanium screws. The frontal wall of the sinus became the new maxillary sinus floor and one of the graft's laminae durae completed the frontal wall of the sinus, clinically constituting a homogenous structure with the patient's own bone.



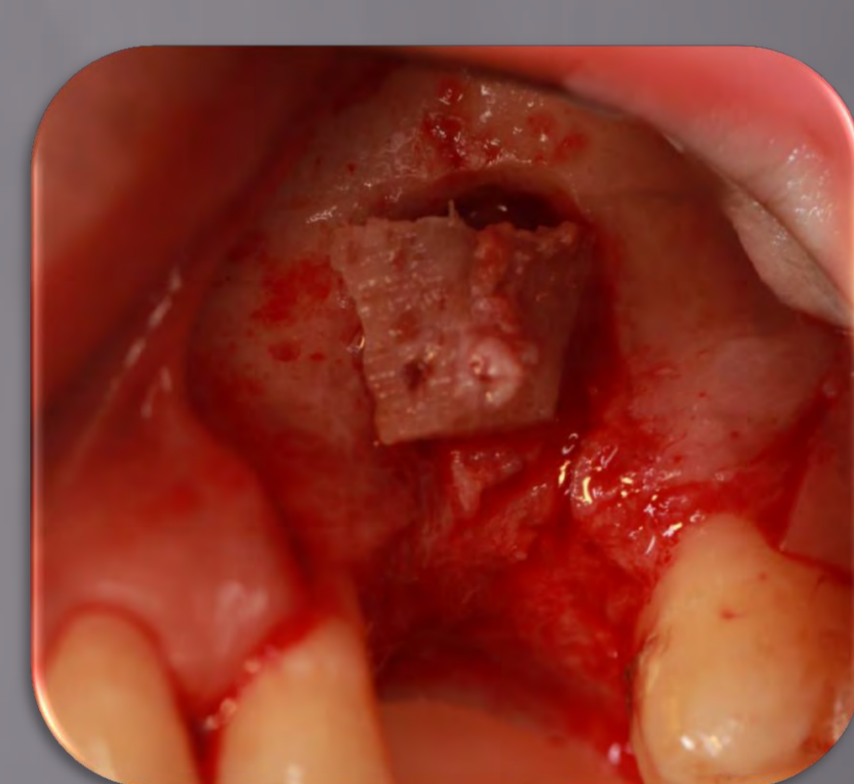
Area of tooth 26 (left-side, maxillary first molar). Status before the open sinus-lift performed with a bone block.



CT before the open sinus-lift performed with a bone block. The height of the alveolar ridge within the planned implant site was 2.24 mm. The maxillary sinus showed no inflammation.



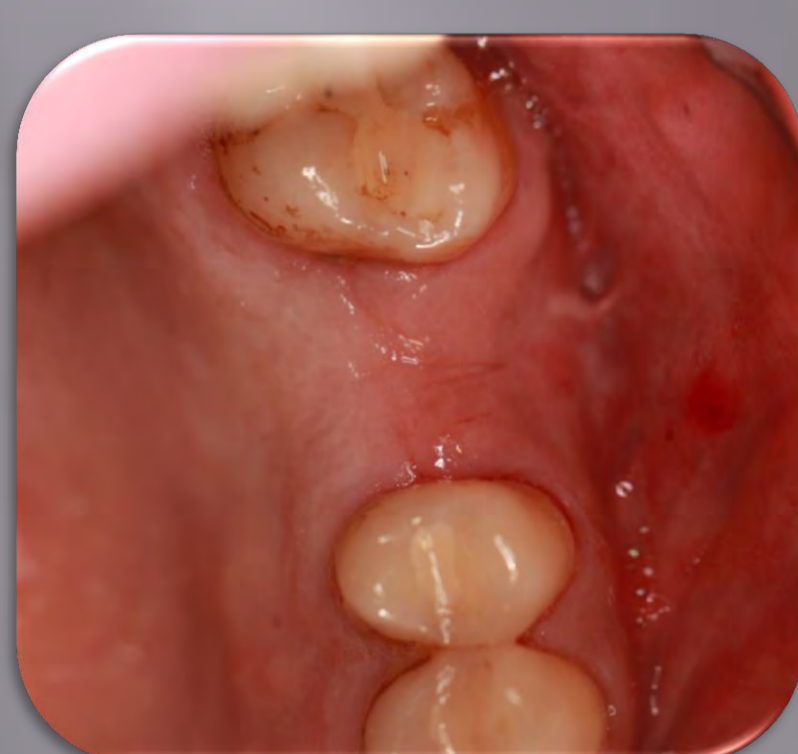
Bone window in the anterior sinus wall.



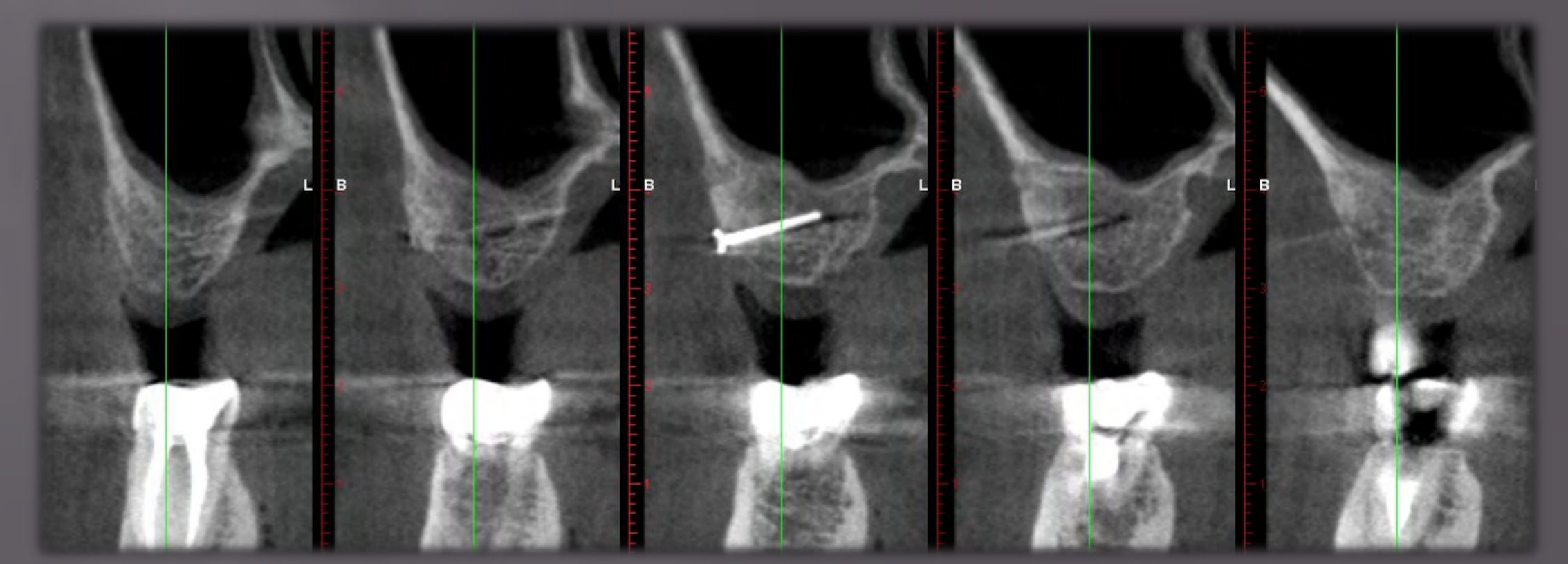
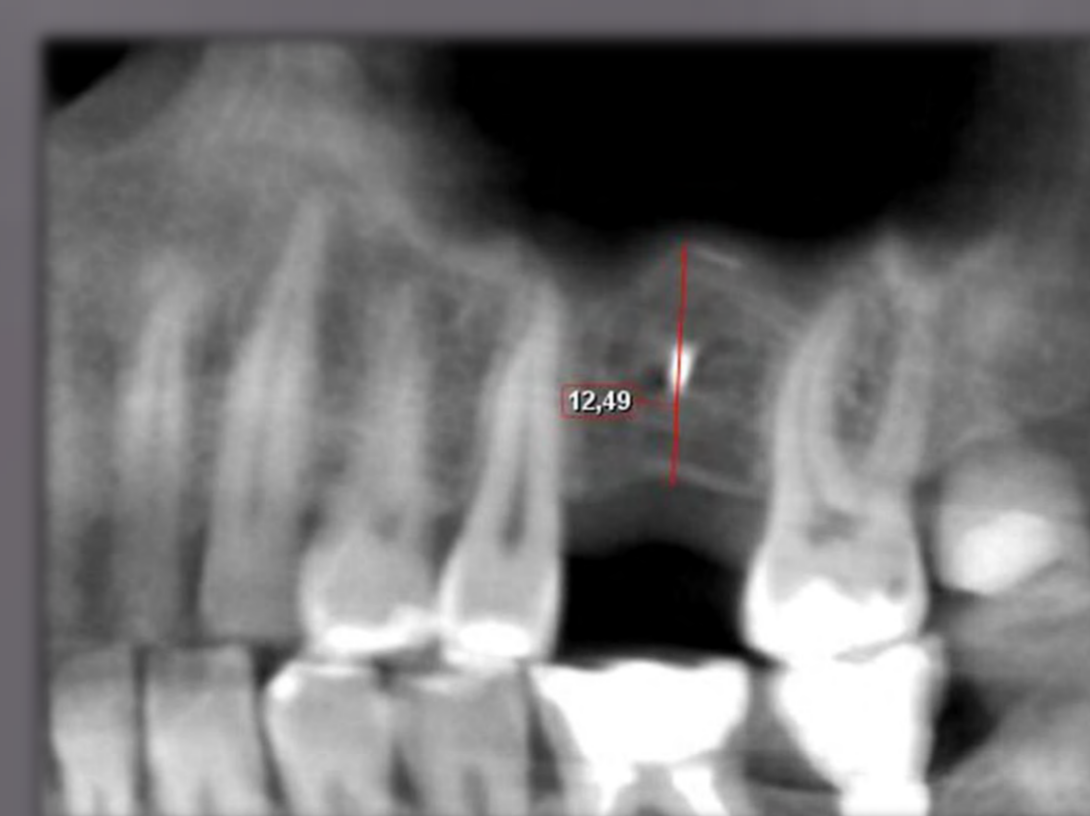
Initial fitting of the allogeneic bone block.



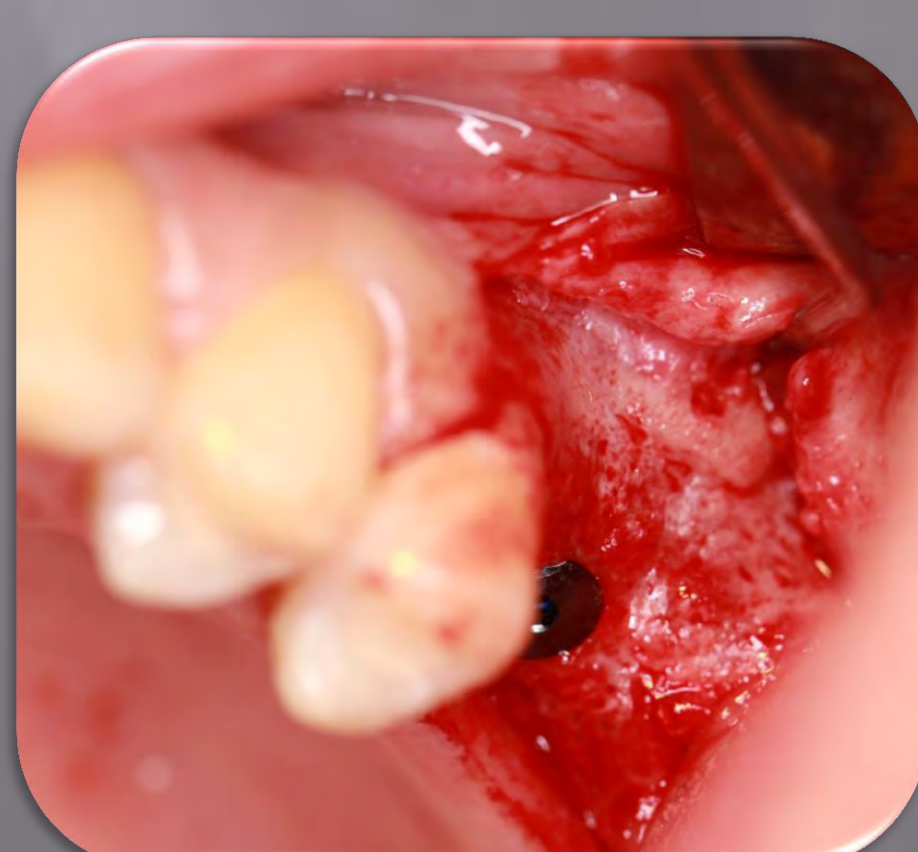
After the bone block was accurately adjusted to fit the alveolar recess of the sinus and the opening in the anterior sinus wall, the graft was stabilised with a titanium screw and sealed with bone shavings. The entire site was covered with PRF membranes.



The status at 6 months after the sinus-lift



CT at 6 months after the sinus lift. The height of the alveolar ridge within the planned implant site was 12.49 mm. The maxillary sinus showed no signs of inflammation.



After a bone bed was formed, the firmness, continuity, and stability of the bone within the implant site were confirmed on probing. Primary stability of the implant was obtained. The grafted material was collected for histopathological testing. Result: MINOR CHIPS OF TRABECULAE

## Results

The use of an allogeneic bone block allowed restoration of optimal height of the alveolar ridge for implant embedment, even with difficult anatomical conditions. Efficacy of the procedure was confirmed by implant stability, CT, and histopathological tests indicating normal bone reorganisation and graft nourishment.

## Literature

1. Chaushu G, Mardinger O, Calderon S, Moses O, Nissan J. The use of cancellous block allograft for sinus floor augmentation with simultaneous implant placement in the posterior atrophic maxilla. J Periodontol 2009 Mar;80(3):422-8.
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