Systematic evaluation of surgical strategies for acute malignant left-sided colonic obstruction

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CRD summary
This review aimed to provide guidance on the treatment options for acute left-sided colorectal obstruction. The authors concluded that one-stage procedures appeared better than two- or three-stage procedures, and that stenting appeared a promising treatment option. There are doubts about the reliability of the authors’ conclusions (particularly those relating to morbidity).

Authors' objectives
To provide guidance for clinical practice on the treatment options for acute left-sided colorectal obstruction.

Searching
Cochrane CENTRAL Register (up to 2005), PreMEDLINE (1960-1965), MEDLINE (1966-2006), EMBASE (1974-2006) and DARE (up to March 2006) were searched. Search terms were reported. There were no language restrictions. Included studies were entered into the PubMed related articles function and the science citation index. Reference lists of included studies were also searched.

Study selection
Randomised controlled trials (RCTs) and non-RCTs comparing two or more surgical strategies for the treatment of acute left-sided colorectal obstruction (due to colorectal cancer) were eligible for inclusion. Studies also had to record perioperative mortality and morbidity.

Of the included studies, the majority compared either one-stage with two- or three-stage procedures, or two-stage with three-stage procedures; the remainder compared stenting versus conventional surgery. Participants treated by a one-stage operation had either a colonic segment resection or a total (or subtotal) colectomy; Hartmann’s operation and colostomy were the most common stage procedures. The mean age of the participants ranged from 52 to 77 years.

Two reviewers independently selected studies for inclusion in the review, with disagreements resolved by a third reviewer.

Assessment of study quality
Study quality was assessed using a list of quality items. For RCTs this included: method of randomisation; allocation concealment; blinding of outcome assessors; completeness of follow up; and use of intention-to-treat analysis. For non-RCTs the list included: patient selection (consecutive or selected); description of group allocation (reasons for choice of technique); baseline characteristics and relevant confounders; whether adjustment for confounders was done; and examiner blinding.

Two reviewers independently evaluated study quality, with disagreements resolved either by consensus or a third reviewer.

Data extraction
Outcome data (with 95% confidence intervals (CI) and standard deviations, where available) were extracted. Risk differences and 95% CI were calculated.

Data was extracted by one reviewer and checked by another, with discrepancies resolved by a third reviewer.

Methods of synthesis
Studies were combined in a narrative synthesis, with study details tabulated and their results presented as forest plots without pooled estimates; differences between studies were discussed in the text.

**Results of the review**

Twenty-nine studies (n=2,286) were included in the review. Three were RCTs (n=234) and 26 were non-RCTs (n=2052). Two of the RCTs were of moderate to good quality, but the other was poor. Most of the non-RCTs used consecutive recruitment. Only five described how the surgical strategy was selected (a further nine reported this in part). Five studies addressed potential confounding, but none adjusted the results statistically for differences in important prognostic patient characteristics.

Of the 15 trials comparing one-stage with two- or three-stage procedures the mortality rates in eight were consistently in favour of one-stage surgery (up to a 27 per cent reduction), although only two actually reported a statistically significant difference between the procedures. Six studies reported similar results between the two groups. Only one study reported results favouring two- or three-stage procedures. There was no significant effect on perioperative morbidity rates (9 trials).

Of the studies comparing two- with three-stage procedures, one RCT showed no difference in mortality and four favoured a three-stage procedure. Of the eight studies comparing stenting with no stenting, all non-RCTs favoured stenting for mortality; the one RCT reported no deaths in both groups. Data on morbidity were inconsistent.

**Authors’ conclusions**

In terms of mortality and morbidity, one-stage procedures appear better than two- or three-stage procedures for the treatment of acute left-sided colorectal obstruction, but the quality of the studies underlying this statement is limited. Stenting appears a promising treatment option.

**CRD commentary**

The review addressed a clear question and was supported by appropriate inclusion criteria. Attempts to identify relevant studies in any language were undertaken by searching several relevant databases and checking references, although no specific search was made for unpublished studies. Study quality was assessed, well-reported and was used in interpreting the results of the review. Sufficient study details were provided (via on-line appendices) and an appropriate narrative synthesis of the data was undertaken. Although the review was generally well-conducted, the authors could have acknowledged that their conclusions were often based on very low numbers of outcome events, which possibly reduced reliability. The authors did not assess use of a power calculation in their quality assessment. In addition, the use of p-values for individual studies would have made results easier to interpret (many results deemed to be ‘consistently in favour’ of an intervention appeared to be non-significant). The authors’ conclusions that one-stage procedures seem better than two- or three- stage procedures in terms of morbidity is not supported by the data presented. These caveats cast some doubt on the reliability of authors' conclusions.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors stated that stenting seems a logical focus for future evaluation.

**Funding**

Not stated.

**Bibliographic details**


**PubMedID**

17968980
Record Status
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.