

The Tissue Master Concept®

Summary

The extraction of a tooth is followed by large resorptions in the alveolar region. By means of augmentive strategies it is possible to regenerate these tissue defects or to prevent these in a prospective way. These strategies, however, are linked to considerable disadvantages. The Tissue Master Concept pursues a completely new approach. It is based on structure-biological and functional interrelations between the alveolar and paradontal tissue structures. The key hereby is the periodontal ligament and in particular the supra-alveolar fibre system. After the extraction of a tooth the flow of information in the dental-alveolar system can be maintained in the replantation of a root segment.

As a consequence the alveolar bone and the soft tissue are preserved. If the replanted root segments are extruded, a `follow-up` of adjacent alveolar tissue structure is induced. Root segments manage the same alveolar regeneration as natural teeth within short time. This fact has many advantages: The gingival contour line can perfectly be levelled and the implant can be inserted earlier. The regenerated bone quality is characteristic of the local area.

The results are long-term stable and very much predictable. The treatment time ranges up to a maximum of 3-4 months. The biological-structural basis for an implant-prosthetic treatment meets highest requirements. The restorative results are in any respect at least equal to the results of the surgical-augmentive strategies. Besides the implant-prosthetic aspects also periodontal-therapeutical options can be of considerable interest. Horizontal replantation of root segments for example proved an astonishing regenerative potential within the therapy scope of bifurcation defects.

Basically, the structural, functional and molecular-biological relations need to further examined.

The Process Engineering – Fast Extrusion of Whole Teeth

In the extrusion of teeth worth preserving and of hopeless teeth high forces are applied. The force ranges between 5 – 20 N!

Results:

- Patients do not suffer any pain.
- The time period for extrusions is 1-14 days.
- The bodily movement is between 1 and 15 mm.
- The time for retention is - depending on the extent of the movement - 4- 10 weeks.
- The `follow-up` of the adjacent alveolar tissue structures ranges between 80 and 98 % of the extrusion movement.
- The alveolar bone follows within the biological width (≈ 2 mm).
- By means of the supracrestal fibrotomy the follow-up can be controlled. No fibrectomy is needed to have the adjacent alveolar and periodontal tissue follow up (Follow- up). In case of a fibrectomy the tooth is moved out of the alveolus by extrusion. In both cases, the results are long-term stable.

Under clinical aspects this allows the preservation of a deeply fractured or destroyed tooth. (see clinical case 1). In case of an extrusion of so-called hopeless teeth, the original alveolar volume can almost completely be regenerated. The results are long-term stable (see clinical case 2).

The Process Engineering – Replantation and Extrusion of Root Segments

After the extraction of the tooth a form congruent root segment of approx. 2-3 mm width and covered circularly with periodontal ligament is replanted in the alveolus. After a healing period of 10-12 weeks the original alveolus is long-term stable filled with bones. The alveolar volume and the grown gingiva are almost completely preserved. The results are long-term stable (see clinical cases 3 and 4). After a healing period of 10 days, a form congruent segment is tightly attached to the adjacent alveolar tissue so that it can be moved into coronal direction/extruded. Due to the following movement of the alveolar tissue this leads to a vertical gain of tissue and to a very esthetic gingival contour line.

This gingival contour compensation and thus an esthetically perfect result are long-term stable, because the bone follows up in the distance of the biological width. See clinical cases 5 and 6. The replantation of root segments is also of great interest when treating periodontal defects. The results can be referred to in clinical case 7.