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LETTER TO THE EDITOR

Incorrect citation suggests an opinion opposite to our conviction: a clarification

Dear Editor,

In a recent article (1), some of our publications on tooth avulsion were cited (2, 3). However, our publications are cited to support statements that are just the opposite of that what we have written. We therefore want to clarify the following points:

1. We do not consider a delay of 20–30 min between injury and dental treatment 'ideal', for two reasons: (i) more than 5–10 min extraoral dry storage inflicts damage to the periodontal ligament (PDL) cells to such an extent that healing is no longer predictive (4, 5). Therefore, we concluded that 'for a good prognosis avulsed teeth should be stored immediately in a cell-compatible medium' (5); (ii) before replantation, avulsed teeth should be stored in an optimal medium for at least 30 min to use a reconditioning (reconstituting, replenishing) effect on damaged PDL cells (5). Thus, in our opinion, '20–30 min' are too long as well as too short…
2. The authors state that 'Concerning the transport media, it has been proved that the ideal one is the Hanks Balanced Solution [...]', citing two review articles which have been published 6 (6) and 10 years (7) ago. However, such a medium is only useful if it is quickly available at the accident. Hanks Balanced Salt Solution (HBSS) seems to be commercially available in the US for rescuing avulsed teeth. Since several years, a complete cell culture medium is readily available in so-called tooth rescue boxes not only in the States but also in Central Europe. This medium comprises not only certain salts but also amino acids, glucosis and some other ingredients. Today, we use this medium for rescuing (and reconditioning) avulsed teeth as well as storing teeth to be re- or transplanted. In this medium, in a clinical situation, avulsed teeth were stored up to 53 h and successfully replanted, exhibiting functional (=normal) healing (5). Reports on a comparably long storage in a clinical situation have not been published for HBSS. In conclusion, today there are media that are not only theoretically available: at the moment in Germany all schools and all public pools are equipped with tooth rescue boxes. The actual media also have the potential of keeping PDL cells vital and viable for more than 24 h. If media for storage of isolated teeth are discussed (also) actual literature should be used; 10 years is quite a long time in nowadays science.
3. We completely disagree with the statement 'Endodontic treatment should be performed only when clinical and X-ray controls of the tooth with incomplete root development indicate a necrotic pulp'. While our publication was cited to support this statement, we wrote the opposite: 'To prevent any endodontically related complications the immediate extraoral insertion of posts is now used in our clinics also in immature teeth that have been rescued in a physiologic way' (8). We had used that immediate treatment in former years for avulsed immature teeth in 'hopeless' conditions, without the chance of revascularization – and it was successful: infection-related complications were prevented, and not any tooth loss was dictated by an infection. With a high chance of pulp necrosis and infection-related complications even in teeth which had been rescued in good conditions we do not dare any more waiting for revascularization – and taking the risk of loosing many teeth because of uncontrollable infections. The strategy of a preventive endodontic treatment also in immature teeth and the method of an extraoral retrograde insertion of posts may be discussed or questioned, but we want to point out that we do not support at all, as is implicated by the citation, the conventional approach of wait, see, and ... loose;-). This is addressed in detail in our publication. The preventive effect of an early endodontic treatment is (again) confirmed by a publication in the actual issue of *Dental Traumatology* in which it is (again) proven that a delay in the commencement of an endodontic treatment results in a higher rate and an earlier onset of infection-related complications (9). There is a clear relation between infection-related complications and the commencement of an endodontic treatment: immediate better than 10 days better than 20 days better than …

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Response from the author

Dear Editor,

Allow me, please, with the following text to provide an answer to the letter that you have received concerning incorrect citations in our article:

Tzigkounakis V, Merglova V, Hecova H, Netolicky J. Retrospective clinical study of 90 avulsed permanent teeth in 58 children. *Dent Traumatol* 2008; 24:598–602.

Indeed in our article (1) is stated: 'The most critical factor for a successful replantation is the transport medium in which the avulsed tooth is stored until the transport of the child to the dentist and the extraoral time interval. Extraoral period is the time duration between the traumatic avulsion of the tooth until its replantation and it should be ideally be up to 20–30 min (2–8). In our study, only one tooth was replanted 30 min after the injury and in one case the child replanted the tooth itself at the place of the accident'.

In the authors' article (6–8) is stated: 'Dry storage of isolated teeth rapidly leads to cell death in the PDL adhering to the root (for overview, see 10). This process is slowed down by storage in certain media (milk, saline, saliva) but progressive and inevitable and therefore the storage in these conditions is limited to short periods (8–17)'.

We used the above sentence as a reference, to support our experience and opinion concerning extraoral time. Please, allow us to apologize to authors of (6–8) for incorrect citation of their article. Instead, we should have used as references the ones that were used by authors of (6–8), such as: (9–11).

Concerning extraoral dry time, several studies have been published. Most of them agreed that 20 or – in other cases – 30 min is the maximum time limit that could allow us to expect better tissue healing after tooth replantation. What we really wanted to emphasize in our study, it was the fact that among 90 avulsed teeth, only one was replanted within 30 min, indicating poor knowledge on management of dental avulsions.

Concerning the second point: in our article is stated among all: 'Concerning the transport media, it has been proved that the ideal one is the Hanks Balanced solution in which the avulsed tooth could be stored even up to 24 h and the vitality of the periodontal ligaments will be saved (12, 13). The citations that are used to support this sentence are indeed 6 and 10 years old review studies. There is no reason for us to question the above citations, even if they are relatively old, as implied by the authors of (6–8).

Finally, concerning the third point of opposition: in our article (1) it is stated: '…… Endodontic treatment should be performed only when clinical and X-ray controls of the tooth with incomplete root development indicate a necrotic pulp'.

In the article (6–8) is described in the introduction part: 'Immature teeth may be revasculated following replantation. Depending on the width of the apical foramen and on the length of the pulp the chance of revascularisation was about 10–50% in avulsed and replanted teeth (17). In case of pulp necrosis the instillation of calcium hydroxide is used to treat the endodontic infection and to induce the formation of an apical hard tissue barier (apexification)…'.

The authors of (6–8) supported the above sentence, using references (14, 15). Instead of using as a reference the articles of authors (6–8), we should have used the same references (14, 15) that the authors of (6–8) have used.

Yours sincerely,

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