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OCCLUSAL CHANGES SECONDARY TO SERIAL EXTRACTIONS COMPARED TO LATE PREMOLAR EXTRACTIONS AND CONTROLS

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Objectives: To determine the relationships between tooth tipping and occlusal curvature (OC) patterns in serial extraction (SE) cases as compared to late premolar extraction (LPE) cases and controls.

Methods: Mandibular dental casts and cephalometric radiographs were collected from 90 subjects (30 Class I controls, 30 SE cases, 30 LPE cases) at 3 time points: baseline (T0) for controls and SE, after natural drift/pre orthodontics (T1) for controls, SE, and LPE, and after comprehensive orthodontic treatment (T2) for the SE and LPE groups. The casts were scanned and rendered as virtual models using the Ortho Insight 3D™ scanner. OCs were measured by sphere-fitting (least-squares method) to cusp tip landmarks (Rhinoceros™). Digitized radiographs related long axes of the central incisor, canine, and first molar to palatal plane to determine the direction and amount of tipping that occurred between the time points.

Results: T0 and T1: SE differed from other groups, with steeper OCs. T0-T1: SE had a tendency for incisor and canine distal tip, and mesial molar tip. T1-T2: SE had steeper OCs, mesial tip of the incisor and canines, with distal molar tip.

Conclusions: SE tends to produce steeper OCs post drift and post treatment vs LPE and controls. In general, post SE orthodontics involved incisor and canine proclination with molar uprighting.