Change in Third Molar Angulation/Position and Periodontal Pathology

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Objectives: Third molars change angulation, and impacted teeth erupt to the occlusal plane during the 3rd decade. This study assessed changes in 3rd molar position/angulation, and the resulting periodontal probing status.

Methods: Data derived from patients with four asymptomatic 3rd molars with adjacent 2nd molars, enrolled in an IRB-approved longitudinal trial. Inclusion criteria dictated that patients: be healthy, ASA I, II, and 14 - 45 years. Panoramic radiographs were analyzed for 3rd molar angulation as compared to the long axis of the 2nd molar (mesial/horizontal >25 degrees) and eruption to the occlusal plane. Full mouth periodontal probing (PD) was conducted at follow-up.

Results: Data from 237 patients were available. If patients had all 3rd molars at the occlusal plane at baseline, n=134, median age at baseline was 28.6y (IQ 24.3, 28.6y). Median age for the remainder with at least one 3rd molar below the occlusal plane at baseline was 22.5y (IQ 19.0, 28.5y). Most impacted maxillary 3rd molars, 86%, were vertical/distal at baseline; most mandibular were mesial/horizontal, 61%. With a median follow-up of 2.2 years (IQ 2.0, 3.5y), 22% of impacted 3rd molars changed angulation or position. While remaining below the occlusal plane, 15% vertical/distal maxillary 3rd molars changed angulation to mesial/horizontal. A third of vertical/distal impacted 3rd molars, and 10% mesial/horizontal mandibular 3rd molars erupted to the occlusal plane.

At follow-up 12% mesial/horizontal impacted maxillary 3rd molars and 28% mandibular had PD>4mm on distal of 2nd molars or around 3rd molars; similarly affected were 11% vertical/distal impacted maxillary and 32% mandibular 3rd molars. Only 11% maxillary 3rd molars at the occlusal plane had PD>4mm on distal of 2nd or around 3rd molars, but 51% erupted mandibulars 3rd molars were affected.

Conclusion: A shift in 3rd molar position was common. Erupted mandibular 3rd molars were likely to have PD>4mm.

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