

# Periodontally Accelerated Osteogenic Orthodontics: 1-year Results Of A Clinical Study

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56 Year-old female

## Chief Complaint:

"I want braces to straighten my teeth"

## Medical History

Non-contributory (ASA I)  
NKDA

## Social History

Smoker (-)  
EtOH (-)

## Key Clinical Findings:

### Periodontal:

- Thin, scalloped gingival biotype
- PPD 1-3mm
- Multiple recessions

### Occlusal:

- Anterior open bite (6mm)
- Buccal cross-bite (RHS)

## Diagnosis:

### Periodontal:

Clinical gingival health on a reduced periodontium, Non-periodontitis patient

### Mucogingival Deformities and Conditions Around Teeth

Gingival/soft tissue recession: - Localised RT1 A+

### Occlusal:

Anterior open bite malocclusion

### Dental:

Abfraction – UR4, UR5, UR6, UL3, UL4, LL4, LL5, LR4, LR6

## Treatment plan:

### Phase I (Emergency/Preventive):

- OHI, GDP to stabilise and manage abfraction, CT Scan, Referral to Ortho,  
*Following GDP tx, orthodontic referral and MDT to proceed with PAOO*

### Phase II (Surgical):

- Placement of brackets (pre-surgery)
- Buccal bone augmentation with FDBA and PDGF (pre-ortho)
- Orthodontic activation 3 days post-GBR

### Phase III:

- Periodontal maintenance (6 monthly recall)

## Discussion:

During or following orthodontic treatment, adults are more vulnerable to root resorption and periodontal pathologies attributed to aplastic and poorly vascularised periodontal ligament and alveolar bone housing. Age has been shown to be a significant variable contributing to the biologic response to orthodontic forces. Despite higher levels of cytokine and osteoclastic activity in response to orthodontic forces, adults show a significantly slower rate of tooth movement when compared to adolescents.

Periodontally accelerated osteogenic orthodontics (PAOO) utilises the "regional acceleratory phenomenon" to move teeth further in a significantly shorter time compared to traditional orthodontics. PAOO, which involves corticotomy/osteotomy simultaneously with guided bone regeneration and immediate orthodontic therapy, results in an increased net alveolar volume post-orthodontic therapy.

Consequently, long-term periodontal and orthodontic stability can be achieved with a significantly reduced treatment duration.

## Conclusion:

This case report describes the multidisciplinary management of an adult patient presenting with an anterior open utilising PAOO over the course of 1 year.

Pre-Treatment



Corticotomy



GBR



Orthodontic Therapy 3 Days Post-GBR



Post-Treatment

