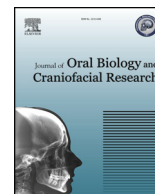




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Original Article

Effect of immediate periodontal surgical treatment on periodontal healing in combined endodontic–periodontal lesions with communication—A randomized clinical trial

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ABSTRACT

Background and objective: Management of combined endodontic–periodontal lesions needs more clinical investigations. The aim of this prospective randomized clinical trial was to evaluate the effect of time interval between the non-surgical endodontic treatment (ET) and open flap debridement (OFD) on periodontal healing in combined endodontic periodontal lesions with apical communication.

Methods: Forty patients were randomly allocated to two treatment protocols. Group 1 (immediate periodontal surgery): OFD was performed at 21 days of initiation of ET and SRP, and Group 2 (delayed periodontal surgery): OFD was performed after 3 months of initiation of ET and SRP. The primary parameters included probing pocket depth (PPD), relative attachment level (RAL) and bleeding on probing (BOP) and tooth mobility (TM).

Results: Significantly more reduction in PPD, TM and gain in RAL was observed in Group 1 at 3 months of OFD. ($P < 0.05$) Whereas at 6 months follow up of OFD (6 and 9 months of ET in Group 1 and Group 2, respectively), intergroup analysis showed statistically comparable reduction in BOP (%), PPD, TM and gain in RAL ($P > 0.05$) in both the groups.

Conclusion: Immediate periodontal surgery may not affect the outcome of the treatment of combined endo-perio lesions with apical communication.

1. Introduction

Combined endodontic-periodontal lesions with communication relate to a tooth that has an infected root canal system with apical periodontitis and having marginal periodontal disease with periodontal pocket formation that extends to the periapical lesion such that the periapical and periodontal diseases communicate with each other.¹

Combined lesions have more complex microflora than in teeth with pathosis confined to the periapical region.² Furthermore, similar environmental conditions favouring anaerobic growth appear to be present in both deepened periodontal pockets and necrotic pulp and it is difficult to assess which microbiota play a role in the pathogenesis of disease and found in the lesion as the environment favours their selection.³ The periodontal pocket may be a source of bacteria for the root canal system^{4–6} or vice versa, and cross-seeding of bacteria can occur in either direction through the anatomical connections between periodontal and pulpal tissues.⁶

When treating teeth with combined endodontic and periodontal

diseases, the effects of the treatment of one tissue on the partner tissue⁷ and cross seeding of bacteria also need to be considered.

Traditionally, the treatment strategy in management of combined endodontic and periodontal lesion is to first focus on debridement and disinfection of the root canal system followed by an observation period of three months for definitive periodontal therapy.⁸ Recently, Gupta et al.⁹ in a prospective randomized clinical trial in concurrent endodontic-periodontal lesions without communication found that observation period for initiation of periodontal treatment may not be required and there is no negative influence of non-surgical periodontal therapy simultaneously performed with endodontic treatment on periodontal healing.

Management of combined endo-perio lesions with apical communication is more challenging and requires comprehensive treatment with both endodontic and periodontal therapy to reduce possible complications from one disease entity, affecting the outcome of the treatment of the other diseases. Few case reports and review studies^{1,10–13} reported management of such lesions with strategy on

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Fig. 1. Clinical procedure in Mandibular right first molar (#46).

- A. Preoperative Periodontal parameter measurements with UNC 15 probe at baseline
 B. Preoperative radiograph showing concurrent endo perio lesion with apical communication with gutta percha point in periodontal pocket
 C. Open flap debridement
 D. Postoperative radiograph at 3 months after OF
 E. Postoperative periodontal parameter measurement at 6 months after OFD
 F. Postoperative radiograph at 6 months after OFD

timings of endodontic and periodontal treatment. But so far no clinical trial has been conducted. Thus the present study was conducted with the aim to evaluate the effect of immediate and delayed periodontal surgical therapy after non-surgical endodontic treatment, on periodontal healing in concurrent endodontic periodontal lesion with apical communication.

2. Material and methods

2.1. Ethics statement

The study protocol follows the ethical standards outlined in the Helsinki declaration 1975, as revised in 2013. The protocol was approved by the Institutional Review Board and the ethical approval was obtained from the ethical committee. Written and verbal informed consent was obtained from each patient. The clinical trial is registered at ClinicalTrials.gov as NCT02630745.

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