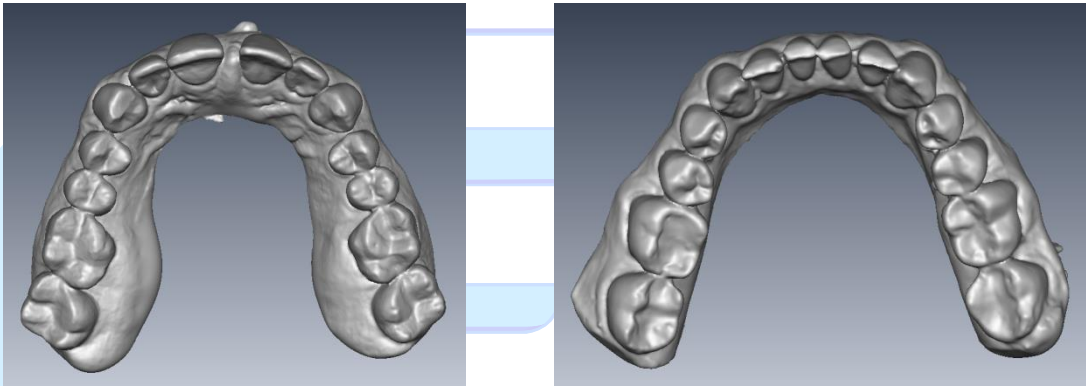


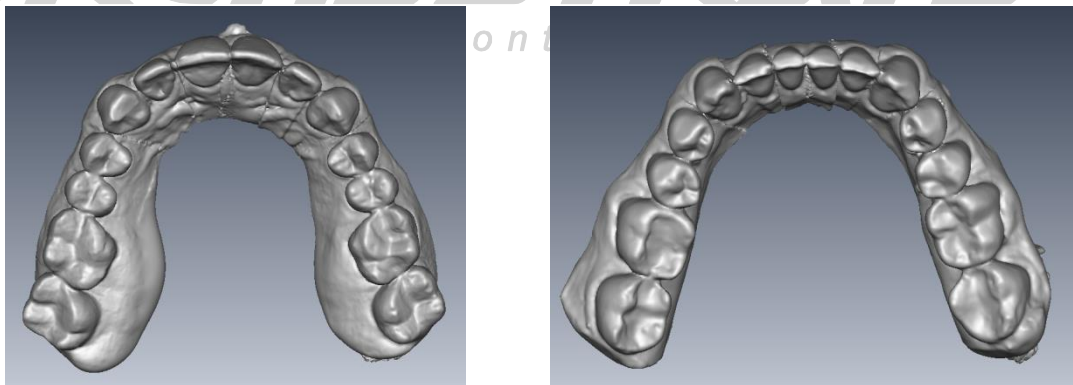
Multidisciplinary orthodontic-restorative treatment plan. Upper and lower anterior segments retracted, intruded and aligned. Closure of large maxillary midline diastema without root divergence during space closure. Radiographic images of upper incisors illustrate parallel roots post alignment.

Periodontal ligament spaces on distal surfaces of upper central incisors appear equal in dimension along entire root surface which would indicate translational movement. Treated without attachments. The ability to apply a moment to counter act the moment of mesial force applied for diastema closure was likely enhanced by the size and shape of the clinical crowns, the ability to access and apply force in the gingival embrasure spaces, trimming the Orchestrate aligner trays without scalloping approximately 1mm beneath the gingival margins, and using 2 trays of varying thickness for each movement to compensate for material distortion.

Initial



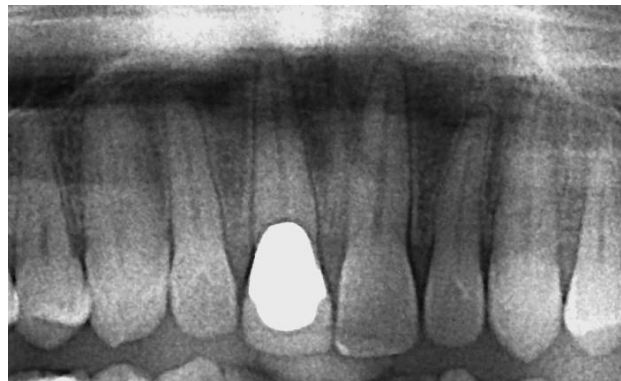
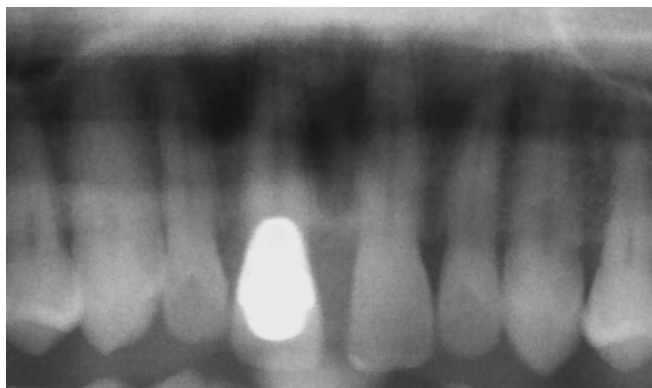
Final



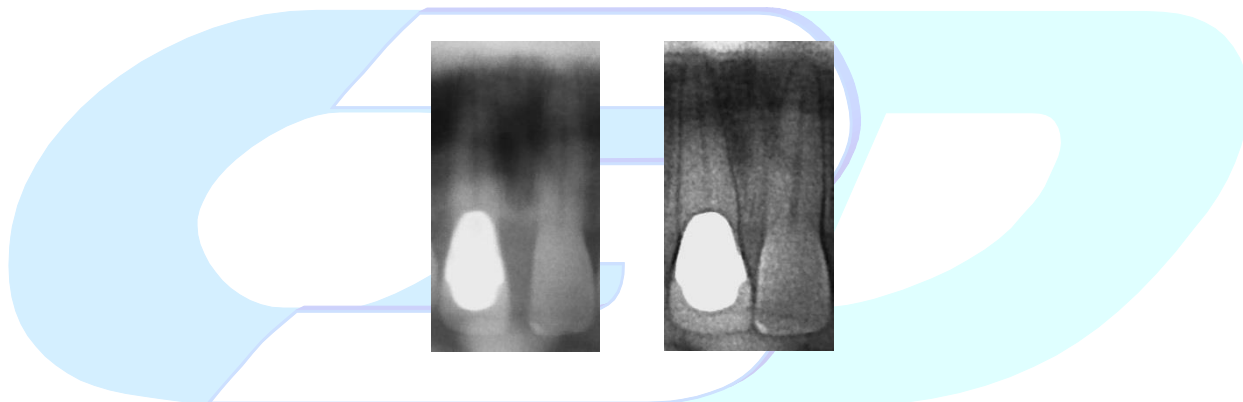


Root Movement?

PDL enlarged along distal root surfaces

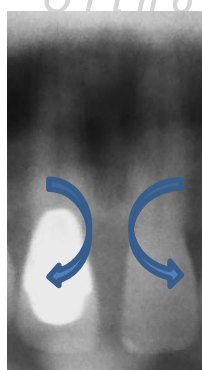
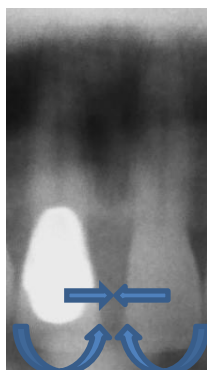


Trays engaged in gingival embrasure spaces potentially producing couple applying rotational moment to counteract equivalent moment of force from mesial movement of incisors



- M1 = moment of applied force
- M2 = applied moment from tray

M1 = M2, is equivalent to F through center of resistance and translation occurs



Moment of Force
 $M1 = F \times d$