Extracapsular dissection for benign parotid tumors: a meta-analysis
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CRD summary
This review concluded that superficial parotidectomy and extracapsular dissection resulted in no difference in tumour recurrence or permanent facial paralysis. There was a decrease in transient facial weakness and Frey's syndrome but extracapsular dissection was possibly used for less challenging tumours. The low quality included data may make the authors' conclusions unreliable. Their comments about selection bias were appropriate.

Authors' objectives
To compare the outcomes of superficial parotidectomy to those of extracapsular dissection in the treatment of benign parotid tumours.

Searching
MEDLINE was searched. Search terms were reported. Reference lists of identified studies and PubMed were checked.

Study selection
Studies of any design that compared extracapsular dissection to superficial parotidectomy for the treatment of solitary benign parotid tumours were eligible for inclusion. Studies on people with recurrent tumours were excluded. The outcomes of interest were recurrence of tumour, facial weakness (transient and permanent) and Frey's syndrome.

Some studies included only participants with pleomorphic adenomas. Criteria for deciding which procedure was used varied but included tumour size and characteristics. In some studies the decision was made during the procedure and some patients who were initially undergoing superficial parotidectomy were converted to extracapsular dissection during the procedure. The methods and timing of determining incidence of Frey's syndrome were not reported in the studies.

The authors did not state how many of them performed the study selection.

Assessment of study quality
The authors did not state that they assessed quality.

Data extraction
Date were extracted in order to calculate odds ratios (ORs) and 95% confidence intervals (CI).

Methods of synthesis
Pooled odds ratios and 95% confidence intervals were calculated using a fixed-effect and a random-effects model. Heterogeneity was assessed using the Q statistic.

Results of the review
Nine studies (1,882 participants) were included. One study (41 participants) was prospective and eight (1,841 participants) were retrospective. Study size ranged from 40 to 662 participants. In one study mean follow-up time was unknown and in others it ranged from zero to two years, to 18 years. Dates of publication were from 1979 to 2011.

There was no statistically significant difference between superficial parotidectomy and extracapsular dissection for the outcomes of recurrence rates (eight studies) or permanent facial paralysis (five studies). Compared to superficial parotidectomy, extracapsular dissection was associated with an decrease in incidence of transient facial weakness (OR 0.256, 95% CI 0.174 to 0.377; six studies) and in incidence of Frey's syndrome (OR 0.117, 95% CI 0.071 to 0.191; five studies).

Authors' conclusions
Compared to superficial parotidectomy there was no difference in the rate of tumour recurrence or permanent facial paralysis with extracapsular dissection but extracapsular dissection appeared to be associated with a decrease in
transient facial weakness and Frey's syndrome. There was a possibility that extracapsular dissection was used for less challenging tumours.

**CRD commentary**
The aims of this review were clearly stated in terms of the inclusion criteria. The search was rather limited in terms or sources and search terms. It was unclear whether unpublished studies were sought and whether any language restrictions were applied so it was possible that studies were missed and publication bias may have affected the review. It was unclear whether the methods of the review were aimed at reducing possible reviewer error or bias. Study quality was not assessed.

The methods of synthesis appeared appropriate. Heterogeneity was assessed but not reported. Most of the data came from retrospective observational studies. In at least some of these the choice of intervention was dependent on characteristics of the tumours and on surgeons' choice. As the authors commented, the characteristics of the tumours were likely to have been different in the two treatment groups leading to selection bias.

Questions about the methods of the review, the generally low quality of included data and the possibility of selection bias mean that the authors conclusions may be unreliable. The authors appropriately commented on the possibility of selection bias.

**Implications of the review for practice and research**
**Practice:** The authors stated that although extracapsular dissection should not be seen as a replacement for superficial parotidectomy it appeared safe and potentially advantageous for specific parotid tumours and for experienced surgeons.

**Research:** The authors did not state any implications for research.

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