

Friday, March 3, 2023, 10h50

Session title: **Periodontal regeneration and orthodontics**



Moderator: **Prof. Wim Teughels**

Abstract

Stage IV periodontitis is characterized clinically by significant attachment loss, vertical bone loss, and pathological tooth migration. The treatment of periodontal patients with pathological tooth migration requires an interdisciplinary approach. The corrective phase, with the goal of restoring the damage caused by periodontitis, may include the regeneration of vertical bone defects and orthodontic tooth movement. This session will center on the timing, justification, and biological consequences of the possibility for tooth movement into infrabony defects and of regenerative surgery. Soft tissue management and the advantages of using augmentation techniques simultaneously will also be discussed. At the end, a clinical case will be presented and discussed that demonstrates the efficacy of a multidisciplinary approach to the treatment of severe periodontitis with pathological tooth migration, which combines a regenerative strategy with early orthodontic intervention.



Karin Jepsen (her CV can be found under her profile in the app): *Periodontal regeneration and orthodontics - is there a best practice timing?*

Pathological tooth migration, a side-effect of loss of periodontal attachment, is a common complication of advanced periodontal disease and a reason why patients seek orthodontic treatment. Before any orthodontic movement, control of the periodontal infection needs to be achieved followed by a corrective phase aiming to reconstruct the damage caused by the periodontal disease, including regeneration of vertical bone defects. The presence of severe periodontal attachment loss, vertical bone loss, and pathological tooth migration (PTM) is a key clinical feature of stage IV periodontitis. An inter-disciplinary approach is required to control the periodontal infection, reconstruct the defects, and realign the migrated teeth.

Information on the treatment of patients with stage IV periodontitis with intra-bony defects and PTM in need of orthodontic therapy (OT) is limited and the optimal interval between regenerative periodontal surgery and OT has been a matter of ongoing debate for a long time.

In a multicenter randomized trial, we compared the outcomes after early (4 weeks) or late (6 months) initiation of OT following regenerative surgery of intra-bony defects (IDs). After 12 months, significant periodontal improvements of similar magnitude were observed following early and late initiation of OT.

Teeth severely compromised by IDs and PTM can be treated successfully by regenerative surgery followed by early orthodontic therapy with the advantage of an overall reduced treatment time. These findings were adopted by the EFP S3-level Clinical Practice Guideline for the treatment of stage IV periodontitis patients.



Daniele Cardaropoli, DDS and **Lorena Gavoglio, DDS, MSc** (CVs to be found in their profiles in the app): *Orthodontic movement into periodontal bony defects: clinical evidence*

Advanced periodontitis may be characterized by the formation of infrabony defects adjacent to pathologically migrated teeth. In such cases, the ortho-perio interdisciplinary approach is an option. Literature supports tooth movement into infrabony defects aiming to defect closure, bone fill and possibly new attachment formation. Augmentation procedures also can be added. During the lecture, implications for orthodontic movement into infrabony defects will be addressed.

The treatment of periodontal patients with tooth migration may require a combined perio-ortho therapy. The possibility of moving teeth into infrabony defects will be discussed, focusing on the rationale, timing and biological implications. Management of soft tissues and the benefit added from the concomitant use of augmentation procedures will also be addressed. During the presentation, the indications and the proper treatment sequence in combined perio-ortho treatment will be assessed, the basic science and clinical evidence regarding intrusive tooth movement into infrabony defects will be discussed and participants will learn how to clinically manage periodontal tissues before, during and after orthodontic therapy.



Ignacio Pedrinaci DDS, MSc (his CV can be found under his profile in the app), presents a clinical case which supports that inter-disciplinary treatment of severe periodontitis combining a regenerative

approach and early (4 weeks) orthodontic treatment can obtain successful results and reduce the overall treatment time

Key points:

- Regenerative surgery followed by early orthodontic therapy can be an effective treatment for teeth severely affected by intra-bony defects and pathological tooth migration.
- Tooth movement into infra bony defects can be accomplished.
- It is beneficial to use soft-tissue augmentation techniques.

Aims:

- To familiarize the audience with regenerative and orthodontic approaches in the management of Stage IV periodontitis with infra bony defects and pathological tooth movement.