Second molar distal caries
This evidence summary aims to locate and summarise evidence on the fate of second molars with distal caries related to mesioangular third molars or the attitude of general dental practitioners to restoring these teeth. It does not include detailed descriptions of the studies cited nor does it include information that was not presented in the literature.

The Curious about website encourages dental professionals to raise issues where a review of the available evidence would provide a useful resource for other dental professionals. Where there is a lack of evidence, the topic is considered for research and an award is made available.

These activities are sponsored by the Shirley Glasstone Hughes Fund, a restricted fund within the BDA Trust Fund. The focus of the fund is research into primary care dentistry and aims to generate a body of relevant research for practising dentists.
Key finding

- It appears that no studies have been undertaken on the fate of second molars with distal caries related to mesioangular third molars or the attitude of general dental practitioners to restoring these teeth.
- One case report suggests a bidisciplinary approach to save the second molar and extract the third molar in such circumstances.

Review question

This evidence summary was prepared in response to the following questions:

- What is the fate of second molars with distal caries related to mesioangular third molars?
- What is the attitude of GDPs to restoring these teeth?

Key terms

**Attitude:**
A settled way of thinking or feeling

**Mesioangular:**
One of Winter’s four classification groups for third molars based on the inclination of the longitudinal axis.

**Molar:**
The most posterior teeth on either side of the jaw, totalling eight in the deciduous dentition (two on each side, upper and lower), and usually 12 in the permanent dentition (three on each side, upper and lower). They are grinding teeth, having large crowns and broad chewing surfaces. (Medline MeSH term)

The case for action

Third molars usually erupt between the ages of 18 and 24 years though this upper limit is variable. Prehistorically, when teeth were a vital survival tool, evolution likely favoured their development but as biological and cultural development has occurred jaw sizes have shortened and third molars have become vestigial. This change in jaw size is one of the contributing factors to the third molar frequently becoming impacted. Impaction occurs when a complete eruption into a normal position is prevented although the growth of the root is complete.

Caries in the second molar can develop in the presence of a neighbouring mesioangularly impacted third molar. The impacted tooth leads to the formation of a crevice against the distal surface of the second molar that is difficult to clean through normal brushing and flossing leading to the accumulation of debris and, on occasion, caries development. The prevalence of this type of caries varies with reported cases ranging from 0.3% - 51% though it should be remembered that the settings for these studies may skew the figures.

If caries has been detected, deciding on the fate of a second molar in this situation can be a less than straightforward procedure. As well as the normal considerations for restoring, extracting or monitoring a tooth there are the added complications of poor access to the carious lesion and the vulnerable location. If the second molar is restored and the third molar left, the tooth will remain at risk due to the presence of the impacted tooth and the resulting difficulty to clean. Some practitioners remove the second molar and leave the impacted tooth, while others extract the third molar or both teeth. The carious tooth can be monitored but without optimal monitoring and patient compliance, disease can develop requiring treatment or extraction.
The evidence

It appears that no studies have been undertaken on the fate of second molars with distal caries related to mesioangular third molars and the attitude of general dental practitioners to restoring these teeth. No systematic reviews, meta-analysis or clinical trials were found that specifically address the questions posed. One case report documented the fate of a second molar with distal cervical caries due to a mesioangular third molar. In this instance the second molar was restored following the extraction of the third molar. The authors of the report suggested a bidisciplinary approach to save the second molar in such circumstances. It has been suggested that general dental practitioners seem reluctant to restore second molars with distal caries related to mesioangular third molars until the third molar is removed.

The publication of UK evidence based guidance for the management of third molars (1997 – 2000) has influenced patient management and possibly the occurrence of third molar related second molar caries. Pathological features such as caries as an indication for third molar surgery has increased and third molars are being removed later on in life. However due to the reporting system, an accurate picture of the problem of second molar distal caries due to mesioangular third molars could be difficult to generate.

The lack of data covering second molars with distal caries related to third molars is in contrast with the number of studies reporting the incidence of third molar related pathology and third molar fate. With the reported increase in patients with third molar associated caries in second molars, this topic warrants further research.

Methods

Search strategy

The following resources were searched:

- MEDLINE (Ovid and Pubmed)
- Scopus
- Web of knowledge
- Cochrane library (DARE, NHS EED, HTA Database, Cochrane reviews)
- International Association for Dental Research
- Centre for Reviews and Dissemination
- SciELO
- LILACS

Search terms for Ovid MEDLINE included: molar and dental caries. Equivalent searches were employed for other databases.

Searches were carried out from the earliest date possible and for Ovid was limited to human studies. Hand searching of reference lists and grey literature was also carried out. Studies were included if they covered the fate of second molars with distal caries related to mesioangular third molars and excluded if they covered the fate only of third molars in this situation.

Searches were conducted between March and May 2013.

Results

Twelve articles were obtained as full text; one was retained as covering the topic.

References