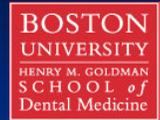


Orthodontic Treatment and Retention Outcomes Following Selective Alveolar Decortication



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Introduction

Decortication-facilitated orthodontics is a relatively new technique combining braces and alveolar corticotomy plus grafting. (Wilcko, WM, et al. Internat J Perio Restor Dent 21:9-19, 2001) Dental arches are decrowded and finished in 60-70% less active orthodontic treatment time with stable results. (Wilcko WM, et al. World J Ortho 4:197-205, 2003)



Decortication is an incision made into cortical bone after the orthodontic appliances have been placed. Surgical scarring of alveolar bone induces an increase in hard and soft tissue turnover, a process collectively known as Regional Acceleratory Phenomena or RAP. (Frost HA, Orthop Clin of N Amer 12:725, 1981)



Released by the ABO was Discrepancy Index (DI) as a measure of pre-tx malocclusion severity and Objective Grading System (OGS) as a measure of treatment outcome. In most cases, high DI scores would likely be predictive of treatment outcome instability.

Objectives

To compare treatment outcome stability of malocclusions with pre-treatment DI scores greater than 10 following orthodontic non-extraction therapy, with and without selective alveolar decortication.

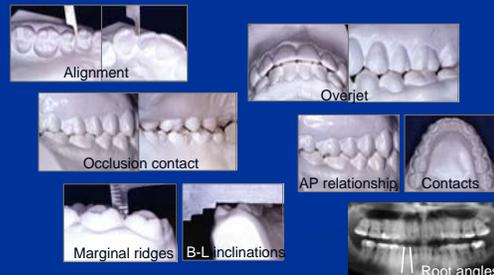
Methods & Materials

Sample

DI scores were derived from archived records of non-extraction patients treated by straight-wire mechanics, with and without Accelerated Osteogenic Orthodontics™ (AOO™). A sample of 54 subjects were identified with DI scores greater than 10 based upon analysis of pre-treatment study casts and radiographs. The sample was divided into 2 groups according to being treated with (n=26) or without (n=28) AOO™.

Data of Interest:

Using the 8 ABO Objective Grading System (OGS) criteria (alignment, occlusion contact, marginal ridges, B-L inclinations, overjet, AP relations, interproximal contacts, and root angulations) plus Total Score, study cast and panoramic records were scored at immediate post treatment and at least 1 year retention.



Results

Post Treatment Comparison

At immediate post treatment, Student t-testing demonstrated significantly lower scores for the sample treated with AOO™ (n=26) than without (n=28).

	Buccal-Lingual Inclinations 4.6 vs 6.6 (p=.04)
	Marginal Ridge Relationships 2.7 vs 5.9 (p<.001)
	Interproximal Contacts 0.3 vs 1.1 (p<.001)
	OGS Total Score 21.7 vs 30.6 (p<.001)

Comparison at Retention

	Alignment 1.3 vs 3.8 (p<.001)
	Marginal Ridge Relationships 1.4 vs 4.9 (p<.001)

Conclusion

Orthodontics combined with selective alveolar decortication plus grafting (AOO™) to resolve malocclusions with pre-treatment Discrepancy Index scores greater than 10 produced better orthodontic and retention outcomes in non-extraction, straight-wire therapy cases.