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TRAUMA; ENDODONTICS

Conservative endodontic treatment of teeth fractured in the middle or apical part of the root

Cvek M, Mejäre I *et al.* *Dent Traumatol* 2004; **20**: 261–269

Root canal treatment of the coronal fragment of a non-vital, root-fractured tooth with calcium hydroxide, followed by filling with gutta-percha (GP), resulted in 86% of teeth healing.

There is little reported evidence on management of the rare condition of root fracture in non-vital incisors. Over a 40 yr period, 127 such teeth were treated in a Stockholm clinic, and 29 were excluded from this study for stated reasons.

This left (a) 17 teeth in which the coronal fragment canal was cleaned and filled with GP, (b) 7 in which both fragments were so treated, (c) 6 with the coronal fragment root filled with GP and surgical removal of the apical fragment, and (d) 68 where the coronal fragment was treated first with calcium hydroxide and later with GP and the apical fragment left untreated. In Groups (a), (b) and (d), 13 teeth were later retreated as, and included in Group (c). Five vital teeth with both root and crown fractures were also treated with partial pulpotomy.

After mean follow-up of 5.5 yrs, respective healing rates in the 4 non-vital groups were 76%, 0%, 68% and 86%. All 5 vital teeth healed.

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ENDODONTICS

A 5 yr clinical investigation of second mesiobuccal canals in endodontically treated and retreated maxillary molars

Wolcott J, Ishley D *et al.* *J Endodon* 2005; **31**: 262–264

The presence of an undiscovered second mesiobuccal canal (MB2) may adversely affect prognosis.

This study extends by 3 yrs an earlier report on 1,873 consecutive maxillary molars either treated or retreated over a 2 yr period, and a total of 5,616 teeth were examined clinically and radiographically by 6 experienced endodontists.

MB2 canals were found in 58% of 2,814 initially treated first molars, and 66% of 764 retreated ones ($P < 0.0001$). For second molars, respective figures were: 34% of 1,845 and 40% of 193 ($P = 0.13$). After controlling for molar type, the overall incidence of MB2 was associated with type of treatment (Mantel Haenszel test: $P < 0.0001$).

The authors note that it is not possible to prove experimentally that an untreated MB2 canal may cause treatment failure, but their findings are supportive of this hypothesis.

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ORAL SURGERY; PERIODONTICS

Management of mandibular third molar extraction sites to prevent periodontal defects

Dodson TB *J Oral Maxillofac Surg* 2004; **62**: 1213–1224

Following lower third molar removal, distal second molar attachment levels (AL) and probing depths (PD) improved, without the need for adjunctive treatment.

Adjunctive treatments with demineralised bone powder (DBP) or guided tissue regeneration (GTR) have been suggested for improvement of the second molar (M2) distal periodontal condition, where third molars (M3) have been extracted. In this study, 12 subjects had one M2 randomly assigned to DBP and the other as control following extraction of both M3s, and a further 12 had GTR randomly assigned in the same way. Three other patients dropped out.

In all cases, mean PDs and ALs improved significantly after extraction, by 2 to 4 mm. There were no significant differences between DPB and control, between GTR and control, or between DPB and GTR. There were 2 complications in DPB treatment sites, and 3 in GTR sites, but none in control sites. The author suggests that there is no advantage to either adjunctive treatment in this situation.

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INFECTION CONTROL

Microbiological evaluation of dental unit water systems in general dental practice in Europe

Walker JT, Bradshaw DJ *et al.* *Eur J Oral Sci* 2004; **112**: 412–418

In 7 European countries, about half of tested units had significant levels of contamination.

Dental unit water supplies (DUWS) in dental hospitals can harbour a variety of opportunistic pathogens, including *Legionella*, *Mycobacterium*, *Pseudomonas* and *Candida*. However, little is known about the risks in general dental practice. In this study 237 representative DUWS were examined in the UK, Ireland, Greece, Spain, Germany, Denmark and the Netherlands.

In source water, median bacterial counts were significantly lower in UK, Spain and Ireland than in Denmark, Greece and the Netherlands, with Germany in between these 2 groups. Total viable counts (TVC) in DUWS water lines was significantly lower in Spain than other countries. In air rotor lines, TVCs were lowest in Spain and highest in the Netherlands.

Legionella was identified in some Danish and Spanish samples and Greek biofilm samples, but not in other countries; *Mycobacterium* was present in high quantities in Danish and Greek samples, but completely absent only in the UK. Blood traces were detected in about 1/5 of samples in Greece and Ireland, but were absent in other countries. The authors consider it unsatisfactory that half of all units exceeded the current ADA limit for bacterial contamination.

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