Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

# General

## Guideline Title

Surgery or stenting for colonic obstruction: a practice management guideline from the Eastern Association for the Surgery of Trauma.

## Bibliographic Source(s)

Ferrada P, Patel MB, Poylin V, Bruns BR, Leichtle SW, Wydo S, Sultan S, Haut ER, Robinson B. Surgery or stenting for colonic obstruction: a practice management guideline from the Eastern Association for the Surgery of Trauma. J Trauma Acute Care Surg. 2016 Apr;80(4):659-64. [14 references] PubMed

## Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

# Recommendations

## Major Recommendations

The strength of recommendation (strong or weak/conditional) is defined at the end of the "Major Recommendations" field.

Population, Intervention, Comparator, and Outcome (PICO) Question 1

In adult patients with colonic obstruction (malignant or benign) (P), should surgery (I) or endoscopic stenting (C) be performed to decrease mortality (O)?

PICO Question 2

In adult patients with colonic obstruction (malignant or benign) (P), should surgery (I) or endoscopic stenting (C) be performed to decrease emergency, nonplanned procedures (O)?

Recommendations

The Eastern Association for the Surgery of Trauma conditionally recommends endoscopic, colonic stenting (if available) as the initial therapy for colonic obstruction. In their review, stent use was associated with decreased mortality and rates for emergency, nonplanned procedures to include reoperations. This conditional recommendation is limited to those with malignancy because of the lack of literature supporting this practice in benign colonic disease. Moreover, their review supports expedient intervention when the diagnosis of colonic obstruction is made because of the high complication and mortality rates associated with ischemic perforation (see Figure 6 in the original guideline document).

Definitions

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Definition of Strong and Weak Recommendation

| | Strong Recommendation | Weak/Conditional Recommendation |
|---|---|---|
| For patients | Most patients would want the recommended course of action. | Most patients would want the recommended course of action, but many would not. |
| For clinicians | Most patients should receive the recommended course of action. | Different choices will exist for different patients, and clinicians should help patients decide. |
| For policy makers | Recommended course should be adopted as policy. | Considerable debate and stakeholder involvement needed to make policy. |

### Clinical Algorithm(s)

None provided

## Scope

### Disease/Condition(s)

Colonic obstruction (malignant or benign)

### Guideline Category

Treatment

### Clinical Specialty

Colon and Rectal Surgery

Emergency Medicine

Gastroenterology

### Intended Users

Physicians

### Guideline Objective(s)

To perform a systematic review with associated meta-analyses to create a guideline that may be used to direct decision making in the care of patients with colonic obstruction

### Target Population

Adult patients with colonic obstruction (malignant or benign)

### Interventions and Practices Considered

1. Surgery

2. Endoscopic stenting

## Major Outcomes Considered

- Mortality
- Emergency, nonplanned procedures

# Methodology

## Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Searches of Unpublished Data

## Description of Methods Used to Collect/Select the Evidence

Patients and Methods

Study Eligibility

Inclusion criteria consisted of articles published in the English language reporting adult patients 18 years or older, who required hospitalization for the management of colonic obstruction with surgery or endoscopic stenting. The reviewers excluded meta-analyses, case reports, letters, and reviews lacking original data.

Intervention and Comparators

The reviewers only included studies directly comparing stenting with emergency, nonplanned surgery.

Critical Outcome

As per Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology, outcomes were chosen by the team and rated in importance from 1 to 9, with scores of 7 to 9 representing critical outcomes after intervention for colonic obstruction. The critical outcome was mortality, rated a score of 9.

Secondary Outcome

Emergency, nonplanned procedures were selected as a secondary outcome because of a rated score of 7. Other outcomes considered but excluded were renal failure, length of stay, and hospital cost because of ratings of lower than 7.

Information Sources

Two professional librarians conducted a systematic search using the PubMed, EMBASE, and the Cochrane Library databases of published studies. The search was last run on January 2, 2015, and used the following Medical Subject Headings (MeSH) terms: (("Stents"[Mesh] OR stent*[tiab]) OR ("surgery"[tiab] OR surgical*[tiab] OR "surgery" [Subheading: NoExp] OR "Digestive System Surgical Procedures"[Mesh])) AND (("Colon"[Majr] OR "colon"[tiab] OR "colonic"[tiab]) AND ("Intestinal Obstruction"[Mesh:NoExp] OR obstruct*[tiab])) AND ("mortality" [Subheading] OR "mortality"[tiab] OR death*[tiab] OR survival[tiab]) AND ("Comparative Study" [Publication Type] OR compare*[tiab] OR compari*[tiab]). In addition to the electronic search, the reviewers hand-searched the bibliographies of recent reviews and articles accepted for this study and reviewed the ClinicalTrials.gov registry. All studies found from 1990 until the last date of the search were considered. The last search was performed in January 2015.

Selection of Studies

After completing the electronic literature search, two independent reviewers screened titles and abstracts, applying the a priori Population, Intervention, Comparator, and Outcome (PICO) inclusion criteria. Any disagreement on inclusion was resolved by consensus. The resulting studies then underwent full-text review, again by two independent reviewers, to determine appropriateness for inclusion.

## Number of Source Documents

Initially, the search yielded 210 studies. Title-only review excluded 102 articles. Abstract review excluded another 71 articles, leaving 37 articles for full-text review. Of those 37 articles, 6 were randomized controlled trials (RCTs). These RCTs were included in the final qualitative review (see Figure 1 in the original guideline document for a CONSORT diagram detailing the search and included articles in the review). The reviewers were unable to find literature that addressed stent use in benign disease; however, they included two articles focusing on benign disease for the qualitative review.

Finally, they identified four studies that were appropriate for quantitative synthesis for Population, Intervention, Comparator, and Outcome (PICO) Question 1 and two studies for PICO Question 2.

## Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

## Rating Scheme for the Strength of the Evidence

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Methodology Levels for Rating the Quality of Evidence

| Quality Level | Definitions |
|---|---|
| **High** | Very confident that the true effect lies close to estimate of effect. |
| **Moderate** | Moderate effect; true effect is likely close to estimate of effect but may be substantially different. |
| **Low** | Limited confidence; true effect may be substantially different from estimate of effect. |
| **Very Low** | Little confidence; true effect likely substantially different from estimate of effect. |

## Methods Used to Analyze the Evidence

Meta-Analysis of Randomized Controlled Trials

Systematic Review with Evidence Tables

## Description of the Methods Used to Analyze the Evidence

Data Extraction and Management

Two independent reviewers extracted the desired variables from the studies into Microsoft Excel. For two meta-analyses, the reviewers used Review Manager X.6 (RevMan a program developed for The Cochrane Collaboration to assist authors in preparing Cochrane reviews for publication in The Cochrane Database of Systematic Reviews).

Measures of Treatment Effect

The reviewers reported the dichotomous outcomes of mortality and need for emergency, nonplanned operation as an odds ratio, with associated 95% confidence intervals and $p$ values. The unit of analysis was individual patients.

Assessment of Heterogeneity

Potential heterogeneity exists because of population differences, different types of surgery performed, and how obstruction was defined. The reviewers examined these differences across studies to assess the clinical and methodological heterogeneity. For the meta-analyses, they used

RevMan to calculate the Q statistic, and then, the $I^2$ statistic (%) was used to determine the proportion of variation between studies attributable to heterogeneity and categorized as low (25%-49%), moderate (50%-74%), or high (74%-100%). They also used the $\chi^2$ test for heterogeneity and examined the confidence intervals for overlap, with decreasing overlap representing increasing heterogeneity. If heterogeneity was moderate to high, they did not consider pooling the data to be appropriate, and they performed a qualitative narrative summary of results. Based on the methodological and clinical similarity, the reviewers performed meta-analysis for each outcome.

Qualitative Analysis and Quantitative Analysis (Meta-Analysis)

Please refer to the original guideline document for details of the qualitative analysis and quantitative analysis (meta-analysis) performed for each PICO question.

Grading the Evidence

Applying the Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework to the outcome of reduced mortality rates and for unplanned procedures or reoperations found no serious risk of bias, inconsistency, indirectness, or publication bias. However, studies comparing the rate of mortality for stent use versus surgery in patients with colonic obstruction included patients with only a malignant etiology for obstruction. No articles compared these techniques as applied to benign disease. All included studies were randomized controlled trials (RCTs); however, the overall quality of evidence was downgraded to low secondary to the small number of studies fulfilling criteria, serious imprecision, and the large variation in outcomes.

## Methods Used to Formulate the Recommendations

Expert Consensus

## Description of Methods Used to Formulate the Recommendations

The Population, Intervention, Comparator, and Outcome (PICO) questions are defined as follows:

Population: initial therapy in adult patients with colonic obstruction (malignant or benign)

Intervention: surgery

Comparator: endoscopic stenting

Outcomes: mortality and complications resulting in emergency unplanned procedure

PICO Question 1: In adult patients with colonic obstruction (malignant or benign) (P), should surgery (I) or endoscopic stenting (C) be performed to decrease mortality (O)?

PICO Question 2: In adult patients with colonic obstruction (malignant or benign) (P), should surgery (I) or endoscopic stenting (C) be performed to decrease emergency, nonplanned procedures (O)

## Rating Scheme for the Strength of the Recommendations

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Definition of Strong and Weak Recommendation

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| For policy makers | Recommended course should be adopted as policy. | Considerable debate and stakeholder involvement needed to make policy. |

### Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

### Method of Guideline Validation

Not stated

### Description of Method of Guideline Validation

Not applicable

## Evidence Supporting the Recommendations

### Type of Evidence Supporting the Recommendations

All included studies were randomized controlled trials (RCTs); however, the overall quality of evidence was downgraded to low secondary to the small number of studies fulfilling criteria, serious imprecision, and the large variation in outcomes.

## Benefits/Harms of Implementing the Guideline Recommendations

### Potential Benefits

Appropriate selection of interventional procedures for colonic obstruction

### Potential Harms

One study described successful stent placement in 23 patients with benign disease. In this series, complications occurred in 38% of the patients including migration (n = 2), reobstruction (n = 4), and perforation (n = 2). Of these major complications, 87% occurred after 7 days.

## Qualifying Statements

### Qualifying Statements

- The Eastern Association for the Surgery of Trauma (EAST) is a multi-disciplinary professional society committed to improving the care of injured patients. The Ad hoc Committee for Practice Management Guideline Development of EAST develops and disseminates evidence-based information to increase the scientific knowledge needed to enhance patient and clinical decision-making, improve health care quality, and promote efficiency in the organization of public and private systems of health care delivery. Unless specifically stated otherwise, the opinions expressed and statements made in this publication reflect the authors' personal observations and do not imply endorsement by nor official policy of EAST.
- "Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances."* These guidelines are not fixed protocols that must be followed, but are intended for health care professionals and providers to consider. While they identify and describe generally recommended courses of intervention, they are not presented as a substitute for the advice of a physician or other knowledgeable health care professional or provider. Individual patients may require different treatments from those specified in a given guideline. Guidelines are not entirely inclusive or exclusive of all methods of reasonable care that can obtain/produce the same results. While guidelines can be written that take into account variations in clinical settings, resources, or common patient characteristics, they cannot address the unique needs of each patient nor the combination of resources

available to a particular community or health care professional or provider. Deviations from clinical practice guidelines may be justified by individual circumstances. Thus, guidelines must be applied based on individual patient needs using professional judgment.

*Institute of Medicine. Clinical practice guidelines: directions for a new program. MJ Field and KN Lohr (eds) Washington (DC): National Academy Press; 1990. pg 39.

# Implementation of the Guideline

## Description of Implementation Strategy

An implementation strategy was not provided.

## Implementation Tools

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

# Institute of Medicine (IOM) National Healthcare Quality Report Categories

## IOM Care Need

Getting Better

Living with Illness

## IOM Domain

Effectiveness

Safety

# Identifying Information and Availability

## Bibliographic Source(s)

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## Adaptation

Not applicable: The guideline was not adapted from another source.

## Date Released

2016 Apr

## Guideline Developer(s)

Eastern Association for the Surgery of Trauma - Professional Association

## Source(s) of Funding

Eastern Association for the Surgery of Trauma (EAST)

## Guideline Committee

Eastern Association for the Surgery of Trauma (EAST) Practice Management Guidelines Section

## Composition of Group That Authored the Guideline

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## Financial Disclosures/Conflicts of Interest

The authors declare no conflicts of interest.

## Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

## Guideline Availability

Available from the Journal of Trauma and Acute Care Surgery Web site .

## Availability of Companion Documents

The following is available:

- Kerwin AJ, Haut ER, Burns JB, Como JJ, Haider A, Stassen N, Dahm P, Eastern Association for the Surgery of Trauma Practice Management Guidelines Ad Hoc Committee. The Eastern Association of the Surgery of Trauma approach to practice management guideline development using Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology. J Trauma Acute Care Surg. 2012 Nov;73(5 Suppl 4):S283-7. Available from the Eastern Association for the Surgery of Trauma (EAST) Web site .

In addition, a continuing medical education (CME) activity for this guideline is available in the original guideline document .

## Patient Resources

None available

## NGC Status

This NGC summary was completed by ECRI Institute on November 22, 2016. The information was not verified by the guideline developer.

## Copyright Statement

This NGC summary is based on the original guideline, which is copyrighted by the Eastern Association for the Surgery of Trauma (EAST).

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