endodontic and orthodontic treatments. The case report presents a multidisciplinary treatment protocol for an extrusively luxated and malpositioned tooth which involve endodontic, orthodontic, and esthetic restorative treatments. It is true that this case was written mostly from the endodontic point of the view. The orthodontic intrusion of the right incisor tooth was performed by an experienced orthodontist (the third author) in this case. He stated that orthodontic intrusion of a traumatically extruded tooth with a month's delay is a simple case for orthodontists and the removable apparatus used in this case is not very specific. On the other hand, it is understandable that the orthodontic intrusion was initiated immediately after the completion of root canal treatment.

Fourthly, the readers questioned the two visits technique which was employed for the treatment of the case. They stated that the one visit endodontic treatment of teeth must have been employed in the case because one visit treatment offers many potential advantages as it is less time consuming, less painful and less traumatic. They also criticize the use of interim calcium hydroxide disinfection for just 1 week as a technique not supported in the literature. In the report, there are two endodontically treated teeth with different pulp diagnosis. First, we generally treat the vital cases in one visit. In the case, we treated the vital left incisor tooth in two visits because of the prolonging treatment procedures of both teeth at the first appointment. Secondly, in light of published data, we generally prefer to treat the teeth with necrotic pulps in two visits associated with interim placement of calcium hydroxide combinations for at least 1 week. One week interim placement of calcium hydroxide combinations is an established technique for disinfection of root canals (3, 4). In a study by Sjögren et al. (5) it was shown that 1 week calcium hydroxide dressing efficiently eliminated bacteria which survived after biomechanical instrumentation of the root canal. The statistical study by Sathorn et al. (6) covered 251 teeth from eight studies and concluded that calcium hydroxide has limited effectiveness (i.e., effective but minimally) in eliminating bacteria from root canals. However, a previous similar study (7) covered 164 teeth from five studies (these studies used also by Sathorn et al.) and recommended that calcium hydroxide remains the best medicament available to reduce residual microbiota flora further. We think that before quitting the use of two visits technique associated with calcium hydroxide, we should wait and see the results of new studies which may show no statistical differences between both techniques, thus suggesting that calcium hydroxide use has no significant effect in the treatment of infected teeth.

Finally, the readers argue that the case report had no conclusion in the discussion part. And, there was no comment about the treatment success on 1-year follow-up radiograph and about the importance of early treatment in extrusive luxations. The diagnosis and treatment protocol of extrusive luxations in early and delayed cases was based on Andreasen and Andreasen (8) and Andreasen et al. (9) There is a detailed background about the extrusive luxations in the introduction of the article. We followed the guidelines for the treatment of the case. So, there was no need to repeat the background as a conclusion. The readers can see the radiographical evaluation about the treatment success at the 1-year follow-up in the case report section of the article.

Rüstem Kemal Sübay

Department of Endodontics, School of Dentistry, İstanbul University, İstanbul, Turkey

References

- Sübay RK, Kayatas M, Caniklioğlu C. Delayed multidisciplinary management of an extrusively luxated maxillary central incisor. Dent Traumatol 2007;23:82–4.
- Alacam A, Ücüncü N. Combined apexification and orthodontic intrusion of a traumatically extruded immature incisor. Dent Traumatol 2002;18:37–9.
- Waltimo T, Trope M, Haapasalo M, Ørstavik D. Clinical efficacy of treatment procedures in endodontic infection control and one year follow-up of periapical healing. J Endod 2005;31:863–6.
- Siqueira JF, Magalhaes KM, Rocas IN. Bacterial reduction in infected root canals treated with 2.5% NaOCl as an irrigant and calcium hydroxide/camphorated paramonochlorophenol paste as an intracanal dressing. J Endod 2007;33:667–72.
- Sjögren U, Figdor D, Spangberg L, Sundqvist G. The antimicrobial effect of calcium hydroxide as a short-term intracanal dressing. Int Endod J 1991;24:119–25.
- Sathorn C, Parashos P, Messer H. Antibacterial efficacy of calcium hydroxide intracanal dressing: a systematic review and meta-analysis. Int Endod J 2006;40:2–10.
- Law A, Messer H. An evidence-based analysis of the antibacterial effectiveness of intracanal medicaments. J Endodon 2004;30:689–94.
- Andreasen FM, Andreasen JO, editors. Luxation injuries. In. Textbook and color atlas of traumatic injuries to the teeth. Copenhagen: Munksgaard; 1993. p. 315–82.
- Andreasen JO, Andreasen FM, Skeie A, Hjorting-Hansen E, Schwartz O. Effect of treatment delay upon pulp and periodontal healing of traumatic injuries – a review article. Dent Traumatol 2002;18:116–28.

A retrospective evaluation of crown-fractured permanent teeth treated in a pediatric dentistry clinic

I have just received the latest issue of *Dental Traumatology* (August 2007) and read the article by Güngör et al., 'A retrospective evaluation of crown-

Letters to the Editor

fractured permanent teeth treated in a pediatric dentistry clinic' (1). The article troubles me because of the extremely high reported incidence of complications requiring endodontic treatment. When I look at the data, I can see that the authors have not taken concomitant luxation injuries into consideration. This in my opinion is a gross error in method. My own published research has demonstrated that this factor alone will significantly influence the final outcome (in my data: approx. 1% PN and 3% PCO). And it is this factor alone - ignoring concomitant luxations – that makes crown fractures (alongside root fractures) one of the most overtreated injury types. I think it is unfortunate that the reviewer did not pick up on this. But publication of such data promotes the misconception that crown fractures require endodontic therapy, when in fact it is the luxation injury that necessitates this treatment.

Frances M. Andreasen, DDS, dr.odont. Specialist Consultant in Dental Trauma, Copenhagen, Denmark e-mail: francesbluetooth@mail.dk

Reference

1. Güngör HC, Uysal S, Altay N. A retrospective evaluation of crown-fractured permanent teeth treated in a pediatric dentistry clinic. Dent Traumatol 2007;23:211–7.

Response to A retrospective evaluation of crown-fractured permanent teeth treated in a pediatric dentistry clinic

I would like to express our gratitude to Dr Andreasen for her interest in our recent article (1). Dr Andreasen emphasizes on concomitant luxation injuries and expresses her concerns that these injuries have not been taken into consideration in the study protocol. In fact, as it is written in the 'Patients and methods' section of the article, 'only' uncomplicated (enamel-dentine) and complicated crown-fractured teeth were included in the study. However, this sentence could have been written more clearly to avoid misconceptions as stated by Dr Andreasen. The results of our study indicate a dramatic late referral rate. Only 53% of the study samples were referred to our clinics in less than 7 days after the traumatic injury. The delay in seeking dental care after a traumatic injury might have masked underlying concomitant luxation injury. Although the possibility of existing concomitant injury cannot be ruled out, it is sometimes impossible to make an accurate diagnosis of the exact clinical situation with respect to luxation injury especially in a late presenting case. This condition has been discussed as a contributing factor for the high rate of pulp necrosis observed in the study. I hope this information is useful to satisfy Dr Andreasen's concerns.

H. Cem Gungor, DDS, PhD Associate Professor, Department of Pediatric Dentistry, Hacettepe University Faculty of Dentistry, 06100 Ankara, Turkey Tel.: +90 312 3052281 Fax: +90 312 3243190

e-mail: hgungor@hacettepe.edu.tr

Reference

1. Güngör HC, Uysal S, Altay N. A retrospective evaluation of crown-fractured permanent teeth treated in a pediatric dentistry clinic. Dent Traumatol 2007;23:211–7.

Development of Ankylosis in permanent incisors following delayed replantation and severe intrusion

Dear Editor,

The subject addressed in the article 'Development of ankylosis in permanent incisors following delayed replantation and severe intrusion' by Campbell et al. (1) is of extreme relevance as dental traumas are more likely to occur in children, and the practitioners should be able to treat such injuries. However, some questions have been raised.

We believe that the diagnostic methods used in that article, namely, Periotest[®] and Miller's index could be cited in the *objective* section. It seemed to us that the authors aimed to propose different and efficient methods for diagnosing those cases of trauma resulting in dental ankylosis and then compare them.

Regarding the first case report, however, it was not mentioned where the tooth had been stored during the extra-oral period, thus raising questions on both prognosis and indication for replantation. It is possible that ankylosis was an outcome expected by the authors, since teeth kept out of aqueous medium are more likely to be ankylosed (2).

Regarding the second case report, the authors had mentioned that they would await a further improvement of the periodontal ligament so that the root canal could be filled later. According to the literature (3, 4), however, dental ankylosis is well known to have no improvement process, thus making it difficult to identify when the root canals would be filled (5).

Finally, the device suggested by the authors for diagnosing ankylosis, namely, Periotest[®], is contraindicated in those cases of acute pulpitis, acute pericoronaritis, and dental traumas (6). Therefore, This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.