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[Intervention Review]

Orthodontic treatment for deep bite and retroclined upper front teeth in children

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ABSTRACT

Background

Correction of the type of dental problem where the bite is deep and the upper front teeth are retroclined (Class II division 2 malocclusion) may be carried out using different types of orthodontic treatment. However, in severe cases, surgery to the jaws in combination with orthodontics may be required. In growing children, treatment may sometimes be carried out using special upper and lower dental braces (functional appliances) that can be removed from the mouth. In many cases this treatment does not involve taking out any permanent teeth. Often, however, further treatment is needed with fixed braces to get the best result. In other cases, treatment aims to move the upper first permanent molars backwards to provide space for the correction of the front teeth. This may be carried out by applying a force to the teeth and jaws from the back of the head using a head brace (headgear) and transmitting this force to a part of a fixed or removable dental brace. This treatment may or may not involve the removal of permanent teeth. In some cases, neither functional appliances nor headgear are required and treatment may be carried out without extraction of any permanent teeth. Instead of using a headgear, in certain cases, the back teeth are held back in other ways such as with an arch across or in contact with the front of the roof of the mouth which links two bands glued to the back teeth. Often in these cases, two permanent teeth are taken out from the middle of the upper arch (one on each side) to provide room to correct the upper front teeth. It is important for orthodontists to find out whether orthodontic treatment only, carried out without the removal of permanent teeth, in children with a Class II division 2 malocclusion produces a result which is any different from no orthodontic treatment or orthodontic treatment only involving extraction of permanent teeth.

Objectives

To establish whether orthodontic treatment, carried out without the removal of permanent teeth, in children with a Class II division 2 malocclusion, produces a result which is any different from no orthodontic treatment or orthodontic treatment involving removal of permanent teeth.

Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 23 November 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 4), MEDLINE via OVID (1948 to 23 November 2011), and EMBASE via OVID (1980 to 23 November 2011). International researchers, likely to be involved in Class II division 2 clinical trials, were contacted to identify any unpublished or ongoing trials.

Selection criteria

Trials were selected if they met the following criteria: randomised controlled trials (RCTs) and controlled clinical trials (CCTs) of orthodontic treatments to correct deep bite and retroclined upper front teeth in children.

Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were to be conducted in duplicate and independently by two review authors. Results were to be expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals. Heterogeneity was to be investigated including both clinical and methodological factors.

Main results

No RCTs or CCTs were identified that assessed the treatment of Class II division 2 malocclusion in children.

Authors' conclusions

It is not possible to provide any evidence-based guidance to recommend or discourage any type of orthodontic treatment to correct Class II division 2 malocclusion in children.

PLAIN LANGUAGE SUMMARY

Orthodontic treatment for deep bite and retroclined upper front teeth in children

There is no evidence to recommend or discourage any type of orthodontic treatment to correct the type of dental problem in children where the bite is deep and the upper front teeth are retroclined (tilted toward the roof of the mouth).

It would be useful for an orthodontist to know the best way to treat a child with deep bite and retroclined upper front teeth. There are two main treatment options which orthodontists can use: a removable 'functional' brace, which fits both the upper and the lower teeth, followed by fixed braces or taking out teeth (usually two upper teeth) followed by fixed braces. At present, there is no evidence to show whether orthodontic treatment without taking out teeth in children with deep bite and retroclined upper front teeth is better or worse than orthodontic treatment involving taking out teeth or no orthodontic treatment.