Treatment of ankylosed permanent teeth

Abstracted from

de Souza RF, Travess H, Newton T, Marchesan MA.

Interventions for treating traumatised ankylosed permanent front teeth.
Cochrane Database Syst Rev 2010; issue 1

Address for correspondence: Luisa Fernandez Mauleffinch, Review Group Co-ordinator, Cochrane Oral Health Group, MANDEC, School of Dentistry, University of Manchester, Higher Cambridge Street, Manchester M15 6FH,UK. E-mail: luisa.fernandez@manchester.ac.uk

Question: In people who have ankylosed permanent anterior teeth, what treatment options are effective?

Data sources The Cochrane Oral Health Group Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL), Medline, Embase and LILACS . There were no language restrictions.

Study selection Randomised controlled trials (RCT) were considered that compared any intervention for treating displaced ankylosed permanent front teeth in individuals of any age.

Data extraction and synthesis Two independent review authors screened studies in duplicate. Although no studies were ultimately included, the authors had planned to extract data independently and to assess risk of bias following Cochrane Collaboration methods.

Results The search retrieved 77 references to studies. None matched the inclusion criteria and therefore were excluded.

Conclusions There is no evidence from RCT about the comparative effectiveness of the different treatment options for ankylosed permanent front teeth. The lack of high-level evidence for the management of this health problem emphasises the need for well-designed clinical trials.

Commentary

Dental trauma results in numerous sequelae and, in people who sustain a severe injury to the dentition, ankylosis can result with fusion of tooth to surrounding alveolar bone. This can lead to infraocclusion in the growing patient and results in the tooth having a poor long-term survival rate because of progressive resorption. Numerous techniques have been described in the literature to treat the issues raised by the ankylosed tooth. These range in complexity from extraction and provision of a removable prosthesis, to distraction osteogenesis of the surrounding alveolar tissue in order to correctly orientate the tooth.

This paper is based on a Cochrane Review published in the Cochrane Library 2010, issue 1 (see www.thecochranelibrary.com, for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and the Cochrane Library should be consulted for the most recent version of the review.

The authors of this review aimed to assess different treatment options for ankylosed permanent front teeth. As with all reviews published in the Cochrane Library, this study sought RCT for inclusion. These were to be assessed to discover the effect of given treatments on numerous outcome objectives (such as tooth survival, symptom development and participant satisfaction) critical to their success.

The search strategy is to be commended. Database searching was supplemented with searching by hand of those relevant journals (*American Journal of Orthodontics and Dentofacial Orthopedics, Dental Traumatology, International Endodontic Journal*) not already undertaken by the Cochrane Oral Health Group. With no language limitations, a total of 77 studies were deemed "potentially eligible" at this stage. To enhance sensitivity, the relevant authors from these articles were then contacted to enquire about any further published or unpublished trials that could be considered.

Unfortunately, no studies were found that met the inclusion criteria and therefore the review was 'empty'. There was mention of numerous case-reports and series pertaining to various treatment interventions, but no clinical trial could be discovered to support clinical decision making about any particular modality. The conclusions of this review are thus somewhat self-evident. There is a paucity of robust literature on which to base treatment plans for those individuals afflicted with ankylosis of their anterior dentition. It was supposed that difficulty in enrolling sufficient individuals could be seen as a limitation to such research. A multicentred approach to constructing an RCT may overcome this issue and it is such robust trials that are required to identify the most effective treatment approaches. At present, however, the decision lies with the clinician and their experience in treating this condition.

Nicky Stanford

Glasgow Dental School and Hospital, University of Glasgow, Glasgow, Scotland, UK

Practice points

- Little evidence exists to recommend one specific treatment of ankylosis over another, so the decision remains with the clinician and their experience in addressing the issue

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