

Another indication for tapered Straumann TE® implants: placement in the posterior resorbed maxilla.

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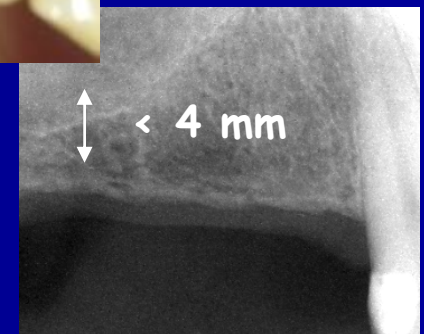
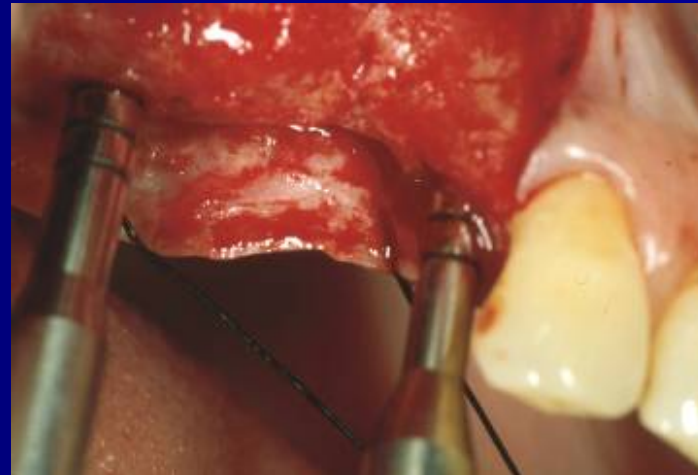
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The study assessed the viability of tapered effect Straumann TE® implants placed in extremely reduced bone height sites (< 4 mm) with an osteotome sinus floor elevation procedure without grafting material.

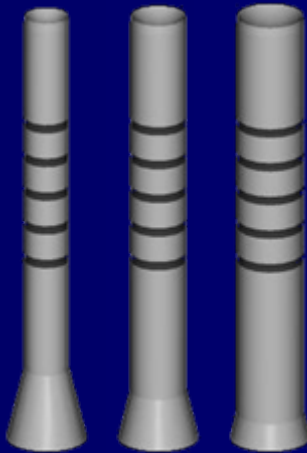
Its aim was to evaluate:

- 1) the relevance of using TE® implants to easily achieve primary stability when initial bone anchorage is less than 4 mm,
- 2) the predictability of a such procedure without bone grafting material,
- 3) the ability to gain bone height without bone grafting.



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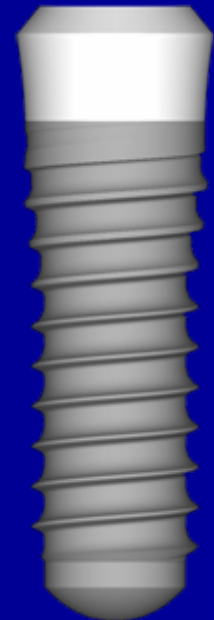


Osteotome sinus floor elevation procedure:

This procedure gives access to the sinus membrane through a crestal approach with sinus osteotomes. This technique is less invasive and less time consuming than lateral sinus lift procedure.

Tapered effect Straumann TE® implant:

This implant exhibits a conical shape with a progressive tapered effect up to the cervical smooth surface. Because of this specific design and reduced pitch (0.8 mm), a reliable primary stability is expected. The proven SLA surface allows a rapid healing.



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Main inclusion criteria: Patients had to require implant treatment in the posterior maxilla. The bone height between the crest and the sinus floor was less than 4 mm on at least one implant side, mesial or distal.

Implants: 12 Straumann TE® implants

Number of patients: 8 consecutive patients

Mean age: 61.2 ± 10.6 years (from 44 to 77 years)

Procedure: Osteotome sinus floor elevation
without grafting material

Implantation sites: 10 molar and 2 premolar sites

Healing period: 3.6 ± 0.5 months



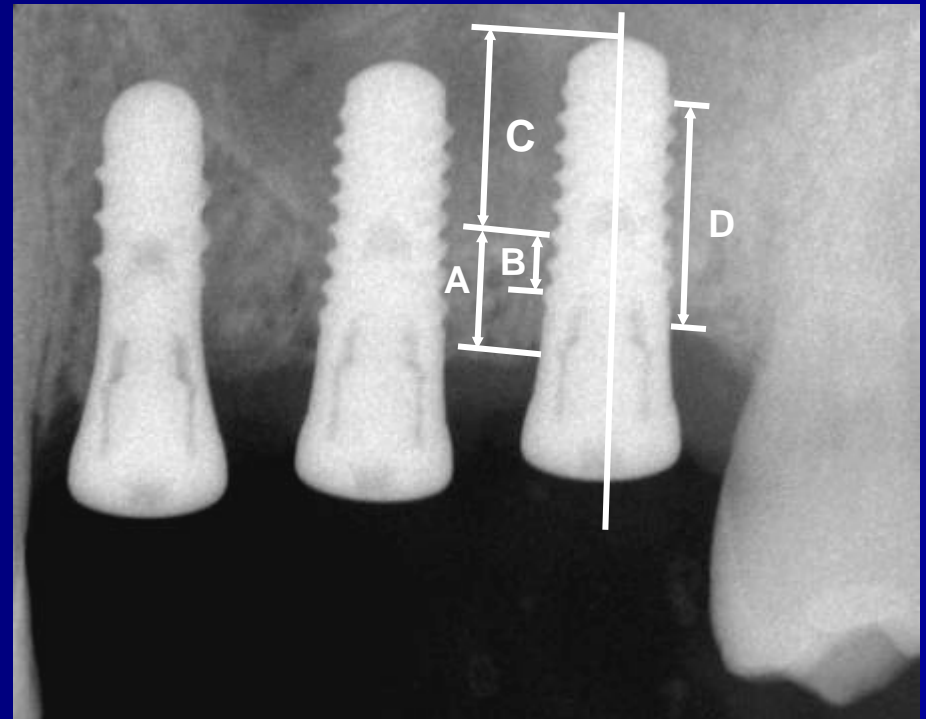
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Radiographic analysis

Parameters measured after placement and at the 1-year control:

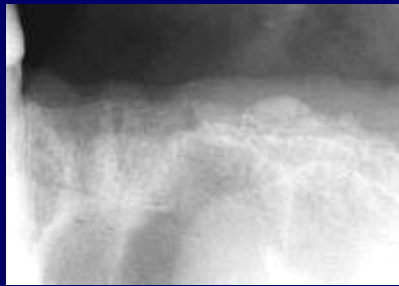
- A:** bone anchorage height under the sinus.
- B:** Endo-sinus bone height. Distance from the most coronal implant thread to the most apical visible implant-bone contact.
- C:** Implant length protruding in the sinus.
- D:** Crestal bone height. Distance between the most apical implant thread and the most coronal bone-implant contact.



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During surgery, the sinus membrane was perforated in two cases (16.7 %).
All implants achieved primary stability. They were loaded after 3.6 ± 0.5 months.
All implants successfully passed the 1-year control. They were clinically stable
and the definitive prostheses were in function.



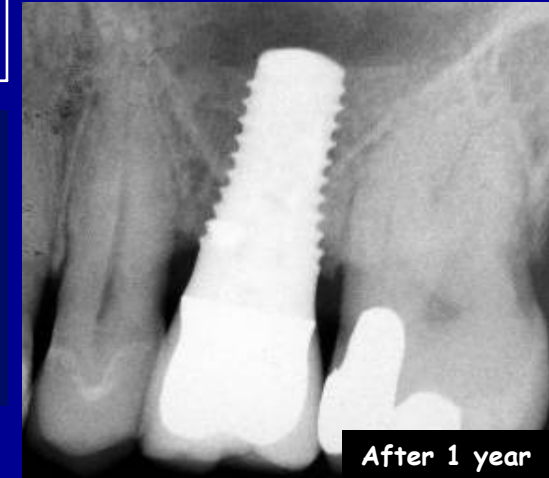
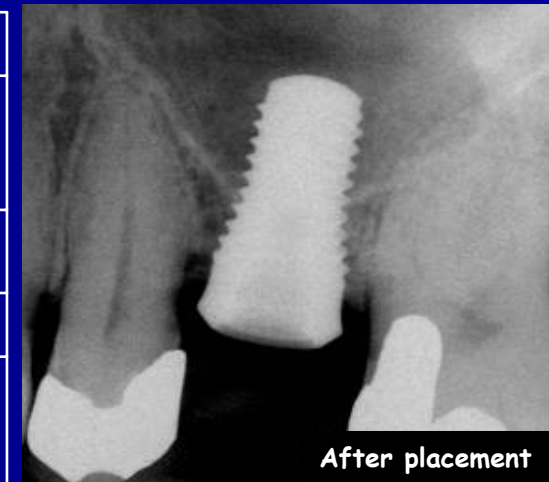
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RESULTS

Immediately after implant placement				
	Initial bone anchorage height	Endo-sinus bone height	Implant protruding length	Crestal bone height
Mean value (mm)	A: 2.7 ± 0.7	B: 2.0 ± 0.8	C: 5.6 ± 1.1	D: 6.9 ± 1.2
At the 1-year control				
	Bone anchorage height	Endo-sinus bone height	Implant protruding length	Crestal bone height
Mean value (mm)	A: 6.0 ± 1.4	B: 5.4 ± 1.6	C: 2.5 ± 1.9	D: 6.7 ± 1.0

After 1 year: Bone anchorage gain: 3.4 ± 1.1 mm
 Endo-sinus bone gain: 3.4 ± 1.3 mm
 Implant protruding length loss: 3.1 ± 1.4 mm
 Crestal bone loss: 0.2 ± 0.6 mm



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CONCLUSION

In the posterior maxilla, primary stability can be easily achieved with the TE® implants even when initial bone anchorage is < 4 mm, because implants are tapered with threads up to the top of the rough surface and present a reduced pitch.

Despite limited bone support and absence of grafting material, all loaded implants were clinically stable and gain endo-sinus bone height. Crestal bone loss is limited.

By its own, elevation of the sinus membrane without addition of bone grafting material can lead to bone formation beyond the original limits of the sinus floor.

