Third Molars and their effect on the periodontium

Krausz AA, **Machtei EE**, **Peled M**. **Effects of lower third molar extraction on attachment level and alveolar bone height of the adjacent second molar.** Int J Oral Maxillofac Surg. 2005 Oct;34(7):756-60.

Several conflicting findings have been published in previous literature regarding the effects of impacted third molar extraction on the periodontal health of the adjacent second molar; some authors have shown improvement of periodontal health distal to the adjacent second molar, whilst others have demonstrated loss of attachment and reduction of alveolar bone height. The purpose of this controlled clinical and radiographic study is to evaluate the long-term changes in periodontal health and alveolar bone height distal to the adjacent second molar following extraction of an impacted third molar. This split-mouth design study included 25 patients who underwent extraction of one mandibular impacted third molar (test), whereas the opposite tooth remained intact (control). Pre-operative and current-state panoramic radiographs were than scanned, and alveolar bone height was digitally measured on the distal aspect of the second molar on the test and control sides. Current-state clinical measurements were performed on both sides, and consisted of plaque index, gingival index, periodontal pocket depth, gingival margin position and clinical attachment level. Student's t-test for paired observations was used in order to examine the statistical significance of the differences in clinical parameters between the test and control sides and the differences in alveolar bone height pre- and post-operatively on both sides. Extraction of an impacted third molar resulted in a significant gain of alveolar bone height on the distal aspect of the adjacent second molar on the test side, whereas slight bone loss was noted on the control side. Even though the difference in plaque index between the test and control sides approached statistical significance following extraction, all clinical parameters seem to be unchanged. Further follow-up on clinical and radiological parameters is required for a more profound understanding of the long-term effects of third molar extraction on the periodontal health of the adjacent second molar.

Richardson DT, **Dodson TB**. **Risk of periodontal defects after third molar surgery: An exercise in evidence-based clinical decision-making.** Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2005

OBJECTIVE: The object of this study was to apply evidence-based principles to answer the question, What is the risk of having periodontal defects on the distal aspect of the mandibular second molar (M2) following third molar (M3) removal? STUDY DESIGN: To identify relevant articles for review, we completed a computerized literature search of Medline. The inclusion criteria for articles included prospective cohort studies or

randomized clinical trials with follow-up periods of 6 months or more, and preoperative and postoperative measurements of periodontal probing depths (PDs) or attachment levels (ALs). RESULTS: Eight articles met the inclusion criteria. Overall, the reported mean changes in ALs or PDs on the distal of M2 6 months after M3 removal were clinically insignificant, ie, less than 2 mm. Six months after M3 removal, 52% to 100% of subjects had no change or improvement in ALs or PDs. Given periodontal disease present preoperatively, the number needed to treat (NNT) ranged from 3 to 10. Given healthy periodontal status preoperatively, 48% had worsening of their periodontal measures after M3 removal and the number needed to harm (NNH) was 2. CONCLUSION: Commonly, the second molar periodontal probing depth or attachment levels either remain unchanged or improve after third molar removal. For subjects with healthy second molar periodontium preoperatively, the indication for third molar removal needs to be evaluated carefully as these subjects have an increased risk for worsening of probing depths or attachment levels after third molar removal.