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[Intervention Review]

Replacement versus repair of defective restorations in adults: amalgam

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ABSTRACT

Background

Amalgam is a common filling material for posterior teeth, as with any restoration amalgams have a finite life-span. Traditionally replacement was the ideal approach to treat defective amalgam restorations, however, repair offers an alternative more conservative approach where restorations are only partially defective. Repairing a restoration has the potential of taking less time and may sometimes be performed without the use of local anaesthesia hence it may be less distressing for a patient when compared with replacement. Repair of amalgam restorations is often more conservative of the tooth structure than replacement.

Objectives

To evaluate the effects of replacing (with amalgam) versus repair (with amalgam) in the management of defective amalgam dental restorations in permanent molar and premolar teeth.

Search methods

For the identification of studies relevant to this review we searched the Cochrane Oral Health Group's Trials Register (to 5 August 2013); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2013, Issue 7); MEDLINE via OVID (1946 to 5 August 2013); EMBASE via OVID (1980 to 5 August 2013); BIOSIS via Web of Knowledge (1969 to 5 August 2013); Web of Science (1945 to 5 August 2013) and OpenGrey (to 5 August 2013). Researchers, experts and organisations known to be involved in this field were contacted in order to trace unpublished or ongoing studies. No restrictions were placed on the language or date of publication when searching the electronic databases.

Selection criteria

Trials were selected if they met the following criteria: randomised controlled trial (including split-mouth studies), involving replacement and repair of amalgam restorations in adults with a defective restoration in a molar or premolar tooth/teeth.

Data collection and analysis

Two review authors independently assessed titles and abstracts for each article identified by the searches in order to decide whether the article was likely to be relevant. Full papers were obtained for relevant articles and both review authors studied these. The Cochrane Collaboration statistical guidelines were to be followed for data synthesis.

Main results

The search strategy retrieved 201 potentially eligible studies after de-duplication. After examination of the titles and abstracts, full texts of the relevant studies were retrieved but none of these met the inclusion criteria of the review.

Authors' conclusions

There are no published randomised controlled trials relevant to this review question. There is therefore a need for methodologically sound randomised controlled trials that are reported according to the Consolidated Standards of Reporting Trials (CONSORT) statement (www.consort-statement.org/). Further research also needs to explore qualitatively the views of patients on repairing versus replacement and investigate themes around pain, distress and anxiety, time and costs.

PLAIN LANGUAGE SUMMARY

Metal-based, metallic fillings: is it better to repair or replace faulty metal-based fillings for adults?

Review question

Is it more effective to repair or replace faulty fillings that have been constructed from amalgam (a mixture of various metals and mercury) in molar teeth towards the back of the mouth in adults?

Background

Fillings are used as part of general dental treatment to rebuild teeth after a patient develops tooth decay or damages the surface of their tooth in some way.

Fillings also help to prevent further damage occurring (this can be through further tooth decay under the filling or from impact), but they must be maintained to ensure that the fillings continue to protect what is left of the original tooth. As with any filling material these fillings have a limited life-span.

Traditionally faulty fillings have been replaced, however this approach may involve the loss of further bits of tooth as the cavity is emptied and re-filled.

An alternative approach is to repair the faulty filling. Repairing fillings may take less time, and as some repairs can be performed without the need to numb the area (local anaesthesia), a repair may be less distressing for the patient when compared with the option of replacing the filling. Issues such as pain, anxiety, distress, time and cost are important considerations for dentists as well as patients.

This review aims to compare whether it is better to replace or repair amalgam fillings. The evidence for repair or replacement of resin composite fillings is contained in a separate review.

Study characteristics

This review of existing studies was carried out by the Cochrane Oral Health Group, and the evidence is current up to 5 August 2013.

Key results

No trials were found that were suitable for inclusion in this review.

Quality of the evidence

Currently there is no evidence to support repairing or replacing amalgam fillings for adults.

Further well-conducted research is required before an evidence-based recommendation can be supported.