The Effect of Occlusal Reduction on Pain after Endodontic Instrumentation

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**Aim**
- To evaluate the effect of occlusal reduction on pain after endodontic instrumentation.
- To develop a statistically valid profile of patients most likely to benefit from occlusal reduction.

**Materials & Methods**
- 117 posterior teeth, in occlusion, requiring endodontic treatment, were included in this study.
- Teeth lacking occlusal contacts or restorations to be maintained were excluded.
- The following pre-op conditions were recorded for each patient:
  a- Pulp vitality, percussion sensitivity & presence or absence of PAR
  b- Pain/swelling/sinus tracts
  c- Hx. of bruxism
- Teeth to be studied were randomly assigned to 1 of 3 occlusal treatment groups:
  - **Total occlusal reduction** (lack of occlusion in centric occlusion and all excursions)
  - **Simulated occlusal reduction** (a nonfunctional cusp was determined & reduced centric occlusion was left intact)
  - **Control group** (occlusal surfaces were left untouched before access)
- Patients were requested to describe their pain experience during the 48hrs. immediately after canal instrumentation and occlusal adjustment as no, moderate, or severe pain.
- Results were statistically analyzed.

**Results**
- **No pain:** a- 76% in the total occlusal reduction group  
  b- 50% in simulated occlusal reduction group  
  c- 35.1% in the control group.
- **Moderate pain:** a- The lowest % was in the total reduction group cases (20%).  
  b- The highest % was in the control group cases (54.1%).
- No tooth from the simulated occlusal reduction or control groups fell into the no-pain category.
- No patient in the total reduction group reported severe pain.
- 80% of the vital teeth in the total reduction group reported no pain, whereas the majority of vital teeth in either the simulated reduction or control groups reported some type of pain.
- The majority of percussion sensitive teeth in the total occlusal reduction group reported no pain, whereas most of the teeth in the other groups reported a moderate or severe pain response.
- The majority of patients with PAR reported no pain in all 3 groups. While in patients with no PAR, the majority of teeth in total occlusal reduction group reported no pain, whereas the higher % of those in the simulated occlusal reduction or control groups reported pain.
- When pre-op pain was present, total occlusal reduction reduced post-op pain significantly.

**Conclusion**
- Occlusal reduction should prevent post-op pain in those patients whose teeth initially exhibit pulp vitality, percussion sensitivity, pre-op pain, and/or the absence of a PAR.

**Authors**
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