



SFOT To Treat Class 3 Malocclusion Recurrence

Kiran Changa, DDS

Ashley Tran, DDS

Tamar Rogoszinski, DMD

Richard Bloomstein, DMD

Frank Celenza, DDS

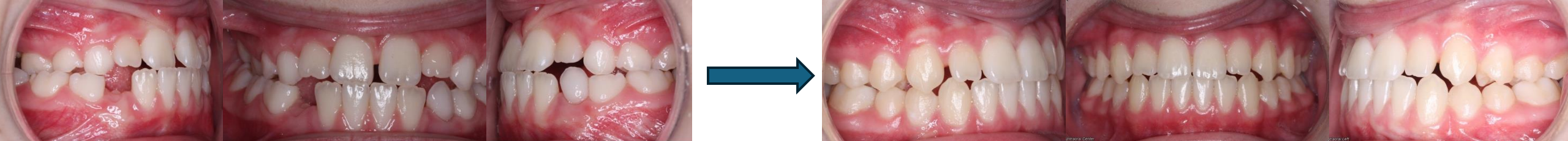


Figure 1: Initial presentation photos (2012) to final treatment photos (2017)



Figure 2: Retention Photos in 2019 (above), 2023 Presentation (below)

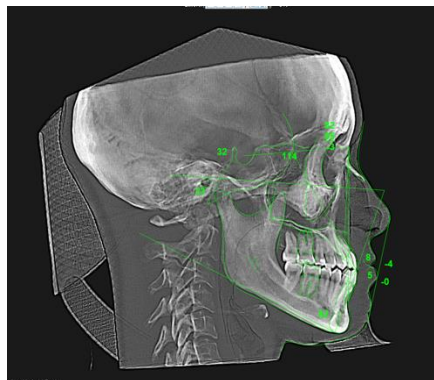


Figure 3: Lateral Cephalometric image with tracings



Figure 4: Initial presentation, and bonding appointment (2023)

Introduction

Class III malocclusion is a complex orthodontic condition involving misalignment of the dental arches, often requiring comprehensive treatment. Patients may sometimes relapse after initial treatment, necessitating retreatment. This case report presents the use of Surgically Facilitated Orthodontic Therapy (SFOT) for a Class III malocclusion relapse after orthodontics completed in 2017 (Figure 1). The patient presented to the Orthodontics clinic in 2023 (Figures 2,3,4) with concerns of edge-to-edge occlusion, progressing toward Class III. SFOT was recommended to accelerate orthodontic treatment and manage occlusal discrepancies while minimizing further apical root blunting.



Figure 5: Maxillary Surgical photos

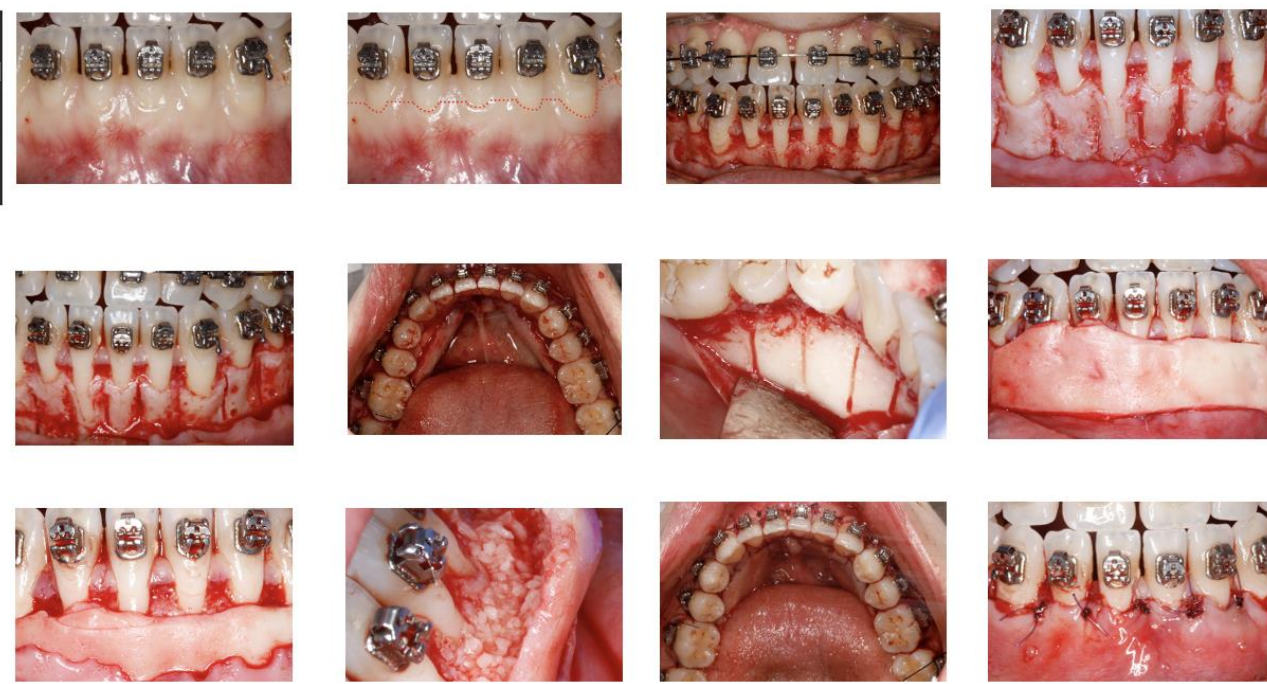


Figure 6: Mandibular Surgical photos

Methods:

The patient underwent a maxillary and mandibular SFOT, 3 months after orthodontic initiation. Elevation of the full-thickness flap from the second molar to the second molar was achieved (Figures 5 and 6). Corticotomies and vertical piezo incisions were made on the cortical housing until the trabecular bone was reached, and then graft material and membrane was used. The flaps were positioned back to the cemento enamel junction (CEJ) of all teeth.



Figure 7: Maxillary xenograft placement



Figure 8: Mandibular allograft placement

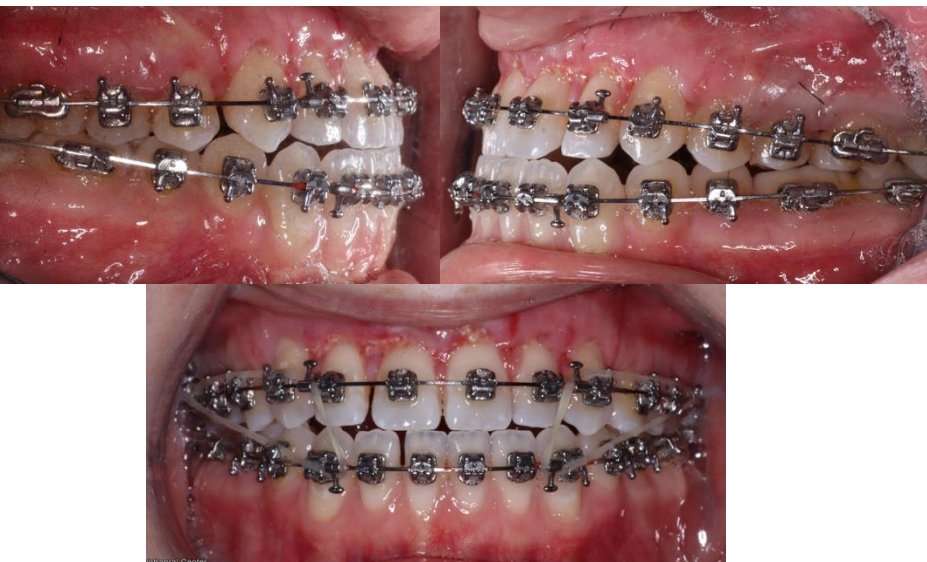


Figure 9: One Month maxillary follow up



Figure 10: One Month mandibular follow up



Figure 11: TAD Placement

Results:

In the maxilla, a xenograft was used buccally from canine to canine, covered with a resorbable membrane (Figure 7). In the mandible, DFDBA allograft was applied in the same region, with an acellular dermal matrix managing a mucogingival defect on teeth #25 and #26 (Figure 8). Temporary Anchorage Devices (TADs) were placed posterior to the mandibular second molars to aid in distalization one month after SFOT (Figure 11). This strategic placement of TADs provided additional anchorage support, ensuring more efficient orthodontic movement. The patient achieved malocclusion correction within 6 months, shorter than the 10 month quotation.



Figure 12: Initial photos (2023)



Figure 13: Final photos (2024)

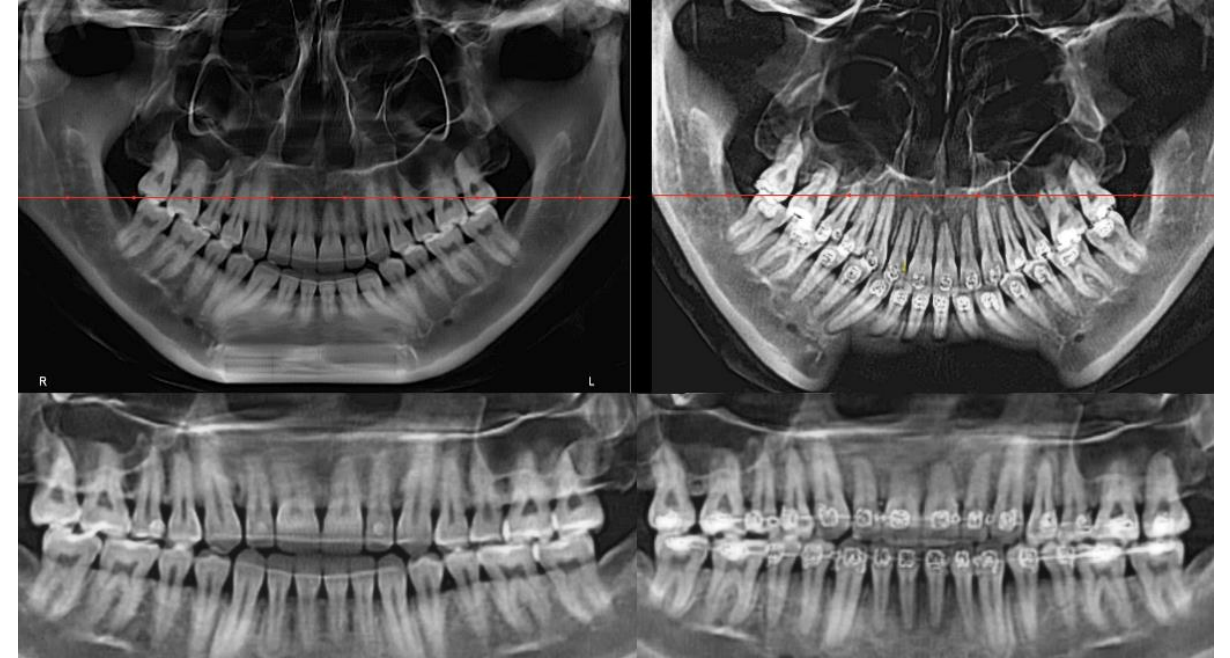


Figure 14: Panoramic imaging taken before treatment (left) and at debonding appointment (below)

Results:

The combination of corticotomies, bone grafting, and precise orthodontic planning ensured rapid, stable outcomes, minimizing further apical root blunting, enhancing the long-term stability of the corrected Class III malocclusion, and significantly reducing overall treatment time.

Conclusion:

SFOT proved to be a valuable adjunct in the retreatment of a Class III relapse, reducing orthodontic treatment time while minimizing risks such as further apical root blunting (Figure 14). The patient's treatment outcome highlights the potential of SFOT in addressing malocclusion relapses and optimizing orthodontic care.