

Background information

Myron Nevins:

«Maxillary anterior teeth with prominent roots have thin buccal bone plates. In such situations there is a higher risk for resorption of these buccal plates in the first months after tooth extraction. At time of implantation complex bone and soft tissue augmentation procedures are then required to achieve acceptable functional and esthetic results. Therefore our goal is to preserve the buccal bone plate and prevent its resorption after extraction.»

2. Aims of the therapy

- > Preservation of the buccal bone plate, so that there is an optimal situation regarding hard and soft tissue during the following implantation procedure.

3. Concept Prof. Myron Nevins

- > Preservation of thin buccal bone plates after extraction of teeth with prominent roots by placing Bio-Oss® granules in the sockets.

Filling in of Bio-Oss® prevents resorption of the buccal bone plate

Fig A CT-Scan after filling Bio-Oss® into the fresh extraction socket. *Fig B* CT-Scan 60 days later. The bone contour has been maintained.

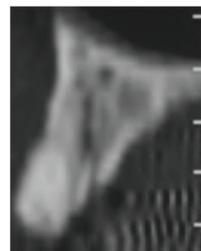


Fig A



Fig B

4. Surgical Procedure / Clinical Aspects

4.1 Clinical problem: Bone resorption

Prominent roots have very thin buccal bone plates which often resorb after extraction



Fig 1 Cadaver model of prominent roots

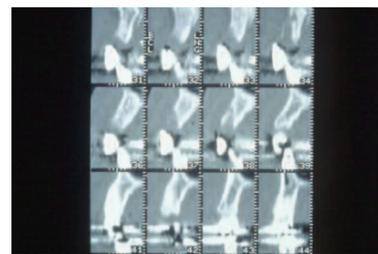


Fig 2 CT-Scan of a patient 28 days after extraction of 4 prominent roots: Thin buccal bone plates resorb and are hardly visible anymore.

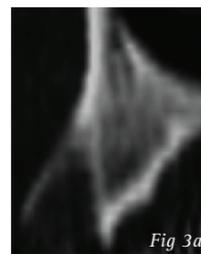


Fig 3a

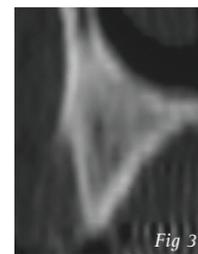
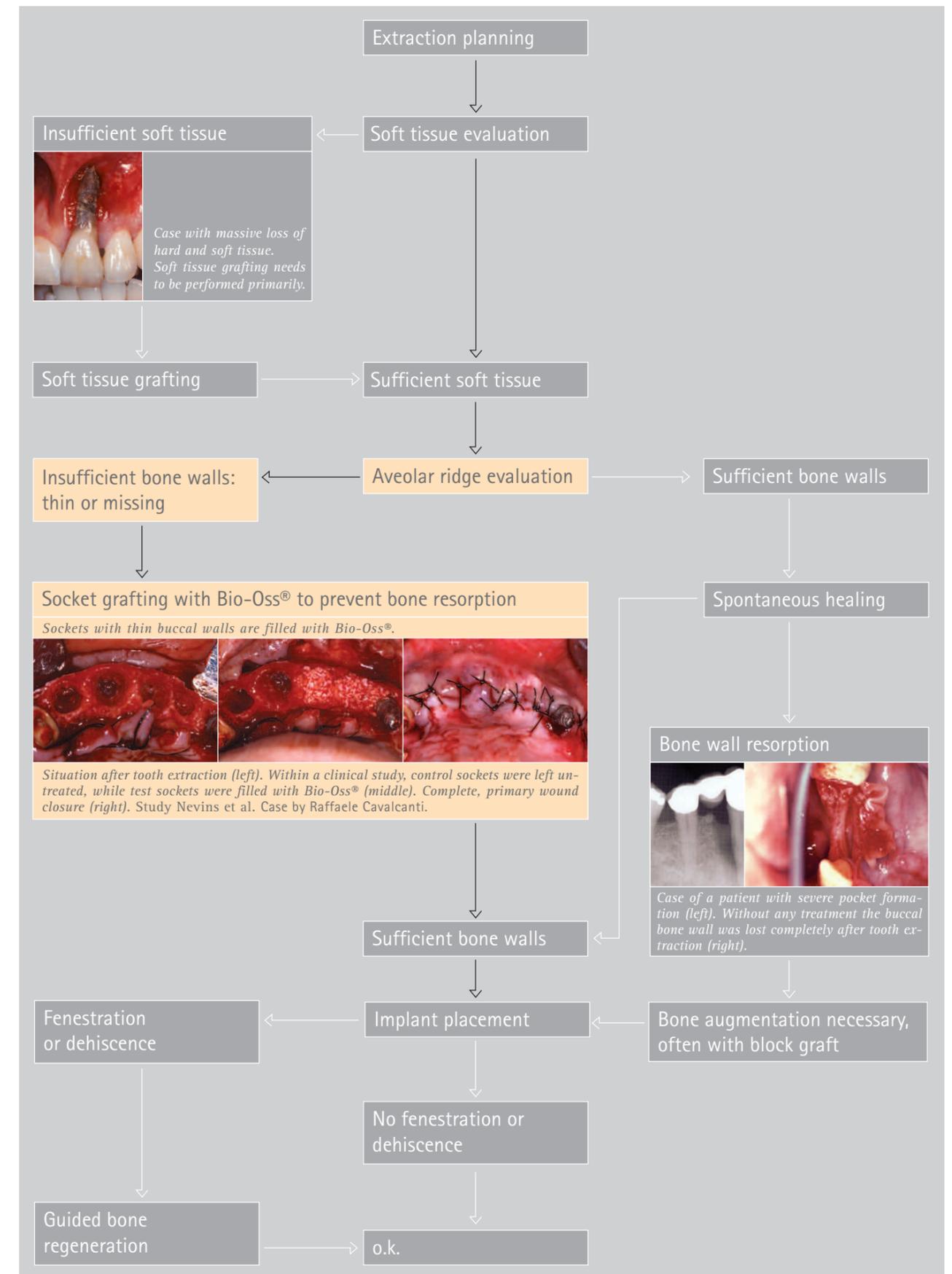


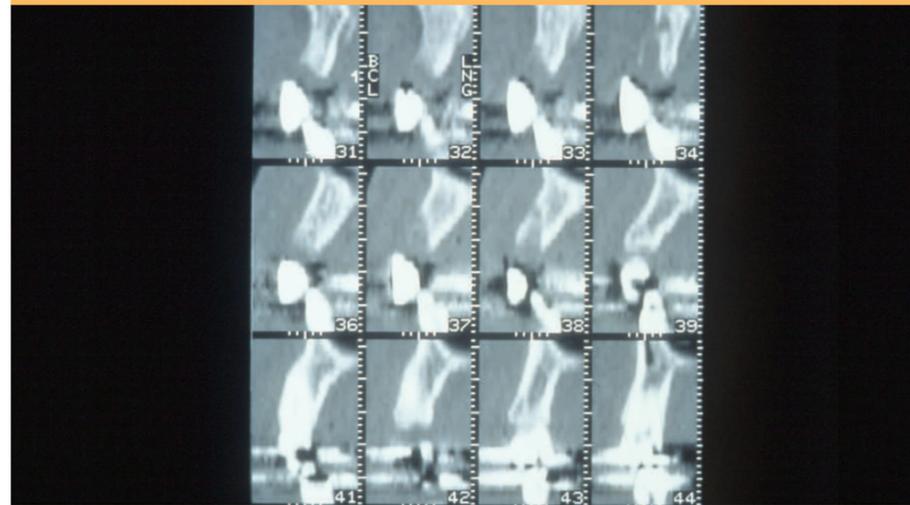
Fig 3b

Fig 3a CT-Scan of a patient after extraction of teeth with prominent roots. Fig 3b CT-Scan of the same patient 60 days later: The buccal plate is lost and this will result in a compromised implant position.

4.2 Clinical Concept



Extraction sockets



Treatment concept of Prof. Dr. Myron Nevins, Harvard School of Dental Medicine, USA

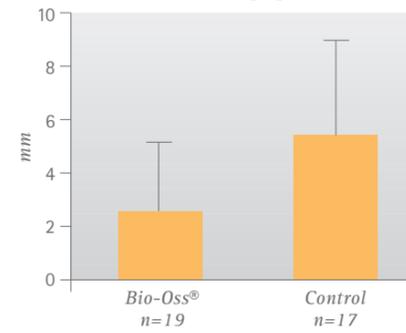


- > Maintenance of the buccal bone plates with Bio-Oss® granules
- > Teeth with thin buccal bone plates
- > In anterior region

1. Indication profile

Region	<input checked="" type="checkbox"/> Esthetic region <input type="checkbox"/> Non esthetic region rem: maxillary or mandibular anterior teeth with prominent roots, i.e. thin buccal bone plates
Bony situation around socket	<input type="checkbox"/> No bone defect <input type="checkbox"/> Bone defect <input checked="" type="checkbox"/> Thin buccal bone plate rem: buccal bone plates thin, but present
Soft tissue situation	<input checked="" type="checkbox"/> Primary wound closure possible without problems <input type="checkbox"/> Primary wound closure problematically
Bone augmentation indicated	<input checked="" type="checkbox"/> Yes, immediately <input type="checkbox"/> No
Implantation planned	<input checked="" type="checkbox"/> Yes, time point of implantation depends on individual situation rem: see decision tree page 3 <input type="checkbox"/> No

Loss of Crest height 30 to 60 days after extraction (Nevins, in prep.)



Status of clinical testing

This concept has been evaluated in a clinical multicenter study. Publication in preparation

With the treatment of Bio-Oss® significantly less crest height is lost than without treatment.



Limitations, open questions

Without regenerative treatment the extraction of anterior teeth with prominent roots frequently results in the resorption of the thin buccal plates. Although occasionally patients demonstrate no resorption without grafting most benefit significantly from filling the extraction socket with Bio-Oss®.

Clinical situation in a patient after extraction of 2 prominent roots: One buccal bone plate is partially intact, the other is lost.