

Case Report

By Dr Mark Evans, MDSc, GradDipClinDent, FPPA.

Address for correspondence: Dr Mark Evans, 3rd Floor, 517 St Kilda Road, Melbourne, VIC 3004.

Combined Endodontic And Surgical Treatment Of A Three-rooted Maxillary First Premolar

Abstract

A case is reported in which endodontic treatment of a maxillary first premolar was complicated by the fact that the tooth had three roots. One of the roots was completely calcified and therefore could not be negotiated with endodontic files. There was a large periapical lesion associated with the tooth and this was surgically removed. During the surgical procedure a retrograde cavity was prepared on the calcified root using ultrasonic instruments and this was filled using Super EBA cement. Twelve months later the tooth was asymptomatic and the periapical tissues had completely healed.

By Dr K.C. Lim, BDS, MSc, FAMS, MFGDP(UK), Department of Restorative Dentistry, Faculty of Dentistry, National University of Singapore.

Address for correspondence: Dr K.C. Lim, Department of Restorative Dentistry, Faculty of Dentistry, National University of Singapore, 5 Lower Kent Ridge Road, Singapore 119074.

Considerations In Intracoronal Bleaching

This paper is based on a lecture presented by Dr Lim at the Asia Pacific Endodontic Confederation's 11th Scientific Meeting, Manila, Philippines in 2003.

Abstract

Intracoronal bleaching is a simple, useful procedure for restoring the colour of discoloured root-filled teeth that are not extensively restored. It is important to minimise the extraradicular diffusion of hydrogen peroxide, as excessive levels of hydrogen peroxide in conjunction with existing inflammatory changes in the periodontium predispose the tooth to external root resorption. To keep the levels of extraradicular diffusion of hydrogen peroxide below the safety limit, it is imperative that an effective intermediate base cement of at least 2 mm be placed at the level of the buccal cemento-enamel junction over the root-filling prior to bleaching. The use of 35% carbamide peroxide as the intracoronal bleaching agent seems to combine the safety of sodium perborate together with the efficacy of 35% hydrogen peroxide. As bleaching agents may reduce the composite-tooth bond of some adhesive systems, the post-bleaching composite restoration should be delayed for at least three weeks.

By Christopher Duigou, University of Western Australia.

Discuss The Prevention And Management Of Procedural Errors During Endodontic Treatment

Abstract

Procedural errors in endodontics, or alternatively, any mistake that occurs at some point in the process of root canal treatment of a tooth can be a result of factors which the operator has both control, as well no control over. For the majority of these mistakes the operator is at fault, either through lack of operator knowledge or concentration during treatment. This is fortunate in the sense that this means these errors are, in the main, preventable. Keeping in mind that dentists, being human, will commit errors at some point in their career, knowledge as to how to manage these situations is indispensable. As there exists a multitude of possible procedural errors, the areas that are going to be focused on are those which occur more commonly, and those with more disastrous sequelae. These include: diagnosis, radiography, canal access, instrumentation, obturation, tooth isolation and coronal seal.

Literature Review

By Sajeew Koshy, MBA, MDS and Robert M. Love, MDS, PhD, FRACDS, Department of Oral Diagnostic and Surgical Sciences, School of Dentistry, University of Otago, Dunedin, New Zealand.

Address for correspondence: Associate Professor Robert M. Love, Head of Department, Department of Oral Diagnostic and Surgical Sciences, School of Dentistry, University of Otago, PO Box 647, Dunedin, New Zealand.

Email: robert.love@dent.otago.ac.nz

Endodontic Treatment In The Primary Dentition

Abstract

A number of factors are involved in the development of pulp and periapical disease in primary and permanent teeth, with dental caries being the main factor. Although these factors are similar, the clinical management of a primary or permanent tooth with pulp or periapical disease may be quite different. This is based mainly on the differences between the two types of teeth, with primary tooth longevity, coronal structural integrity, root canal morphology, and root anatomy being important features to be taken into account when treatment planning. This paper reviews some aspects of primary teeth and the various treatment options for the management of pulp and periapical disease.

By Juan C. Villegas, BDS; Takatomo Yoshioka, DDS, PhD; Chihiro Kobayashi, DDS, PhD and Hideaki Suda, DDS, PhD.

Pulp Biology and Endodontics, Graduate School, Tokyo Medical and Dental University.

Address for correspondence: Dr Juan Camilo Villegas, Pulp Biology and Endodontics, Graduate School, Tokyo Medical and Dental University, 5-45 Yushima 1-chome, Bunkyo-Ku, Tokyo 113-8549, Japan.

Email: camilo.endo@tmd.ac.jp

Frequency Of Transverse Anastomoses With And Without Apical Communication In Japanese Population Teeth

Abstract

The aim of this study was to describe and measure the frequency of transverse anastomoses with and without an apical communication in Japanese population teeth.

One hundred and twenty-three extracted teeth from Japanese people were used in this study. The sample consisted of: 63 mandibular first molars, 30 maxillary first molars and 30 maxillary first premolars. Access openings were made through the crowns to the pulp chamber and India ink was injected into the coronal pulp space and vacuumed from the apical end. The teeth were cleaned and digital micrographs taken from several angles to identify transverse anastomoses.

Fourteen teeth had only one canal and 81 teeth out of 109 (74%) had transverse anastomoses including 6 teeth (5.5%) that had an apical communication. Most of the anastomoses (50) were located in the middle portion of the canal and 22 (20%) teeth showed multiple anastomoses.

Special attention must be taken after resection of roots with apparent multiple canals. The potentially exposed exits and/or isthmuses should be taken into consideration during surgical endodontic treatment.

By Rafael Brandão Ferreira, DDS; Edson Alfredo, DDS, MSc; Marcos Porto de Arruda, DDS, MSc; Yara Teresinha Correia Silva Sousa, DDS, PhD and Manoel D. Sousa-Neto, DDS, PhD.
Faculty of Dentistry, University of Ribeirão Preto, Ribeirão Preto, SP, Brazil.

Address for correspondence: Manoel D. Sousa-Neto, R. Célia de Oliveira Meirelles, 350, 14024-070, Ribeirão Preto, SP, Brazil.

Email: sousanet@unaerp.com

Histological Analysis Of The Cleaning Capacity Of Nickel-Titanium Rotary Instrumentation With Ultrasonic Irrigation In Root Canals

Abstract

This study evaluated, histologically and morphometrically, the cleaning capacity of rotary instrumentation in root canals using the Profile system with ultrasonic irrigation. Twelve single-rooted mandibular incisors were divided randomly into three groups according to the irrigation method tested. The canals in the teeth were instrumented using Orifice Shapers, taper 0.6 and 0.4 in the cervical third, and up to a #35 file in the apical third. One per cent sodium hypochlorite was used as the irrigating solution. Group 1: canals were irrigated with 5 ml of solution, using a Luer-Lok syringe, between each file. Group 2: canals were irrigated with the solution and instrumented using ultrasound for 1 min between each file. Group 3: canals were irrigated with 5 ml of solution with Luer-Lok syringe, between each file, and final irrigation using ultrasound for 3 min. After chemo-mechanical preparation, the apical thirds of the teeth were submitted for histological processing. Morphometric analysis was performed using an optical microscope with 40x magnification and a grid. The results showed statistical difference at the 5% level between the methods used for irrigation. Rotary instrumentation with Profile system NiTi files and ultrasonic irrigation for 3 min was more effective in cleaning root canals when the different methods were compared.