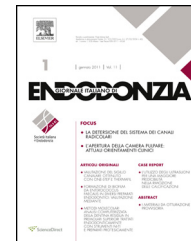




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ORIGINAL ARTICLE/ARTICOLO ORIGINALE

A two-year report of a comparative randomized controlled trial on the treatment of upper central incisors with periapical lesions

Risultati a due anni di un trial clinico controllato randomizzato comparativo sul trattamento di incisivi centrali superiori con lesione periapicale

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Received 28 October 2016; accepted 23 December 2016

Available online xxxxxx

KEYWORDS

Periapical lesion;
Integrated endodontic techniques;
Carrier based systems;
Healing.

Abstract

Aim: To evaluate the two-year success rate of primary root canal treatment performed with two integrated shaping and filling systems on upper central incisors with chronic periapical pathosis. **Methodology:** The trial enrolled 60 patients with an untreated maxillary central incisor presenting a chronic periapical lesion smaller than 5 mm in diameter, who were randomly assigned to two treatment groups: G1 ($n = 30$), Revo-S/One Step Obturator; G2 ($n = 30$) GTX/GTX Obturator. The patients underwent single-session root canal treatments by an experienced endodontist and were followed up for two years. The clinical evaluation entailed percussion and palpation tests. Two independent examiners rated the radiographic healing on the basis of a previously described scale. Comparability between groups in terms of baseline clinical parameters was tested with a

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Peer review under responsibility of Società Italiana di Endodonzia.



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<http://dx.doi.org/10.1016/j.gien.2017.01.001>

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Please cite this article in press as: Angerame D, et al. A two-year report of a comparative randomized controlled trial on the treatment of upper central incisors with periapical lesions. *Giornale Italiano di Endodonzia* (2017), <http://dx.doi.org/10.1016/j.gien.2017.01.001>

PAROLE CHIAVE

Lesione periapicale;
Tecniche endodontiche integrate;
Sistemi carrier-based;
Guarigione.

Mann-Whitney test (age, apical gauging) and χ^2 test (tenderness to percussion and palpation). The comparison of clinical data and radiographic healing scores between the groups and among time points was carried out with non-parametric statistical methods ($p < 0.05$).

Results: The two groups were comparable in terms of baseline clinical parameters. All patients were available for the re-evaluation after two years. Only one patient per group was positive to the clinical tests at the final recall. An improvement of radiographic healing scores along the follow-up period was observed. After two years, the lesions were scored as totally healed, partially healed and not healed in 93.3%, 3.3% and 3.3% of cases in G1 and in 93.3%, 0% and 6.7% of cases in G2, without pointing out statistically significant differences between groups.

Conclusions: Both the two tested integrated shaping and filling systems proved to be effective for the treatment of upper central incisors with periapical pathosis. When monitoring the healing of periapical lesions, follow-up times longer than one year may be required to observe complete healing.

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Riassunto

Obiettivi: Valutare il tasso di successo a due anni del trattamento endodontico di incisivi centrali superiori affetti da lesione periapicale eseguito con due sistemi integrati di strumentazione e otturazione.

Materiali e metodi: Lo studio ha coinvolto 60 pazienti con un incisivo mascellare centrale non trattato con lesione periapicale (diametro ≤ 5 mm), i quali sono stati attribuiti casualmente a due gruppi di trattamento: G1 (n = 30), Revo-S/One Step Obturator; G2 (n = 30) GTX/GTX Obturator. I pazienti sono stati sottoposti a trattamenti endodontici in singola seduta a opera di un endodontista e seguiti nel tempo per due anni. La valutazione clinica è consistita nel testare la dolorabilità alla palpazione e alla percussione. Due esaminatori indipendenti hanno valutato la guarigione radiografica facendo riferimento a una scala descritta in precedenza. La comparabilità tra i gruppi in termini di parametri clinici iniziali è stata verificata con test Mann-Whitney (età, gauging apicale) e χ^2 (sensibilità a palpazione e percussione). Il confronto dei dati clinici e dei punteggi radiografici tra i due gruppi e tra i tempi sperimentali è stato condotto con test non parametrici ($p < 0,05$).

Risultati: I due gruppi sono risultati paragonabili in termini di parametri clinici al baseline. Tutti i pazienti si sono ripresentati alla rivalutazione a 2 anni. Un solo paziente per gruppo ha riportato dolorabilità ai test clinici al controllo finale. È stato osservato un miglioramento dei punteggi radiografici durante il follow-up. Dopo due anni le lesioni periapicali sono state classificate come guarite, ridotte in dimensioni e non guarite rispettivamente nel 93,3%, 3,3% e 3,3% dei casi in G1 e nel 93,3%, 0% e 6,7% dei casi in G2, senza rilevare differenze statisticamente significative tra i gruppi.

Conclusioni: Entrambi i sistemi integrati di strumentazione e otturazione testati sono risultati efficaci nel trattamento della patologia periapicale di incisivi centrali superiori. Il monitoraggio delle lesioni periapicali può richiedere un follow-up maggiore di un anno per osservare la guarigione completa.

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Introduction

In the management of the periapical pathosis of endodontic origin, the purpose of the root canal treatment is to remove the necrotic tissue, as well as microorganisms from the endodontic system, thereby promoting the healing of periapical tissues.¹ To contribute to the success of root canal treatment, both an effective chemo-mechanical cleaning and a tight three-dimensional seal of the root canal filling should be achieved.

Shaping and filling techniques have recently undergone a process of simplification. An example of such trend is the decrease of the number of instruments that modern rotary systems are composed of.² Further, filling techniques involving

carrier-based systems provide the clinician with the possibility to fill the whole root canal with thermoplasticised gutta-percha in a single step. Filling techniques performed in fewer steps may be advantageous – especially for neophytes and non-specialists – as simplified systems seem to be less prone to cause errors in the operative procedure. This is supported by the findings of a microtomographic study, which showed how root fillings performed by novices with the continuous wave of condensation technique contained higher amount of voids and took longer times.³ In addition, manufacturers and dealers offer integrated endodontics systems, in which the size of the filling instruments matches that of shaping files. Both Revo-S (Micro-Mega, Besançon, France) and GTX rotary files (Dentsply Tulsa Dental Specialties, Tulsa, OK, USA) can be

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