

FAST FACTS AND CONCEPTS #119

INTERVENTIONAL TREATMENT OPTIONS FOR MALIGNANT BOWEL OBSTRUCTION

Robert S Krouse MD, Richard V Guthrie DO, Lisa A Rotellini-Coltvet MA, MMS, PA-C

Background Malignant bowel obstruction (MBO) is a common problem in patients with ovarian and colorectal cancers. MBO also occurs with other abdominal (e.g., gastric, pancreatic) and non-abdominal malignancies. MBO may be related to cancer (intraluminal or extraluminal tumor growth), its treatment (e.g., radiation enteritis), or benign etiologies (e.g., adhesions or internal hernias). Interventional treatment options should be considered except in those who are actively dying (see *Fast Fact #3*). In cases where surgical or interventional treatment of the MBO is not feasible, medical management can be effective at relieving MBO symptoms (see *Fast Fact #45* for further information).

Goals of treatment of a MBO include relieving nausea and vomiting, allowing oral or enteral intake, alleviating pain, and permitting the patient to return to their chosen care setting. Although it is recognized that improvement in quality of life after surgery is variable (42-85%), there is no consistent parameter used to determine this clinical outcome. With careful patient selection, surgical and interventional procedures may offer increased survival.

Surgical Approaches The optimal procedure is that which offers the quickest, safest, and most efficacious means to alleviate the obstruction and thereby improve symptoms and quality of life. Options include bowel resection (which may lead to the best overall outcome), bypass, or a gastrostomy. Intestinal stoma creation may be necessary after resection, or to adequately bypass the blockage. Laparoscopic procedures may be attempted, although this approach may be difficult due to adhesions, peritoneal carcinomatosis, or bowel dilatation. Cytoreductive procedures (resection of intraperitoneal tumor) frequently carry a high morbidity and usually are only considered with very low-grade tumors, such as pseudomyxoma peritonei and early gynecologic malignancies. Many patients are deemed inoperable (6.2-50%), with the most frequent reasons being extensive tumor spread, multiple partial obstructions, and inability to correct obstructions surgically. Surgical risks must be carefully considered prior to an operation, as morbidity (42%) and mortality (5-32%) are common, and the re-obstruction rate is high (10-50%). Poor prognostic indicators for surgical intervention include ascites, carcinomatosis, palpable intra-abdominal masses, multiple bowel obstructions, prior obstructions, and a poor performance status (e.g., Karnofsky performance score 60 or below).

Endoscopic Approaches are suited for patients who have symptoms refractory to medical management, are poor operative candidates, and/or decline an open operative intervention. The major approaches include endoscopic stenting and percutaneous endoscopic gastrostomy (PEG) tube placement for feeding and/or venting.

- Stenting procedures typically involve laser or balloon dilatation to canalize the lumen, then an endoluminal wall stent is employed. They have a high symptom relief success rate (64-100%) in complete and incomplete colorectal MBOs, and intestinal MBOs (e.g., gastric outlet, duodenal, and jejunal) that may last many months. Risks include perforation (0-15%), stent migration (0-40%), or re-occlusion (0-33%). Stent occlusion by tumor in-growth is a known complication, but this is usually amenable to additional endoscopic interventions.
- PEG tube placement can alleviate symptoms of intractable vomiting and nausea for upper GI MBOs in up to 90% of appropriately selected patients by venting secretions and air pressure into an external collecting system. In combination with other medical techniques, many patients can enjoy intermittent oral intake, longer-term enteral nutrition (depending upon goals of care), and/or undergo nasogastric tube removal after the procedure. Complications are rare. Relative contraindications include anatomic difficulties in accessing the stomach endoscopically, peritoneal carcinomatosis, and significant ascites (see *Fast Fact #308* for more information on treating malignant ascites).
- Percutaneous transesophageal gastrostomy tube (PTEG) placement is currently utilized in a handful of tertiary care institutions as a venting procedure for MBO patients with a relative contraindication to PEG placement. One study of 50 patients revealed a 95% technical success rate, 78% improvement in nausea compared to nasogastric tube, and symptomatic improvement in all patients who

underwent PTEG placement. The most common indications for PTEG placement are peritoneal carcinomatosis (56%), and ascites (24%). Contraindications are like conventional gastrostomy.

References:

1. Feuer DJ, Broadley, KE, Shepherd JH, Barton DP. Systematic review of surgery in malignant bowel obstruction in advanced gynecological and gastrointestinal cancer. *Gynecol Oncol.* 1999; 75:313-322.
2. Harris GJC, Senagore AJ, Lavery IC, Fazio VW. The management of neoplastic colorectal obstruction with colonic endoluminal stenting devices. *Am J Surg.* 2001; 181:499-506.
3. Soetikno RM, Carr-Locke DL. Expandable metal stents for gastric outlet, duodenal, and small intestinal obstruction. *Gastrointestinal Endoscopy Clinics of North America.* 1999; 9:447-458.
4. Campagnutta E, Cannizzaro R. Percutaneous endoscopic gastrostomy (PEG) in palliative treatment of non-operable intestinal obstruction due to gynecologic cancer: a review. *Eur J Gynaecol Oncol.* 2000; 21:397-402.
5. Teriaky A, Gregor J, Chande N. Saudi. Percutaneous endoscopic gastrostomy tube placement for end-stage palliation of malignant gastrointestinal obstructions. *J Gastroenterol.* 2012 Mar-Apr;18(2):95-8.
6. Brown MC. Cancer metastasis at percutaneous endoscopic gastrostomy stomata is related to the hematogenous or lymphatic spread of circulating tumor cells. *Am J Gastroenterol.* 2000;95:3288-3291.
7. Blumenstein I, Shastri YM, Stein J. Gastroenteric tube feeding: techniques, problems and solutions. *World J Gastroenterol.* 2014;20:8505–8524.
8. Percutaneous transesophageal gastrostomy (PTEG): a multiinstitutional review and largest reported case series in the United States (U.S.).

Version History: This *Fast Fact* was originally edited by David E Weissman MD and published in August 2004. It was re-copy-edited in April 2009; July 2015; and then underwent a more substantive update by Richard V Guthrie DO and Lisa A Rotellini-Coltvet MA, MMS, PA-C.

Fast Facts and Concepts are edited by Sean Marks MD (Medical College of Wisconsin) and associate editor Drew A Rosielle MD (University of Minnesota Medical School), with the generous support of a volunteer peer-review editorial board, and are made available online by the [Palliative Care Network of Wisconsin](#) (PCNOW); the authors of each individual *Fast Fact* are solely responsible for that *Fast Fact's* content. The full set of *Fast Facts* are available at [Palliative Care Network of Wisconsin](#) with contact information, and how to reference *Fast Facts*.

Copyright: All *Fast Facts and Concepts* are published under a Creative Commons Attribution-NonCommercial 4.0 International Copyright (<http://creativecommons.org/licenses/by-nc/4.0/>). *Fast Facts* can only be copied and distributed for non-commercial, educational purposes. If you adapt or distribute a *Fast Fact*, let us know!

Disclaimer: *Fast Facts and Concepts* provide educational information for health care professionals. This information is not medical advice. *Fast Facts* are not continually updated, and new safety information may emerge after a *Fast Fact* is published. Health care providers should always exercise their own independent clinical judgment and consult other relevant and up-to-date experts and resources. Some *Fast Facts* cite the use of a product in a dosage, for an indication, or in a manner other than that recommended in the product labeling. Accordingly, the official prescribing information should be consulted before any such product is used.