

REGENERATIVE PROCEDURES AND ORTHODONTICS IN THE TREATMENT OF SEVERE INTRABONY DEFECTS

A RETROSPECTIVE CLINICAL COHORT STUDY

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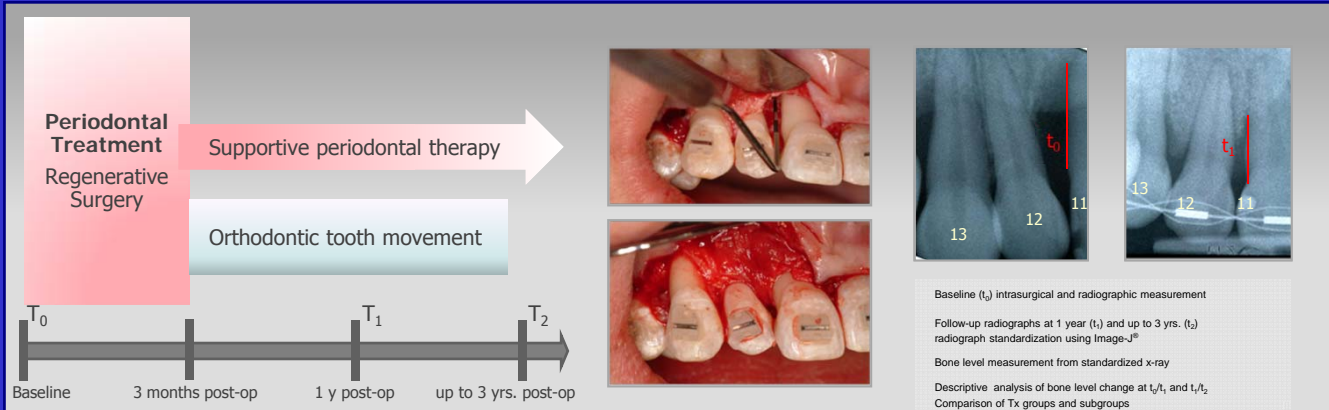
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Objectives:

The aim of this study was to evaluate the outcomes of regenerative treatment of intrabony defects in conjunction with orthodontic tooth movements in patients with severe periodontitis.

Methods:

A total of 526 periodontally severely compromised teeth in 48 patients (age 29–66 years) were treated using bovine derived bone mineral with/without collagen membrane and/or enamel matrix derivative. Orthodontic tooth movements were initiated three months after surgery. Bone levels were measured at time of surgery (T₀). Periodontal probing depths and digitized and calibrated periapical radiographs were assessed at T₀, at 12 months (T₁) and up to 36 months (T₂). Changes in radiographic bone levels were the primary outcome.



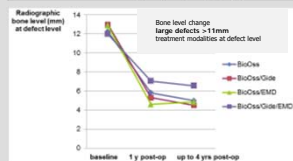
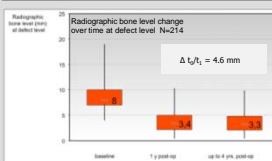
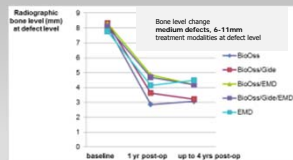
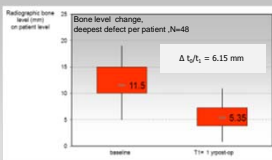
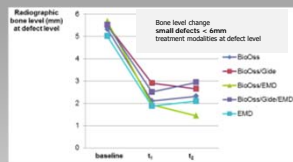
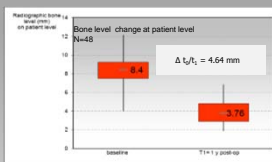
Results:

Defect characteristics: N = 526

- 1-wall defects: 201 (38,2%)
- 2-wall defects: 325 (61,8%)
- Smokers' defects: 34 (13%)
- Males: 49%
- Mean bone level (to CEJ) at baseline 8.52mm

Patient characteristics: N = 48

- men N=19 (39,6%) / women N=29 (60,4%)
- Mean age 45.2 (29-66yrs.)
- smokers N=6 (12,5%)
- average N of treated defects per patient: 10,5
- Patient inclusion criteria:
 - Complete set of x-rays and data available
 - Able to perform adequate OH
 - Compliance with SPT regimen
 - Smokers and systemic diseases not excluded
 - Informed consent



No differences in treatment modalities

Treatment variations

- Bovine derived mineral
- Bovine derived mineral and collagen membrane
- Bovine derived mineral and enamel matrix derivative (EMD)
- Bovine derived mineral, collagen membrane, EMD
- EMD

Substantial radiographic bone gain

From baseline to 12 months the mean PPD reduction was 2.75 mm (from 5.87 mm to 3.12 mm). Radiographic analysis showed a mean mineralized tissue gain of 4.64 mm at 12 months (from 8.4 mm to 3.76 mm) and further clinical improvements up to 3 years. Only one tooth was lost during the observation period. No differences in treatment modalities of regenerative therapy were shown.

Conclusions:

The results of this retrospective clinical cohort study in patients in need of orthodontic therapy as a consequence of advanced periodontal destruction indicate favorable clinical and radiographic outcomes after periodontal regenerative therapy followed by orthodontic tooth movements. Regenerative periodontal treatment of intrabony defects in conjunction with orthodontic tooth movement resulted in substantial radiographic bone gain up to 3 years.

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