Colonic Obstruction
Stent or Resect

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Objectives

- Discuss different etiologies for colonic obstruction
- Discuss different management options including endoscopic stenting
Disclosures

- None
Topics

- Malignant Colonic Obstruction (MCO)
  - Decompression
  - Palliation
- Benign Colonic Obstruction (BCO)
- Covered SEMS for MCO and BCO
MCO Diagnosis

- Contrast-enhanced CT
  - can diagnose obstruction (sensitivity 96%, specificity 93%)
  - define the level of the stenosis (94% of cases)
  - accurately identify the etiology (81% of cases)
  - provide correct local and distal staging

- When CT is inconclusive → colonoscopy

References:
Frager D, et al Abdom Imaging 1998;23:141-6..
MCO Decompression

- **Who:** only in those patients with both obstructive symptoms and radiological or endoscopic findings suspicious of MCO
- **Absolute contraindication:** perforation
- **Less successful:** patients with peritoneal carcinomatosis and tumors close to the anal verge (<5 cm)

Yoon JY et al GIE 2011;74:858-68.
Prophylactic stenting

Prophylactic stenting for patients with colonic malignancy but no evidence of symptomatic obstruction is strongly discouraged because of the potential risks associated with colonic SEMS placement.
Exception!

- For patients with potentially curable left-sided obstructing colonic cancer, who have an increased risk of post operative mortality, i.e. ASA ≥ III and/or age >70 years
Pre-Operative Decompression of MCO: Why?

- Converts an emergent two step procedure into an elective, one step procedure
  - Permits bowel cleansing
  - Examination of the proximal colon
  - Optimization of the patient's medical status
Stents for Acute Left Sided MCO; Are They Cost Effective?

- Yes!
- 23% fewer operative procedures per patient (1.01 vs. 1.32)
- 83% reduction in stoma requirement (7% vs. 43%)
- Lower procedure-related mortality (5% vs. 11%)
- Lower mean cost per patient ($45,709 vs. $49,941).

Targownik LE et al GIE 04
Right Sided MCO

- 16 patients (8 ascending, 8 transverse)
- Indication for SEMS
  - Bridge to definitive surgery (5)
  - Palliation (9)
- Success in relieving obstruction 88%
- Complications: Post-stent bleeding managed conservatively (1)
- Mean post-procedure hospital stay: 1.6 days

Dronamraju SS et al Dis Colon Rectum. 2009 Sep;52(9):1657-61
Right Sided MCO

- Emergency resection is generally considered to be the treatment of choice for right-sided obstructing colon cancer.
- In a palliative setting, SEMS can be an alternative to emergency surgery.
How Long Should You Wait Before Surgery?

- 5–10 days in patients with potentially curable left sided colon cancer
Case of IC Valve Obstruction

- 62 year old male with Cecal adenocarcinoma with liver metastases
- Presents with SBO
- Deemed unresectable for cure, and poor surgical candidate
Question

Your asked to place a SEMS for a MCO for palliation purposes

1. Place an NG tube and hospice care
2. Colon stent placement is associated with improved overall QoL
3. Surgical palliation has better overall QoL
Palliative Care in MCO: Why?

- Prospective study
- 43 un-resectable-for-cure MCO
- Stent (30) vs. surgical palliation (14)
- Patients completed a symptom questionnaire and a QoL instrument (Functional Assessment of Cancer Therapy-Colorectal [FACT-C]) at weeks 1, 2, 4, 8, 12, and 24 after palliation

Results

- Both provide durable improvement in symptoms from MCO
- Colon stent placement was associated with improved overall QoL and QoL related to GI symptoms
Back to our patient

- Cecal tumor invading into the IC valve and SB with obstruction
- A 22 mm x 9 cm WallFlex enteral stent was placed
4 Days Later

- Good BM
- Tolerating diet
- Pain improving
- Discharged home for the holidays
Long Term Outcome

- SEMS for MCO
  - Palliation: 168 patients
    - Mean stent patency: 145 days
    - 88.5% were free of obstruction from implantation until death
  - Bridge to surgery: 65 patients

- Complications
  - Palliation (24.4%): perforation (9%), occlusion (9%), migration (5%), and erosion/ulcer (2%)
  - Bridge to surgery (23.1%): perforation (5%), migration (12.3%)

Small AJ Gastrointest Endosc. 2010
Mar;71(3):560-572
Risk Factors

- Males
- Complete obstruction
- Stent diameter $\leq 22$ mm
- Stricture dilation during SEMS insertion
- Operator experience
- Unique to Palliation group
  - Intraluminal lesions (27% vs. 19%)
  - Bevacizumab (35% vs. 23%): Nearly tripled the risk of perforation)
  - Distal colon placement of the stent (27% vs. 13%)
Other Related Factors

- Worse outcome with previous treatment with chemotherapy:
  - 8/9 patients with stent migration
  - 2/3 patients with perforation

- Better outcome
  - Stents <10 cm ($p = 0.008$)
  - Distal colorectal obstruction ($p = 0.015$)
Synchronous Colorectal Tumors

- 3-4%

- Preoperative CTC and colonoscopy through the stent appear feasible and safe.

- Examination of the remaining colon with colonoscopy or CT colonography (CTC) is recommended in patients with potentially curable obstructing colonic cancer, preferably within 3 months after alleviation of the obstruction.
Case

- 78-year-old female with severe diverticular disease
- 2 weeks of constipation
- CT: Large bowel dilation with tapering in the rectosigmoid region
- Enema: High-grade obstruction at the level of the recto-sigmoid junction
Question

SEMS for BCO are

1. Contraindicated
2. FDA approved
3. Have low technical and clinical success
4. If performed as a surgical bridge, should undergo surgery, ideally, within a week
SEMS for Benign Colorectal Obstruction (BCO)

- 23 patients underwent endoscopic SEMS placement for BCO

- Etiologies
  - Diverticular/inflammatory (n = 16)
  - Post-surgical AS (n = 3)
  - Radiation-induced (n = 3)
  - Crohn’s disease (n = 1)

Results of 23 Patients

- Technical success: 100%
- Clinical success: 95%
- Major complications 38%
  - Migration (n = 2)
  - Re-obstruction (n = 4)
  - Perforation (n = 2)
  - 87% occurred after 7 days
  - 4 patients did not undergo an operation
- 8 (42%) did not need a stoma after stent insertion
Back to our patient

- Placement of a 22mm/12cm overlapped with a 22mm/6 cm WallFlex colonic enteral stent
- Subsequent surgery within 1 week
Diverticular Stricture

- Stent placement in active diverticular inflammation is associated with a risk of perforation
- Confirmation of malignancy by endoscopic biopsy and/or brush cytology is not necessary in an urgent setting
- Pathology results may help to modify further management of the stented patient

Case

- 45-year-old female underwent surgery for uterine fibroids
- Two areas of serosal abrasion in the sigmoid and rectosigmoid area
- Reinforced and repaired with interrupted 3-0 GI silk sutures
- One month later presents with vomiting and abdominal distention
Gastrografin Enema

- Approximately 4 cm segment of irregular luminal narrowing at the junction of the proximal and mid sigmoid colons
- Surgery did not want to operate
Question

You are asked to place a covered SEMS for a BCO
1. There are no TTS covered colonic SEMS in the U.S.A
2. Covered esophageal SEMS are FDA approved to be used for colonic strictures
3. Placement of a covered SEMS is low risk
SEMS for BCO

- 21 patients with 23 SEMS (1998-2008)
- Covered (11), Uncovered (12)
- Causes:
  - Surgical AS (8)
  - AS due to Crohn's disease (2)
  - Diverticular disease (10)
  - Radiation therapy stricture (1)
Results

- **Technical success** 100%
- **Clinical success** 76% (16/21)
- **Surgery avoided in 8 patients**
  - AS (5/8 63%) (all covered)
  - Diverticular stricture (3/10, 30%) (all uncovered)
- **Complications: 9/21(43%) pts, 10/23 procedures (43%)**
  - Major (Perforation 6/23 26%)
    - Diverticular stricture: 30%
    - AS: 25%
    - Crohn’s AS: 50%
  - Minor
    - Abcess: 9%
    - Migration: 4%
    - Colovesical fistula: 4%
Iatrogenic sigmoid stricture: 23 mm x 10.5 cm fully covered esophageal WallFlex stent
6 Weeks Later

- Overall pain improvement >50%
- Stent removed
- Continued pain
- Recto-sigmoid resection with end-to-end anastomosis
Conclusions for BCO

- SEMS can effectively decompress high-grade BCO
- SEMS can offer medium-term symptom relief
- This approach is associated with a high rate of delayed complications
- If elective surgery is planned, it should be performed within 7 days of stent placement
Covered vs. Uncovered SEMS for MCO

- 151 patients with MCO in Korea
- Uncovered WallFlex stent vs TTS covered Comvi stent
- Technical failure: 1.3%
- Clinical failure: 6.0%, Uncovered (6), Covered (3)

Complications
- Cancer infiltration: Uncovered (14.5% vs 3.8%)
- Stent migration: Covered (21.1% vs 1.8%)
- The mean patency: No difference (P = .50)
- No perforation!

Park S et al Gastrointest Endosc 2010
Aug;72(2):304-10
Extra-colonic Malignancies

- The technical and clinical success rates are inferior.
- It is generally advisable to attempt palliative stenting of extracolonic malignancies in order to avoid surgery in these patients who have a relatively short survival (median survival 30–141 days).
Should you Prep a MCO before Stenting?

- Symptomatic bowel obstruction is a relative contraindication to oral bowel cleansing
- An enema is advisable to facilitate the stent placement procedure by cleaning the bowel distal to the stenosis
- Antibiotic prophylaxis not indicated

Learning Curve for Stent Placement

- Increase in technical success and a decrease in the number of stents used per procedure after 20 procedures
- Significantly increased immediate perforation rate when colonic stent placement was performed by endoscopists inexperienced in pancreaticobiliary endoscopy

Stent Placement; With Fluoroscopy alone or with Endo?

- Comparable success rates
- Trend towards higher technical success when the combined technique is used
- SEMS placement can be performed by using either the through-the-scope or the over-the-guidewire technique

Gastrointest Endosc. 2014 Nov;80(5):747-61
Should You Dilate a Malignant Colonic Stricture?

- Increased risk of perforation after stricture dilation
- Whether before or after colonic stent placement

Gastrointest Endosc. 2014 Nov;80(5):747-61
Stent Length and Size

- The stent should have a body diameter ≥24 mm
- A length suitable to extend at least 2 cm on each side of the lesion after stent deployment
Thank you