Interventions for the treatment of keratocystic odontogenic tumours (Review)

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Interventions for the treatment of keratocystic odontogenic tumours

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ABSTRACT

Background
The keratocystic odontogenic tumours (KCOTs) account for between about 2% and 11% of all jaw cysts and can occur at any age. They are more common in males than females with a male:female ratio of approximately 2:1. Although they are benign, KCOTs are locally very aggressive and have a tendency to recur after treatment. Reported recurrence rates range from 3% to 60%. The traditional method for the treatment of most KCOTs is surgical enucleation. However, due to the lining of the cyst being delicate and the fact that they frequently recur, this method alone is not sufficient. Adjunctive surgical treatment has been proposed in addition to the surgical enucleation, such as removal of the peripheral bone (ostectomy) or resection of the cyst with surrounding bone (en-bloc) resection. Other adjunctive treatments proposed are: cryotherapy (freezing) with liquid nitrogen and the use of the fixative Carnoy's solution placed in the cyst cavity after enucleation; both of which attempt to address residual tissue to prevent recurrence.

Objectives
To assess the available evidence comparing the effectiveness of interventions for the treatment of KCOTs.

Search methods
We searched the following electronic databases: the Cochrane Oral Health Group Trials Register (to 17 March 2015), the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library, 2015, Issue 2), MEDLINE via Ovid (1946 to 17 March 2015) and EMBASE via Ovid (1980 to 17 March 2015). We searched the US National Institutes of Health Trials Register (http://clinicaltrials.gov) and the WHO Clinical Trials Registry Platform for ongoing trials. No restrictions were placed on the language or date of publication when searching the electronic databases.

Selection criteria
Randomised controlled trials comparing one modality of intervention with another with or without adjunctive treatment for the treatment of KCOTs. Adults, over the age of 18 with a validated diagnosis of solitary KCOTs arising in the jaw bones of the maxilla or mandible. Patients with known Gorlin syndrome were to be excluded.

Data collection and analysis
Review authors screened trials for inclusion. Full papers were obtained for relevant and potentially relevant trials. If data had been extracted, it would have been synthesised using the fixed-effect model, if substantial clinical diversity were identified between studies we planned to use the random-effects model with studies grouped by action provided there were four or more studies included in the meta-analysis, and we would have explored the heterogeneity between the included studies.
Main results

No randomised controlled trials that met the inclusion criteria were identified.

Authors' conclusions

There are no published randomised controlled trials relevant to this review question, therefore no conclusions could be reached about the effectiveness or otherwise of the interventions considered in this review. There is a need for well designed and conducted randomised controlled trials to evaluate treatments for KCOTs.

PLAIN LANGUAGE SUMMARY

What is the best treatment for a type of jaw bone cyst called a 'keratocystic odontogenic tumour'?

Review question

This review has been conducted to assess the effects of different interventions for the treatment of a particular type of cyst that occurs mainly in the lower jawbone, called a keratocystic odontogenic tumour (KCOT).

Background

KCOTs are non-cancerous but fast-growing cysts (closed sacs containing either fluid or air) that occur mainly in the lower jawbone. They develop from the remains of a tissue associated with tooth development called the dental lamina. They are quite rare and can occur at any age.

One of the main problems in treating KCOTs is that if they are removed by surgery, they tend to recur. New cysts may form from any cyst lining that remains after surgery. These recurring cysts grow at a rapid rate. Some reports have stated that 6 out of 10 of these cysts will recur after treatment. Treatment to prevent recurrence can lead to large amounts of bone surrounding the cyst having to be removed. This carries major risks (damage to the nerves in the face, and loss of form and function in the face). Currently uncertainty exists regarding the best treatment option.

Study characteristics

Authors from the Cochrane Oral Health Group carried out this review of existing studies and the evidence is current up to 17 March 2015. There were no studies found which met the inclusion criteria for this review.

Key results and quality of the evidence

This review revealed that there is no high quality evidence for the effectiveness of available treatments and there is therefore a need for further research to help clinicians and patients to make informed choices about treatment options.