PAOO (Periodontally accelerated Osteogenic Orthodontics)
Corticotomy-assisted decompensation for augmentation of the mandibular anterior ridge

Seong-Hun Kim, Insoo Kim, Do-Min Jeong, Kyu-Rhim Chung, and Homayoun Zadeh
Seoul, Uijeongbu, Suwon, Korea, and Los Angeles, Calif

AJODO 2011
Introduction

Rapid Orthodontics with Alveolar Reshaping: Two Case Reports of Decrowding

William M. Wilcko, DMD, MS*/M. Thomas Wilcko, DMD*/J. E. Bouquot, DDS, MSD**/Donald J. Ferguson, DMD, MSD***

AOO (accelerated Osteogenic Orthodontics)

- selective alveolar decortication
- alveolar augmentation
- orthodontic treatment

**Advantages:**
- Decrease in treatment time
- No significant root resorption
Different surgery methods before (osteotomy bony blocks...)

ORIGINAL CLINICAL ARTICLE

Rapid canine retraction through distraction of the periodontal ligament

Eric JW Liou, DDS, MS, and C. Shing Huang, DDS, PhD
Taipei, Taiwan

AJODO, 1998
AOO

- Corticotomy-facilitated orthodontics
- RAP regional acceleratory phenomenon— (Frost, 1989)
- Demineralization-remineralization
- Soft tissue matrix
1st paper to mention RAP in dentistry

Regional Accelerated Phenomenon in the Mandible Following Mucoperiosteal Flap Surgery

Avinoam Yaffe, * Nachum Fine, † and Itzhak Binderman ‡

- J Periodontol 1994
- 可惜不是 split mouth design

Figure 3. High resolution microradiographs of mandible cross sections. Mesio-distal direction (C = control; E = experimental). Three weeks following surgery.
Fig 1a  Pretreatment anterior view of patient 1 (24-year-old man).

Fig 1b  Posttreatment anterior view of patient 1 on the day that the debracketing was completed.

Fig 1c  Posttreatment anterior view of patient 1, 15 months and 2 weeks after debracketing.

6 months 2 weeks

Fig 1d  Pretreatment occlusal view of the maxillary teeth in patient 1.

Fig 1e  Posttreatment occlusal view of maxillary teeth in patient 1 on the day the debracketing was completed.

7 mm increase of intercanine width
Accelerating tooth movement: The case for corticotomy-induced orthodontics

William Wilcko and M. Thomas Wilcko
Erie, Pa

Accelerating tooth movement: The case against corticotomy-induced orthodontics

David P. Mathews and Vincent G. Kokich
Seattle, Wash

2013
Accelerated Osteogenic Orthodontics Technique: A 1-Stage Surgically Facilitated Rapid Orthodontic Technique With Alveolar Augmentation

M. Thomas Wilcko, DMD,* William M. Wilcko, DMD, MS,† Jeffrey J. Pulver, DDS,‡ Nabil F. Bissada, DDS, MSD,§ and Jerry E. Bouquot, DDS, MSD∥


**FIGURE 4.** Patient 1. A, Pretreatment surface computed tomographic scan, right oblique view of lower arch. B, Pretreatment surface computed tomographic scan, lingual view of lower arch.

**FIGURE 5.** A, Posttreatment surface computed tomographic scan, right oblique view of lower arch. B, A 2.5 years posttreatment surface computed tomographic scan, lingual view of lower arch.

Increase bone thickness—more stability
Increase alveolar volume
- Bone biopsy
- **Hajji 2000 quality check, treatment time:** 6.1 vs 18.7 vs 26.6 months
- No gingival recession
An Evidence-Based Analysis of Periodontally Accelerated Orthodontic and Osteogenic Techniques: A Synthesis of Scientific Perspectives

M. Thomas Wilcko, William M. Wilcko, and Nabil F. Bissada

(Semin Orthod 2008;14:305-316.)

3 months 2 weeks
1. Not demineralization but decrease of hyalinization
2. Bone dehiscence may disappear without decortication.
3. Not real bone regeneration but fibro-osseous material
4. How about treatment quality?
Accelerating tooth movement: The case against corticotomy-induced orthodontics

David P. Matthews and Vincent G. Kokich
Seattle, Wash

Modeling of Trabecular Bone and Lamina Dura Following Selective Alveolar Decortication in Rats

Jean-David Sebaoun, Akipgan Kantarci, John W. Turner, Roberto S. Carvalho, Thomas E. Van Dyke, and Donald J. Ferguson

[Images of histological sections showing trabecular bone and lamina dura]
Tissue response during Piezocision-assisted tooth movement: a histological study in rats


Corticotomy-/Osteotomy-assisted Tooth Movement microCTs Differ

Lee et al.  
*J Dent Res* 87(9) 2008
Comparison of corticotomy-facilitated vs standard tooth-movement techniques in dogs with miniscrews as anchor units

Yehya Ahmed Mostafa, Mona Mohamed Salah Fayed, Samah Mohanni, Nader Nabil ElBolde, and Ahmed Mostafa Heider

- AJODO 2009
- No hyalinization on corticotomy group
Tentative conclusion

Surgically facilitated orthodontic treatment

David L. Turpin, Interim Editor-in-Chief
Seattle, Wash
Systemic review

Surgically facilitated orthodontic treatment: A systematic review

Eelke J. Hoogeveena, Johan Jansmab, and Yijin Rencc
Groningen, The Netherlands

- AJODO 2014
- low-to-moderate quality
- 18 studies included
New development

Rapid Treatment of Class II Malocclusion with Piezocision: Two Case Reports

Serge Dibart, DMD*
Jerome Surmenian, DDS, MS**
Jean David Sebaoun, DMD, MS***
Luigi Montesani, MD, DMD****
8 months 2 weeks
Combining Invisalign treatment

Compendium
March 2011, Volume 32, Issue 2
Published by AEGIS Communications

Piezocision-Assisted Invisalign® Treatment
Elif I. Keser, DDS, PhD; Serge Dibart, DMD

Figure 1

Figure 2

Figure 3

Figure 4 weeks

Figure 5

Figure 6

16 weeks

Figure 11
Combining lingual orthodontics

**Compendium**
September 2013, Volume 34, Issue 8
Published by AEGIS Communications

**Lingual Orthodontics: Accelerated Realignment of the “Social Six” with Piezocision™**
Federico Brugnami, DMD; Alfonso Calazzo, DMD; and Serge Dibart, DMD

30 days after
Piezopuncture

Effect of piezopuncture on tooth movement and bone remodeling in dogs

Young-Seok Kim, Su-Jung Kim, Hyun-Joo Yoon, Peter Joohak Lee, Won Moon, and Young-Guk Park
Seoul, Korea, and Los Angeles, Calif

3 fold movement distance on maxilla
My opinion

1. Still many problems (not thinning enough—no enough demineralization?)
2. Cost.
3. Timing of intervention.
4. Osteotomy or not?
5. A good choice when bone dehiscence is very likely.