Different surgical treatments for nasal septal perforation and their outcomes
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CRD summary
This review assessed the outcomes for surgical treatment options for nasal septal perforations, but the results made it difficult to be categorical about the effectiveness of the techniques used. Given the number of methodological shortcomings the reliability of the results of the review may be compromised. However, in light of these, the conclusion was suitably cautious.

Authors' objectives
To assess the literature, and outcomes, on surgical treatment options for nasal septal perforations.

Searching
EMBASE, MEDLINE, British Medical Journal publications, the Cochrane Database of Systematic Reviews, ACP Journal Club, DARE and the Cochrane Controlled Trials Register were searched from 1975 to March 2006; the search terms were reported. The reference lists of retrieved articles were screened for additional studies. Non-English language publications and unpublished studies were excluded from the review.

Study selection
Any study of the surgical treatment of nasal septal perforations that reported the effectiveness of complete closure of the perforation, or the surgical approach used to gain access, were eligible for inclusion. Case studies were included if they had at least 6 patients and had a follow-up period to identify re-perforations. Perforation size varied across the studies from 0.5 to 4.5 cm, as did the position of perforation and flap design. A range of approaches were used, with rhinoplasty (external or open) and closed endonasal being the most common. The duration of follow-up ranged from 3 months to 10 years. The primary outcome was the effectiveness of the surgical intervention in completely closing the perforation.

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

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

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
A narrative synthesis was provided. The narrative grouped studies into two categories: studies that only used local mucosal flaps to close the perforation and those that used both local mucosal flaps and interposition grafts. Tables were used to present summary study characteristics.

Results of the review
Twenty-three case series were included (n=377; range: 5 to 31).

Closure rates ranged from 30.3 to 92% when using local mucosal flaps (5 studies, n=103) and from 67 to 100% when using local mucosal flaps and interposition grafts (18 studies, n=274). There was a great deal of heterogeneity in the variables, and none of the studies contained level one to three evidence based upon categorisation by the Oxford Centre for Evidence-based Medicine.

Authors' conclusions
An extensive range of surgical techniques was evaluated, but the results were rarely significant, making it difficult to be categorical about the effectiveness of the techniques used.

**CRD commentary**
The review question was clear in terms of the intervention and patients, and several relevant databases were searched. However, the exclusion of non-English papers might have led to some important data being omitted and unpublished studies were not specifically sought, therefore both language and publication bias may be present. Reporting of the review process was poor: the methods used to select the studies and extract the data were not reported, therefore it is unclear whether attempts were made to reduce error and bias. In addition, there was no assessment of the methodological quality of the included studies. The narrative synthesis was appropriate given the clinical heterogeneity between the studies. The authors were only able to undertake a minimal synthesis, although the differences between studies that prevented a more formal, and extensive, analysis were discussed extensively. Given the lack of good-quality studies, the potential for missing studies and the lack of reporting of the review process, the reliability of the results of the review may be compromised. However, in light of these shortcomings, the conclusion was suitably cautious.

**Implications of the review for practice and research**
Practice: The authors stated that the onus is on the surgeon to weigh the factors contributing to success, and for each nasal septal perforation they encounter they should choose a suitable method.

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

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.