

Review

Current management of acute malignant large bowel obstruction: a systematic review

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Systematic review;
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Colonic stent

Abstract

BACKGROUND: The management of colonic obstruction has changed in recent years. In distal obstruction, optimal treatment remains controversial, particularly after the appearance and use of colonic endoluminal stents. The purpose of this study was to review the current treatment of acute malignant large bowel obstruction according to the level of evidence of the available literature.

METHODS: A systematic search was conducted in PubMed, MEDLINE, Embase, and Google Scholar for articles published through January 2013 to identify studies of large bowel obstruction and colorectal cancer. Included studies were randomized and nonrandomized controlled trials, reviews, systematic reviews, and meta-analysis.

RESULTS: After a literature search of 1,768 titles and abstracts, 218 were selected for full-text assessment; 59 studies were ultimately included. Twenty-five studies of the diagnosis and treatment of obstruction and 34 studies of the use of stents were assessed.

CONCLUSIONS: In view of the various alternatives and the lack of high-grade evidence, the treatment of distal colonic obstruction should be individually tailored to each patient.

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Acute large bowel obstruction is the initial presentation in 7% to 29% of patients with colorectal cancer and represents 1 of the more common causes of surgical emergency.¹ The most common location for obstructing colorectal cancer is the sigmoid colon, and >75% of tumors are located distal to the splenic flexure.²

Emergency presentation of colorectal cancer is more common in advanced stages of the disease, and frequently

occurs in elderly patients, with significant associated comorbidities.³

Although resection of the tumor is the “gold standard” for the treatment of malignant colonic obstruction, in the past 2 decades, self-expanding endoluminal colonic stents have been introduced in the therapeutic armamentarium as the initial maneuver in the management of distal colonic obstruction, aiming to relieve the obstruction and avoid emergency surgery. Surgery is proposed as a second-stage definitive treatment once the acute obstruction has been resolved. Several studies have shown the feasibility of managing acute malignant obstruction by colonic stenting. However, there is ongoing debate on the advantages of this strategy compared with emergency surgery in this scenario.

Drs Frago and Biondo contributed equally to this work.

The authors declare no conflicts of interest.

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The aim of this study was to perform a systematic review of the current treatment of acute malignant large bowel obstruction according to the level of evidence of the available literature, because there is still controversy, especially in the treatment of distal colonic obstruction.

Methods

Search strategy

A comprehensive search was performed for diagnosis and treatment studies of large bowel obstruction and colorectal cancer.

The primary aim of the study was to analyze, on the basis of current evidence, results from the treatment of both proximal and distal malignant colonic obstruction in patients in whom either emergency tumor resection was performed or stents were placed in the emergency department and resection was deferred to elective surgery. We conducted a subanalysis of the diagnostic method of obstruction and of the survival benefit if colonic stents were placed both as a “bridge to surgery” or for palliative patients.

The term “bridge to surgery” has been defined as the placement of a stent as a first treatment of the obstruction syndrome followed by delayed oncologic surgery.

A systematic search was performed in PubMed, MEDLINE, Embase, and Google Scholar for articles published from January 1985 through June 2013. Medical Subject Headings used were “colectomy,” “stents” or “SEMS” (self-expanding metallic stents), and “management,” combined using the “AND” operator with “colorectal cancer obstruction” or “large bowel cancer obstruction.” Other search terms included were “colonic stent,” “colorectal stent,” “large bowel obstruction,” “colonic obstruction,” “obstructed left and right colon,” and “Hartmann’s procedure.” All articles reviewed were written in English. All abstracts were reviewed, and the relevant ones were selected.

Inclusion and exclusion criteria

Case reports were excluded, as well as articles on elective surgery, perforated colon cancer, noncomparative studies, nonresective treatment of the primary tumor, proximal stenting, benign or extraluminal obstruction, and palliative local treatments such as high-dose-rate intraluminal brachytherapy or yttrium-aluminum-garnet laser treatment. Studies that did not differentiate the results of palliative from curative treatment were also excluded.

For the evaluation of the use of stents, only narrative reviews, systematic reviews, meta-analysis, and randomized prospective trials were evaluated. The observational studies including “survival” as a keyword after “stent placement” were included even if the indication for stenting was palliative.

Only studies analyzing ≥ 1 of the following items were selected for evaluation: prognostic factors, diagnostic

methods, treatment, resective surgery, stent, postoperative morbidity and mortality, and survival.

After identifying the relevant titles, the studies were reviewed independently by 4 reviewers (each pair of reviewers checked half of the study items), and data from comparative studies and randomized clinical trials were extracted. When different studies described the same item, the level of evidence was evaluated. Discordance between reviewers was resolved by discussion or consultation of a third reviewer.

Because of the extensive literature published in the past few years on stents, we have divided this section into different paragraphs to ease the reading comprehension: a brief general introduction based on narrative reviews, palliative treatment, bridge to surgery, and systematic reviews and meta-analysis.

Data extraction

The present systematic review was performed according to the guidelines from the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) group.⁴ Because of the small number of randomized controlled trials (RCTs) on obstructing colon cancer, the assessment of the quality of many of the included studies was based on the list of 12 items proposed by the Methodological Index for Non-Randomized Studies.⁵

The quality of evidence and the strength of recommendations were applied using the proposal of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system.⁶ Quality of evidence was assigned to several of the analyzed parameters.

Results

The general literature search identified a total of 1,768 publications. The abstracts were reviewed, resulting in 218 articles to be assessed for eligibility, which were subjected to the modified Methodological Index for Non-Randomized Studies tool. Therefore, 59 articles were chosen for review: 11 randomized studies, 3 systematic reviews and meta-analyses, 2 meta-analysis, 6 systematic reviews, 7 narrative reviews, 21 cohort studies, 4 case series, 2 case-control studies, 2 society consensus documents, and 1 propensity score analysis.

On the basis of previously described criteria, 159 full-text articles were excluded. Reasons for exclusion were as follows: 6 studies included elective treatment, 19 studies included patients with perforations and obstructions, 14 studies did not differentiate between bridge and palliative stenting treatment, and 120 studies did not report survival analysis of the stent groups.

Fig. 1 shows a flowchart of the selection of articles. Included studies for the systematic review are reported in Tables 1 and 2.

Diagnosis and staging

The clinical presentation of a colonic obstruction includes abdominal pain, abdominal bloating or distension,

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