

Piezosurgery vs. Sonosurgery: Assessment of Two Techniques in Third Molar Surgery and Comparison with the High-Speed Rotary Handpiece: A Preliminary Study

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Abstract

Objectives: The aim of this preliminary study is to compare piezosurgery with sonosurgery, to verify the possibility of having alternatives in the use of the current reference standard (high-speed handpiece), evaluating the intraoperative time required for odontotomy cutting and postoperative pain control.

Methods: Our experimental protocol involved the selection of 15 patients aged 21 to 27 years with at least one lower third molar requiring surgical extraction with odontotomy. The 15 patients were divided into three equal groups: the first group was treated with a high-speed handpiece, the second group with piezosurgery, and the third group with sonosurgery. To assess pain control during the postoperative period, each

patient was asked to record the perceived intensity on a pain scale ranging from 0 (no pain) to 10 (excruciating pain).

Results: High-speed handpiece reported the fastest intraoperative times, but with less satisfactory pain control, especially in older patients; Sonosurgery, on the other hand, recorded the longest intraoperative times, but a better analgesic response at every age. Finally, Piezosurgery obtained intermediate values in terms of cutting speed and pain control. According to our preliminary data, sonosurgery appears to be an effective alternative for third molar extractions. The high-speed handpiece, thanks to its effectiveness in cutting hard tissue, confirms its validity due to its increased speed of

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execution.

Conclusions: Further studies will be needed to confirm our hypotheses and to further explore the properties and specificities of surgery with sonic instruments.

Keywords: Sonosurgery, Odontotomy, Third Molar, Oral Surgery