Colonic Obstruction: Which Is Urgent and How to Manage?

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Introduction

Large bowel obstruction is a common surgical emergency with a number of possible etiologies. Management requires prompt identification and referral to further investigation and intervention. Early diagnosis and management planning is the key to reducing morbidity and mortality associated with large bowel obstruction. Malignancy accounts for approximately 60-70% of all cases of dynamic large bowel obstruction. Other causes include diverticular disease (20%) and volvulus. The mortality and morbidity rates are dependent upon the etiology and the patient’s age at presentation.

Colonic obstruction (CO): Which is urgent and how to manage?

1. Definitions of CO

Any intestinal obstruction can be defined by it’s type as mechanical or non-mechanical (functional/paralytic ileus). In this presentation mechanical causes will be the focus and my view on most URGENT situations are highlighted. CO can be defined in a number of ways: simple, strangulated, closed loop - where both limbs of loop are obstructed, partial or complete obstruction. Further classifications can be made according to rate of onset: acute, chronic (leading to acute) and chronic. Site of obstruction: rectal, sigmoid, ascending, transverse and descending, caecum. Site in relation to lumen: extramural (adhesions, volvulus, tumors (compression)), intramural (tumors, inflammation), luminal (impacted faeces, foreign body).

2. Etiology of CO

Carcinoma and diverticulitis, together, account for approximately 90% of cases of CO. Colo-rectal carcinoma can present (15-20%) as the most urgent CO (acute, complete in rectum or sigmoid colon (left-sided CO)). The course and prognosis depends on the cause of obstruction. Prognosis for obstructing carcinoma highly depends on the staging, co-morbidity and choice of treatment. Most feared complication is perforation (mainly occurs in the caecum) and peritonitis.

3. How to manage CO
Treatment options can be summarized as:
▪ Colostomy/ileostomy
▪ Cecostomy
▪ Three-stage resection
▪ Hartmann’s procedure (2-stage resection)
▪ Subtotal colectomy
▪ Segmental resection with on-table lavage
▪ Segmental resection without bowel cleansing or fecal diversion
▪ Nd:YAG laser photoablation or APC (Argon Plasma Coagulation)
▪ Endoluminal stenting

Considerable debate surrounds the choice of the most appropriate option. Initially, staged procedures were advocated to decrease morbidity and mortality. Lately, it seems that single-stage procedures provide similar or better outcomes. Endoluminal stenting has been shown or described to provide effective relief of obstruction with few procedural complications. Compared to the surgical interventions, endoluminal stenting is a relative new technique and has generated new discussions of the most appropriate treatment for malignant large-bowel obstruction.

Why has stenting generated new discussions? The answer might be found in the CO treatment dilemmas. Patients with CO have greater operative morbidity and mortality, greater risk of treatment failure and shorter long-term survival rates. Emergency surgery has high mortality (15-30%) and morbidity (40-50%). It can be very difficult to decide which surgical procedure to offer (depends on the competency level and availability of experts in colo-rectal procedures). Emergency surgery results in increased stoma formation. Patients often have a substantial co-morbidity and also electrolyte disturbance, nutritional deficiency and an unprepared colon add to the overall risk. Postoperative multi-organ failure is seen, needing support in the critical care unit. The hospital stay and the overall recovery is usually prolonged which can result in reduced adjuvant therapy. 20% present with metastatic disease and this can influence decision making in the elderly.

To make a short answer to “why new discussions?” - the answer is that stenting offers multiple extra treatment pathways, meaning that a decisional tree or decisional algorithm for urgent treatment of obstructive colon cancer is mandatory.

The truth on PRO’s and CON’s

Surgery is the best choice! Stenting is the best choice! Which is true?
To answer this, we have to search for the scientific evidence. The number of published literature is huge and therefore only the latest reports are presented here. During 2012, four systematic reviews have been published:
B. Cennamo V et al., Int J Colorectal Dis. November 2012
The conclusions or recommendations in the 4 reviews are summarized here:

A: RCT’s should be performed focusing on survival, QoL and cost-effectiveness
B: RCT’s should be performed in high volume (experienced) centers
C: RCT’s should be performed focusing on oncological outcome and selection criteria’s for best treatments
D: Stenting provides increased number of primary anastomosis, reduced stoma creation and reduced overall complications

One of the con’s against the use of the stenting (in emergency setting as “bridge-to-surgery”) has been an increasing concern on the negative impact on oncological outcome = reduced long-term survival. There are few publications on this topic - one recently published is from Sabbagh C et al., Ann. Surg. 15. January 2013, with
the title: Is Stenting as “a Bridge to Surgery” an Oncologically Safe Strategy for the Management of Acute, Left-Sided, Malignant, Colonic Obstruction?: A Comparative Study With a Propensity Score Analysis.

The authors conclude that high-level evidence is lacking, little is known about the long-term impact of SEMS use as “BTS”. The best evidence would be a multicenter RCT, but this will probably never happen. A multicenter RCT would require >500 per group, α risk 0.05, β risk 0.8, noninferiority hypothesis of 10%.

The authors have therefor developed emergency, 1-step surgery for patients with LMCO treated with curative intent and they limit the use of SEMS to palliative settings and for patients with a high post-operative mortality risk.

Conclusion

My proposal on how to manage urgent CO, based on the above-presented knowledge, is:

• Manage patients in the context of a Multi Disciplinary Team (MDT) meeting
• Make consensus of a treatment/decision algorithm
• Decide selection criteria’s for best treatment
  - Have emergency imaging available (CT)
  - Have emergency MDT consultation available
  - Use high-risk score system
• Endoluminal stenting (SEMS)
  - Use it in high post-operative mortality risk patients
  - First choice in palliative settings
• Surgery
  - Develop emergency, 1-step surgery for patients treated with curative intent (colo-rectal surgical expertise on call?)

References

