

# Managing post endodontic treatment pain by eliminating occlusal contacts

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## A commentary on

**Emara R S, Abou El Nasr H M, El Boghdadi R M.**

Evaluation of postoperative pain intensity following occlusal reduction in teeth associated with symptomatic irreversible pulpitis and symptomatic apical periodontitis: a randomized clinical study. *Int Endod J* 2019; **52**: 288–296. DOI: 10.1111/iej.13012.G

## Abstract

**Data sources** Forty-four adult patients (32 female : 12 males) with irreversible pulpitis with periapical periodontitis on a mandibular posterior tooth, who were undergoing a two-visit endodontic treatment protocol, were randomly divided into two groups. The intervention group (n = 22) had occlusal surface reduced on the treated tooth and a control group (n = 22) did not.

**Data** The primary outcome was pain intensity after endodontic treatment, which was measured on a visual-analogue-scale (VAS). This was measured 6, 12, 24 and 48 hours after the first visit, and 6, then 12 hours after the second visit.

The study also investigated the proportion of patients who took post-operative analgesic tablets.

**Results** Pain intensity 12 hours after the first and second visits were statistically significantly lower in the intervention group compared to the control group. The proportion of patients who recorded taking analgesics was not significantly different between the two groups.

**Conclusions** Occlusal reduction seems to reduce levels of post root-treatment pain in posterior mandibular teeth 12 hours postoperatively, but otherwise makes little difference.

## Commentary

An all too common sequelae of nonsurgical endodontic treatment is self-limiting post-op pain that can linger for about a week<sup>1,2</sup> The literature describes many ways of managing this pain.<sup>3,4,5,6,7,8,9</sup> One technique which can be used, which goes back to the early days of endodontic care, is taking the treated tooth completely out of occlusion post-operatively.<sup>10</sup> This study by Emara et al. supports this practice for lower molar teeth presenting with symptomatic apical periodontitis.

It would be premature to consider the results of any single clinical study as being conclusive without verifying it with other sources of evidence; in particular, by critically appraising the evidence relative to the current body of knowledge which addresses the same clinical question. A quick search of PubMed, Google Scholar and EMBASE identified eight other such studies dating back to 1984.<sup>11,12,13,14,15,16,17,18</sup> The majority of them found no difference in patient-reported, post-treatment pain between those

## Practice point

The clinical protocol of routinely taking a non-surgical endodontically treated molar out of occlusion for the sake of reducing post-op pain is not evidence based.

who had the endodontically treated tooth taken out of occlusion or not.<sup>11,12,14,16,17,18</sup>

The fundamental problem with synthesising any body of knowledge is how to account for the heterogeneity between the included studies. This body of knowledge is not short of significant inter-study variability: in the diagnostic definition, treatment protocol, outcome measure and sample size to name some of the sources of heterogeneity. For example, in some studies calcium hydroxide dressing was used as an inter-operative medicament before canal obturation was finalised while in others the canals were left empty. Also, this study by Emara *et al.* measured post-op pain perception on a 10 mm visual analogue scale (VAS). Most of the other studies used broad categories (for example, none, mild, moderate, severe pain) to report patient experience. Data from continuous scales are more likely to find a statistical difference between groups than data from a broad categorical scale, but how clinically significant those differences are, remain open to question.

The first studies on this topic were published in 1984 and found no differences when teeth were, or were not, taken out of occlusion.<sup>11,12</sup> However, Rosenberg *et al.* (1998) performed a quasi-subgroup analysis, suggesting that teeth presenting with symptomatic apical periodontitis are more likely to benefit from occlusal reduction than those that are asymptomatic.<sup>13</sup> Except for two studies, including this one, most subsequent studies have not confirmed this hypothesis.

However, this study by Emara *et al.* only found a significant, but small difference in patient reported pain levels between the experimental group and the control group after 12 hours. At all other time intervals, no statistical differences were found, which suggested that this study is largely consistent with the majority of studies which found occlusal reduction did not make a difference to patients' reported post-op pain experience.

Evidence-based decision making involves the systematic approach of translating scientific knowledge to individual patient care. The GRADE (Grading of Recommendations, Assessment, Development and Evaluations) approach offers such a process of making clinical recommendation as being either strong or limited by assessing the quality of evidence on five domains – risk of bias, imprecision, inconsistency, indirectness, and publication bias.<sup>19</sup>

Although eight of the nine studies were RCTs, it can be concluded that the quality of evidence is low because of moderate to high bias in each study, imprecision of the reported

GRADE rating



outcome and inconsistency between studies. Occlusal reduction on all endodontically treated teeth to prevent post-op pain cannot be recommended yet. However, in those cases where a crown is indicated and the patient is willing to follow through with such treatment afterwards occlusal reduction should be performed.

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