Orthodontic Treatment and Retention Outcomes Following Selective Alveolar Decortication

E.D. Walker*, D.J. Ferguson, O. Rajaei, W.M. Wilcko, & M.T. Wilcko

Boston University Orthodontics

Introduction

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.

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 two groups according being treated with AAO™ or without AAO™. (from: Sebaoun J-D, Masters Thesis, BU, 2005)

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 AAO™ (n=26) than without AAO™ (n=28).

Comparison at Retention
Alignment
1.3 vs 3.8 (p<.001)

Marginal Ridge Relationships
2.5X

Interproximal Contacts
0.3 vs 1.1 (p<.001)

OGS Total Score
21.7 vs 30.6 (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.