Open vs laparoscopic repair of full-thickness rectal prolapse: a re-meta-analysis
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CRD summary
The review found that laparoscopic rectopexy was comparable to open repair of rectal prolapse and was safe and effective, but limited evidence and potential bias in the review process made the reliability of the conclusions unclear.

Authors' objectives
To compare the efficacy and safety of laparoscopic rectopexy with open repair of full-thickness rectal prolapse.

Searching
PubMed, EMBASE, CINAHL and The Cochrane Library were searched from January 1990 to August 2008. There were no language restrictions. Search terms were reported. Reference lists of retrieved studies and a Cochrane review were searched.

Study selection
Eligible studies were randomised controlled trials (RCTs) and concurrent and non-concurrent comparative cohort studies of patients (regardless of age or sex) that compared laparoscopic rectopexy with open repair for full thickness rectal prolapse.

In the included studies, rectopexy included both resection and non-resection. Follow-up ranged from one to 59 months.

The authors did not state how many reviewers selected studies for inclusion in the review.

Assessment of study quality
Studies were assessed for quality using guidelines from the Scottish Intercollegiate Guidelines Group and suggestions from a publication by Rangel 2003. Criteria for cohort studies included specified inclusion/exclusion criteria, missing data and drop-outs, intention to treat analyses, blinding, standardised assessment and standardisation of operating techniques/personnel and care. A score of 15 or more was considered good quality, a score of 8 to 14 was fair quality and a score less than 8 was poor quality. Criteria for RCTs included specified inclusion/exclusion criteria, randomisation technique, sample size calculation, baseline comparability, blinding, calculation of sample size, loss to follow-up, intention-to-treat analyses, allocation concealment and type of design.

The authors did not state how many reviewers performed the quality assessment.

Data extraction
Data were extracted on operative time, hospital stay, perioperative morbidity, incontinence, constipation, recurrence and mortality. Standardised mean differences (SMDs) were calculated for continuous data (operative time and hospital stay) and relative risks (RRs) were calculated for binary data (morbidity, incontinence, constipation, recurrence and mortality), each with 95% confidence intervals (CIs). Where standard deviations were not reported, the value was estimated from ranges or the p value.

Two reviewers extracted data separately. Results were confirmed by a third reviewer.

Methods of synthesis
Studies were combined in meta-analyses and summary effect measures calculated, using either inverse variance weights with continuous data or the Mantel-Haenszel method with binary data for the fixed-effect model and the DerSimonian Laird method for the random-effects model. X² was used to assess heterogeneity. The random-effects model was used to display results where significant heterogeneity was identified.

Results of the review
Twelve studies (688 participants) were included in the review: six concurrent cohort studies, five cohort studies with historical controls and one RCT. Two of the cohorts were retrospective; most were prospective. Most of the cohort
studies were of fair quality. The RCT was blinded, had adequate allocation concealment and inclusion/exclusion criteria, no loss to follow-up, unclear randomisation and baseline comparability and no intention-to-treat analysis.

Laparoscopic rectopexy was associated with significantly longer operative time than open repair (SMD 1.63, 95% CI 1.14 to 2.12; 11 studies) but significantly shorter hospital stay (SMD -1.75, 95% CI -2.45 to -1.05; 10 studies). There was no evidence of a statistically significant difference between treatments in perioperative morbidity (RR 0.89, 95% CI 0.47 to 1.67; 11 studies), incontinence (RR 0.88, 95% CI 0.57 to 1.36; three studies), constipation (RR 0.85, 95% CI 0.2 to 3.58; five studies), recurrence (RR 0.68, 95% CI 0.21 to 2.18; 11 studies) and mortality (RR 0.77, 95% CI 0.29 to 2.02; 11 studies).

Substantial heterogeneity was found for the analyses of operative time, hospital stay, perioperative morbidity, constipation, and recurrence.

Authors' conclusions
Laparoscopic rectopexy was comparable to open repair of rectal prolapse and was safe and effective, but limited evidence meant the conclusion should be considered with caution.

CRD commentary
The review addressed a clear research question. Inclusion criteria appeared appropriate. Various relevant sources were searched for eligible studies and there were no language restrictions, but no explicit attempts were made to find unpublished studies and so publication bias could not be ruled out. The authors did not state how many reviewers were involved in study selection and quality assessment, so reviewer error and bias could not be excluded. An appropriate tool was used for quality assessment. One RCT was included and the other studies were concurrent and cohort studies with historical controls; the quality of the studies was considered to be fair. Information on the types of participants included, skill of surgeons and techniques used were not reported, so generalisability of the results was unclear.

Methods used to synthesize studies and assess heterogeneity were appropriate. Substantial clinical and statistical heterogeneity was identified; the authors attempted to explain this finding in terms of differences in operative technique, skill and number of surgeons involved, bowel preparation, previous surgery, patient demographics and observer bias.

The authors' cautious conclusions reflect the evidence presented, but variation and limitations in the quality of the studies and potential bias in the review process made the reliability of the conclusions unclear.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that further research should be undertaken with RCTs that used standardised techniques.

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