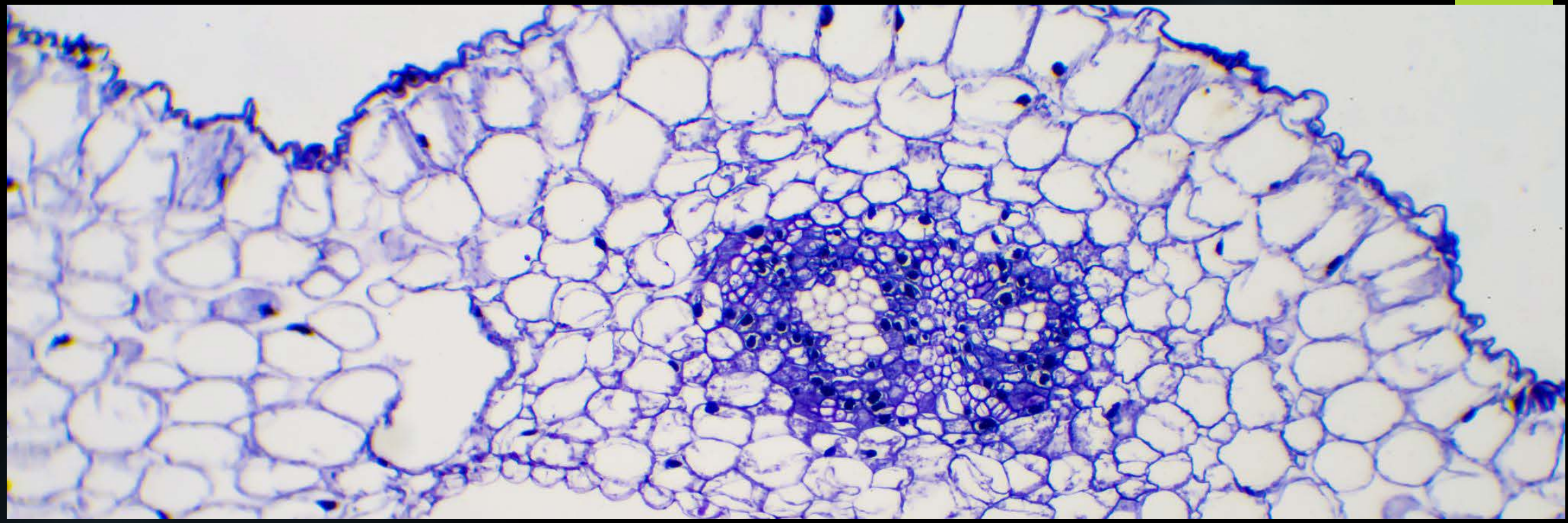


Medical Management of Malignant Bowel Obstruction: Updated Guidelines

Zainab Fatima

Case

Mr X was a 35-year-old male with metastatic colon cancer status post colectomy and ileostomy presented to the emergency department with nausea , vomiting and generalized abdominal pain for 3 days and 1 day's history of worsening confusion and altered mental status.

Past Medical history

History of ulcerative colitis, and primary sclerosis cholangitis complicated by cirrhosis and esophageal varices

Past Surgical history :

Abdominal ex-lap with colectomy and end ileostomy in 2021

Oncological History

Patient was initially diagnosed with high-risk stage 2 colon cancer with perforation in 2021 and he underwent urgent total abdominal colectomy and end ileostomy. He was offered adjuvant therapy with Capecitabine and oxalipalitn but was lost to follow up. He was readmitted to an OSH in 2022 and was found to have local recurrence in rectal stump.

This was followed by a PET scan which showed metastatic disease with bulky LAD on both sides of diaphragm. He was scheduled to receive CapeOx but this was delayed due to admission for significant variceal bleed and severe anemia. He received 3 doses of Capox in total with last dose 4 weeks before the current admission.

- Physical Exam at admission was significant for cachectic frail young man with jaundice . He was oriented x0 and opened eyes on verbal stimulation. Vitals were significant for tachycardia and hypotension (85/50). Abdominal exam was significant for distention and absent bowel sounds.
- In the ED, initial labs showed serum creatinine of 1.28, AST of 59, ALT of 22, ALP of 355 and total bilirubin of 21.4
- CT Angiogram Abdomen and Pelvis showed enlarging exophytic mass in rectosigmoid colon along with enlarging metastatic lymphadenopathy and peritoneal carcinomatosis. There was dilation of proximal to mid small bowel and findings were concerning for high grade bowel small obstruction.
- Patient was evaluated by surgery team and given his poor prognosis and worsening metastatic disease, he was not a candidate for surgical treatment. Surgery team recommended nonoperative management with NG tube placement.
- Palliative care was consulted for a goals of care discussion. Family meeting was held with his spouse and after reviewing all the possible options and his poor prognosis, decision was made to transition him to comfort care and transfer to inpatient palliative unit for symptom management

- In the inpatient palliative unit, main goal was to manage his nausea/vomiting and his abdominal pain secondary to his bowel obstruction.

- Patient was started on following medications:

1. -dexamethasone 2mg every 8 hour scheduled
2. -Octreotide 100mg , three times daily scheduled
3. -Haldol 1mg every 8 hour scheduled
4. -Methadone 5mg every 12 hour IV (patient was on outpatient PO methadone)
5. - Fentanyl 25mcg PRN for severe breakthrough pain

Objectives

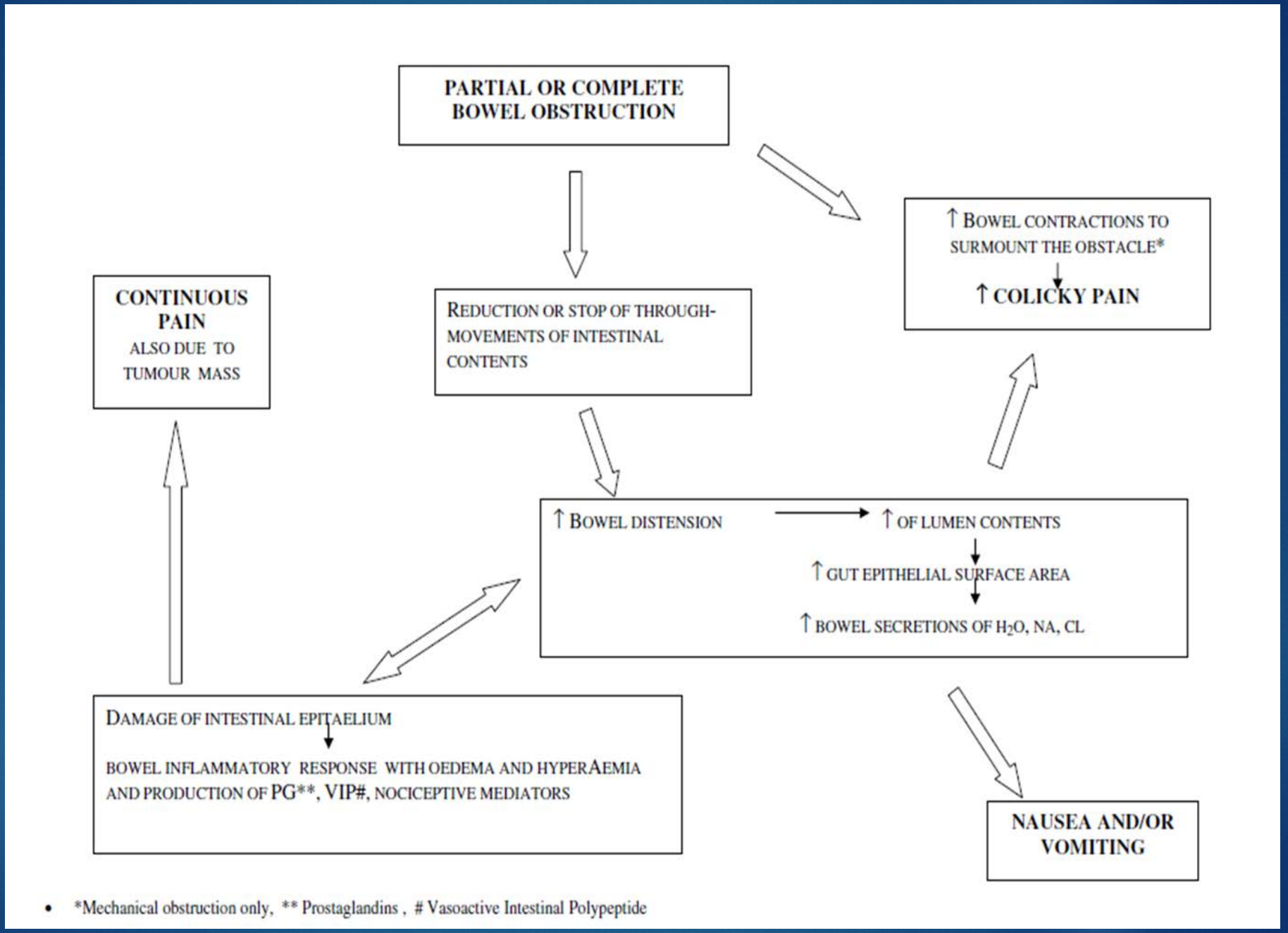
Objectives

- Understand the pathophysiology and clinical symptoms of malignant bowel obstruction
- Discuss surgical and endoscopic interventions
- Discuss nutrition in patients with MBO
- Describe updates to medical management guidelines for malignant bowel obstruction in advanced cancer

- MBO is defined by clinical and radiographic evidence of a bowel obstruction, in patients with either intra-abdominal malignancy or intraperitoneal disease.

- MBO can be secondary to either a primary intra-abdominal tumor (e.g. metastatic colorectal cancer, 25% to 40%; gastric cancer, 6% to 13%) or, rarely, an extra-abdominal malignancy (i.e., melanoma and breast) with peritoneal metastasis.

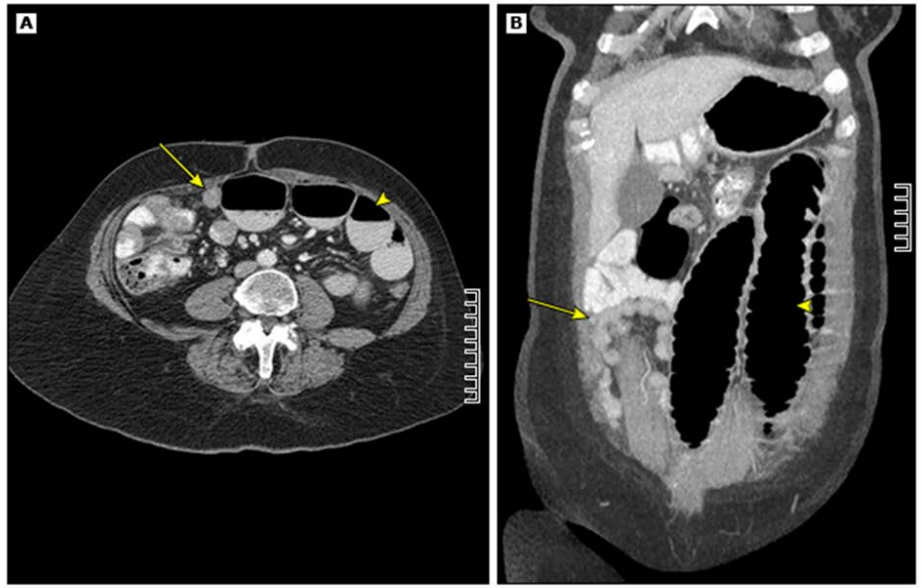
- Up to 10% to 48% of bowel obstructions in cancer patients are due to benign causes, such as adhesions (after surgery), fibrosis from radiation enteritis, volvulus, and intussusception.



- *Mechanical obstruction only, ** Prostaglandins , # Vasoactive Intestinal Polypeptide

Diagnostic Evaluation

Small bowel obstruction caused by metastatic ovarian carcinoma on CT scan



A CT scan of the abdomen (A) shows dilated upstream small bowel (arrowhead). The downstream small bowel is decompressed (arrow). Image B is a coronal reconstruction of the CT and shows dilated upstream small bowel (arrowhead). The downstream small bowel is decompressed (arrow).

CT: computed tomography.

Management Options

1. Surgery- resection, bypass, ostomy
2. Endoscopic- stents, PEG
3. Medical- NGT, IVF, TPN

a) anti-secretory/anti-motility agents (eg, somatostatin analog, scopolamine, glycopyrrolate)

b) anti-inflammatory (steroids)

c) pain medications (eg, morphine)

d) antiemetic therapy (eg, haloperidol, prochlorperazine, olanzapine).

Surgery

- Although surgical consultation may be warranted for emergent complications (eg, volvulus, ischemia, and perforation), there is no high-quality evidence describing an optimal therapeutic approach for the majority of patients presenting with MBO.

- Immediate surgical exploration is indicated for either suspected bowel compromise (ie, perforation, necrosis, or ischemia) or treating a surgically correctable cause of small bowel obstruction (SBO), except adhesions.

- Even for surgical emergencies, a nonoperative approach may still be warranted if the patient's overall disease prognosis or goals of care are inconsistent with aggressive measures.

Contraindication to Surgery

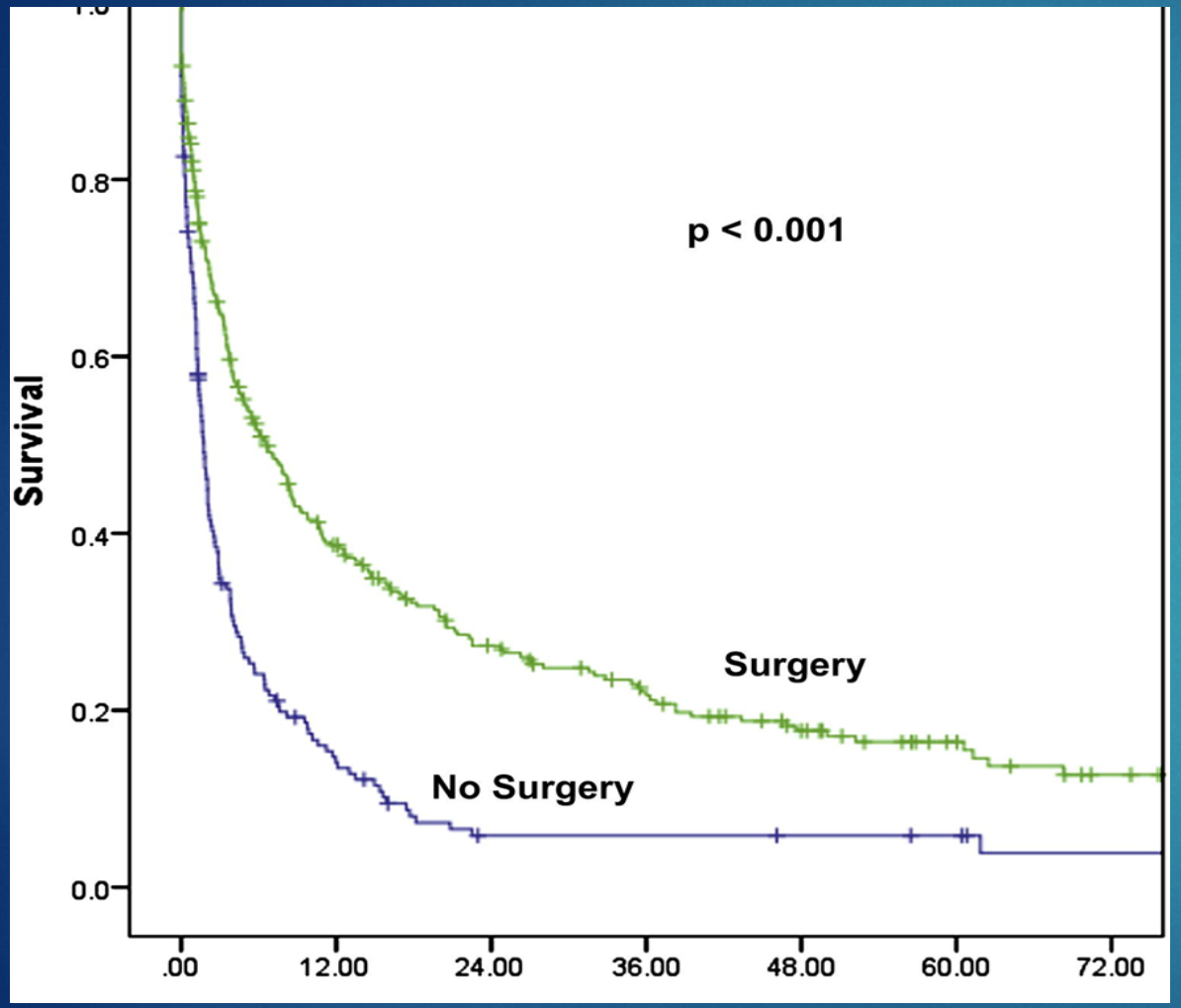
Patient Factor:

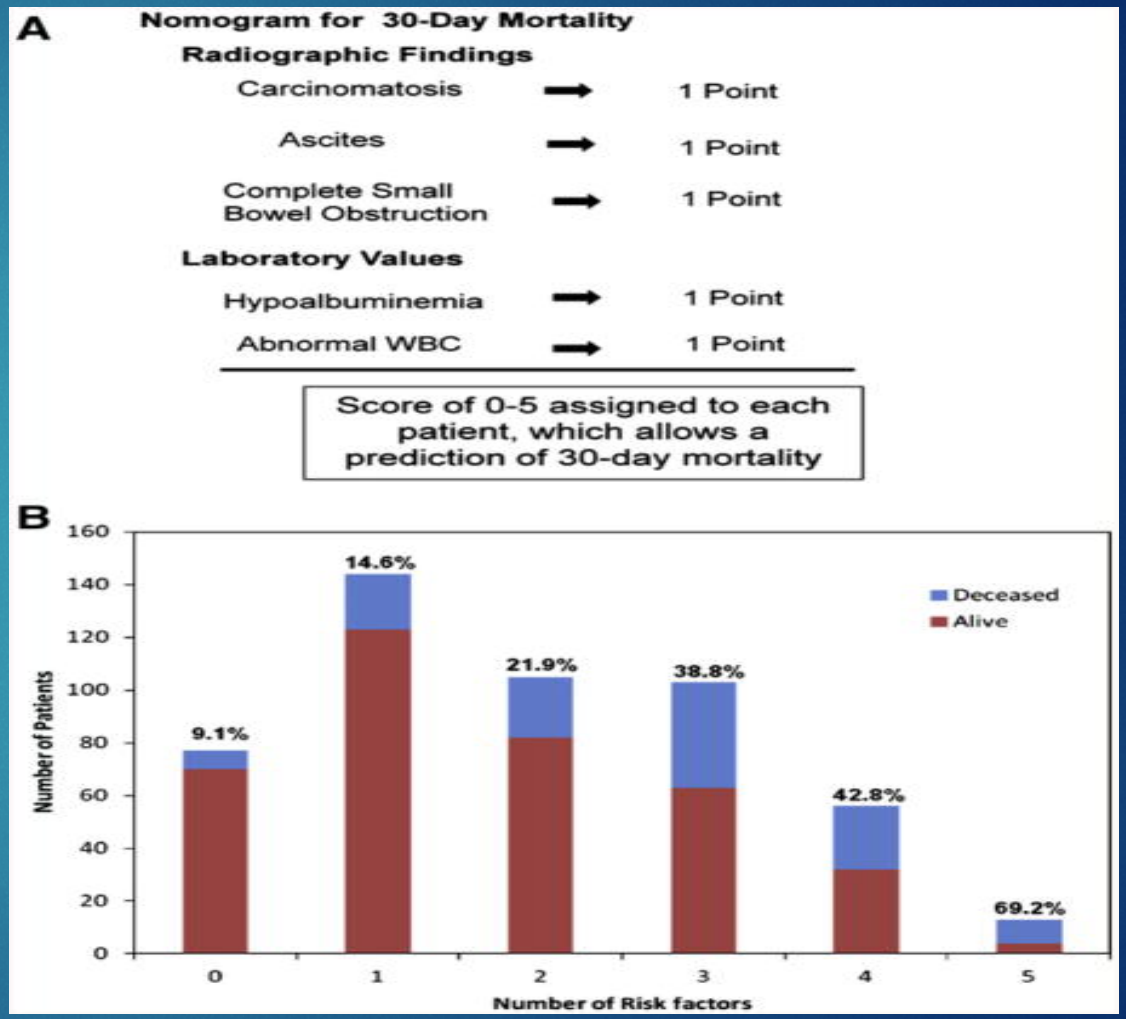
- Poor prognosis, limited life expectancy < 2 months
- ECOG of 2 or more, poor nutritional status
- Multiple comorbidities,renal or hepatic dysfunction
- Patient's preference

Disease Factor

- Diffuse intraabdominal tumor, carcinomatosis
- Multiple obstruction sites
- Refractory Ascites
- Previous surgeries showing diffuse metastatic cancer

Prognosis





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Interventional Treatment Options for Malignant Bowel Obstruction

Self- Expanding Stents

Indications for self-expanding stents for malignant colorectal obstruction:

- Palliation of surgically incurable colorectal cancer.
- Optimization of medical status in patients who might eventually be surgical candidates.
- Management of some patients with extracolonic pelvic tumors (eg, ovarian cancer) that are causing extrinsic compression.
- Absolute contraindications to colorectal stenting include existing perforation, very distal rectal lesions within 5 cm of the dentate line, disseminated peritoneal carcinomatosis

Venting PEG tube

- Venting PEG tube placement may reduce nausea and vomiting at the risk of minor complications. May not reduce deaths in hospital .
- 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

Comparative Study Surgery, Venting Gastrostomy or Medical Management for Malignant Bowel Obstruction

- National Cancer Institute Surveillance, Epidemiology and End Results (SEER) data for patients ≥ 65 w stage IV ovarian or pancreatic cancer
- Overall median survival after 1st MBO admission < 3 months
- 7% had PEG as initial treatment
- Compared with medical management and surgery, patients with PEG had lowest readmission rate, higher hospice referral, less ICU care and less deaths in hospital although survival also lower, likely reflecting patient selection

Lilley EJ, Scott JW, Goldberg JE, Cauley CE, Temel JS, Epstein AS, Lipsitz SR, Smalls BL, Haider AH, Bader AM, Weissman JS. Survival, Healthcare Utilization, and End-of-life Care Among Older Adults With Malignancy-associated Bowel Obstruction: Comparative Study of Surgery, Venting Gastrostomy, or Medical Management. Annals of Surgery. 2017 Mar 23.

Nutrition

Review Article | Published: 17 July 2019

The role of parenteral nutrition in patients with malignant bowel obstruction

Federico Bozzetti

Supportive Care in Cancer **27**, 4393–4399 (2019) | Cite this article

Abstract

- Parenteral Nutrition can be beneficial for patients with MBO by providing them with essential nutrients and preventing dehydration.

- However, it can be associated with complications such as catheter-related infections, metabolic disturbances, and thrombosis.

- Decision to use PN in MBO patients should be made based on their nutritional status, prognosis, and potential risks and benefits of PN.

- If used appropriately, PN can be an important supportive measure in improving the QoL of MBO patients. However, it should not be considered a primary treatment for MBO and should be used in conjunction with other treatments such as palliative care, stenting, or surgery, as appropriate

Supportive Care in Cancer → Journal Aims and Scope Submit to this journal

Special Article | Open Access | Published: 10 March 2022

MASCC multidisciplinary evidence-based recommendations for the management of malignant bowel obstruction in advanced cancer

Ainhoa Madariaga, Jenny Lau, Arunangshu Ghoshal, Tomasz Dzierżanowski, Philip Larkin, Jacek Sobocki, Andrew Dickman, Kate Furness, Rouhi Fazelzad, Gregory B Crawford & Stephanie Lheureux

Supportive Care in Cancer **30**, 4711–4728 (2022) | Cite this article

Medical Managment

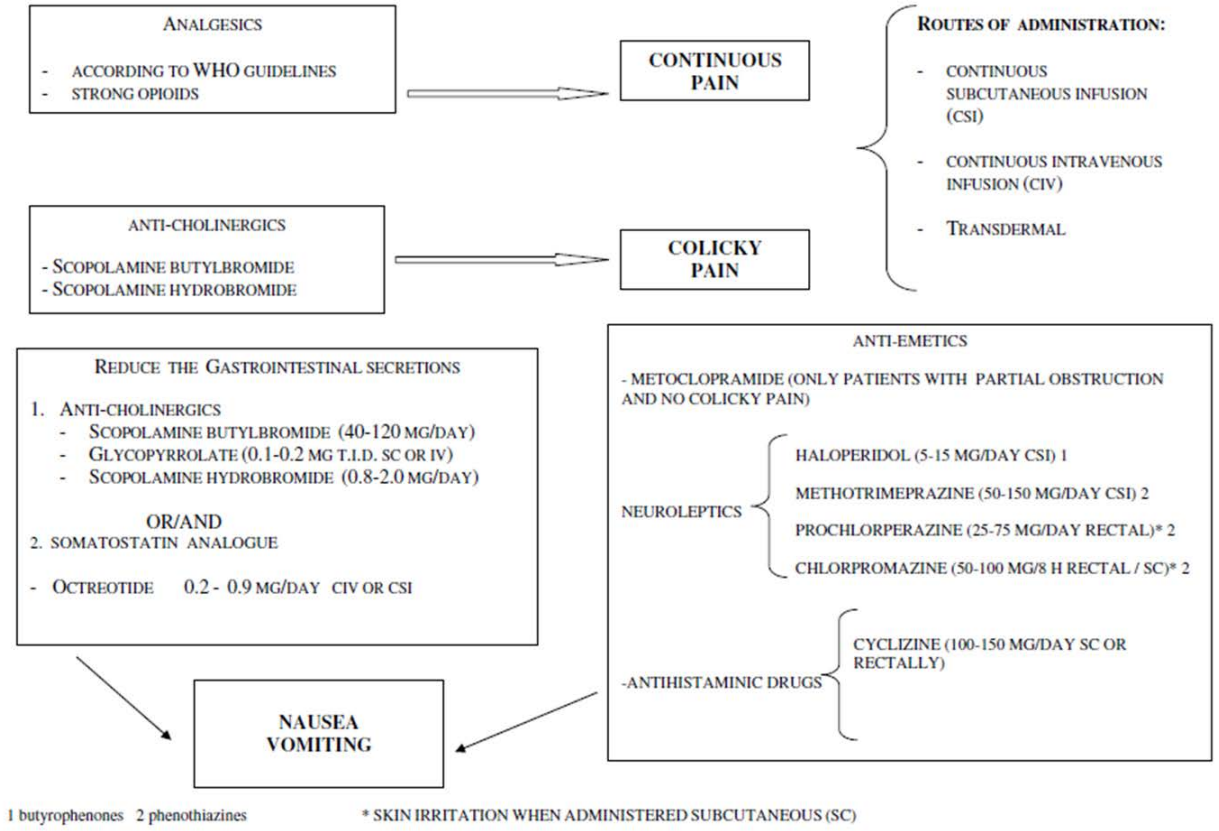


Fig. 3 – Symptomatic pharmacological approach.

Somatostatin Analogs

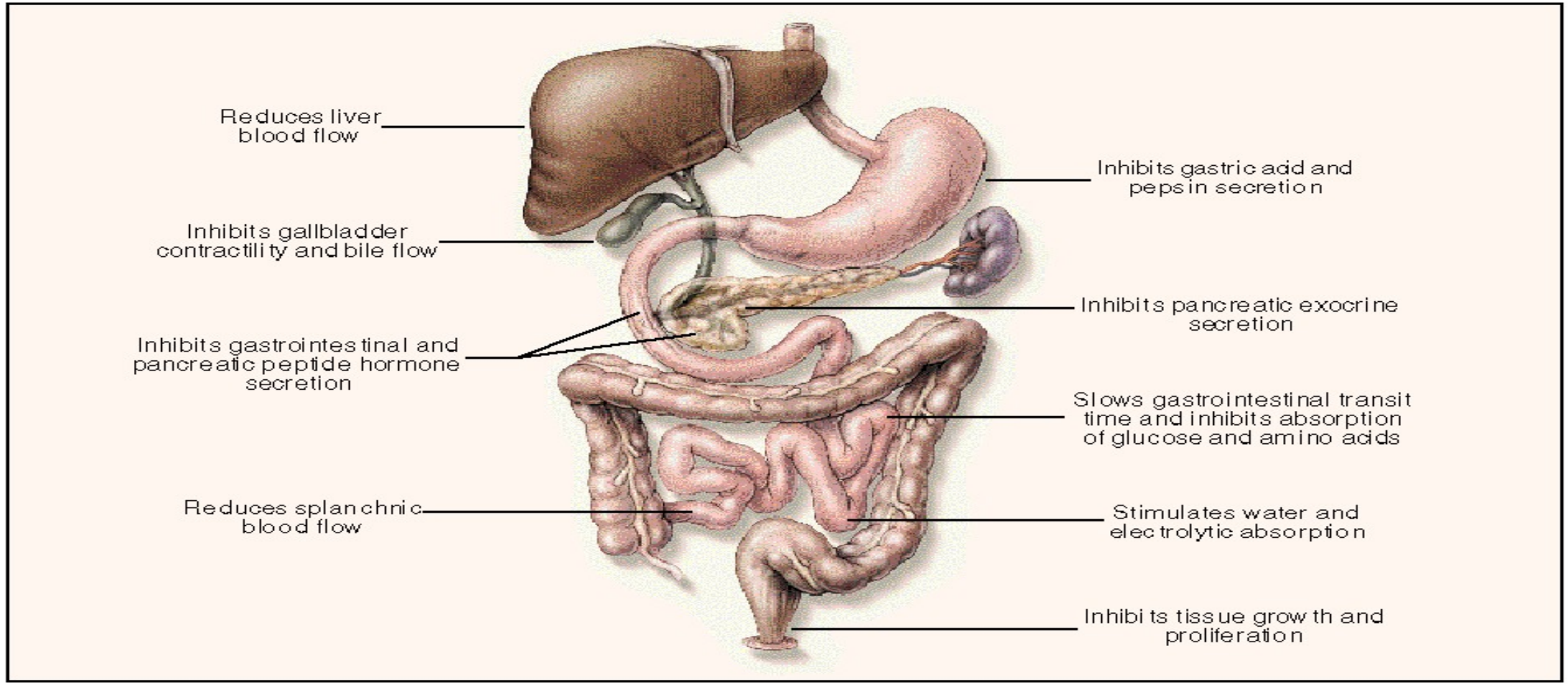
Key Points:

1. **Somatostatin analog (octreotide, lanreotide) may reduce vomiting in MBO (levels of evidence: I; grade A).**

- Several studies have suggested superiority of SSA (octreotide) to anticholinergic drugs in reducing vomiting and intestinal secretions and allowing higher rates of NGT removal, with up to 60% success rates reported.

- The usual starting dose is 0.1 mg (100 micrograms) two to three times daily given subcutaneously. Rapid dose titration may be needed. Side effects are rarely a problem, although cost may be a significant issue

Somatostatin Analogs



N Engl J Med 1996; 334:246-254 DOI: 10.1056/NEJM199601253340408

Anti-Cholinergic

Key Point:

- **The benefit of anticholinergics (hyoscine butylbromide) may be inferior to octreotide to reduce vomiting in MBO. (Level of evidence: III; Grade: D).**

1. Anticholinergic agents such as Scopolamine or glycopyrrolate may be added to somatostatin analogs in individual situations, particularly in patients with high level of obstruction or to limit colicky abdominal pain. They also have an anti-emetic effect

2. Scopolamine can be administered by a transdermal patch,however it does cross blood-brain barrier and can cause confusion.

3. Glycopyrrolate has a pharmacologic profile that is similar to scopolamine, but there is minimal penetration of the blood-brain barrier. It may be preferred in patients who are predisposed to somnolence and mental confusion. Although this drug has never been systematically evaluated as a treatment for symptoms of bowel obstruction, anecdotal evidence supports benefit.

Dopamine Antagonists

Metoclopramide :

- Dopamine antagonist prokinetic drugs (e.g., metoclopramide, domperidone) may be effective for the management of nausea, vomiting, and restoring bowel transit time in partial MBO. Due to the potential increased risk of bowel perforation, it likely should be avoided in complete MBO. (level of evidence: III; grade B)

Olanzapine:

- Studies have shown olanzapine effectively reduces nausea and vomiting in patients with peritoneal carcinomatosis and incomplete bowel obstruction

Haloperidol and phenothiazines (chlorpromazine and levomepromazine) :

- Neuroleptic drugs that block the dopamine receptors at the central level only. They have a potent antiemetic, but not prokinetic, action.
- Among these drugs, haloperidol is considered the most ideal because it produces less somnolence and anticholinergic effects. (level of evidence: IV; grade: B)

Serotonin (5HT-3) Antagonists

- Granisetron, serotonin (5HT 3) antagonist may reduce nausea and the frequency of vomiting in MBO (level of evidence: III; grade D).

- Updated year 2022 Multinational Association for Supportive Care in Cancer (MASCC) guidelines emphasized the weakness of the evidence, and that further studies are needed to assess its use

Glucocorticoids

Key Point:

The use of steroids may help with the acute symptoms of MBO and can be used for short-term benefit (level of evidence: III; grade: B).

- While the use of glucocorticoids for MBO is rational, the data to support efficacy are relatively weak.

- A dose between 4 and 16 mg of dexamethasone daily may be considered. In cases of no symptomatic improvement in 3 to 5 days, discontinuation should be considered.

Back to our case..

- Mr X nausea and vomiting significantly improved after 48 hours of octreotide, dexamethasone and Haldol
- No dose escalation was necessary for octreotide and dexamethasone
- After 72 hours, Schedule Haldol was changed to PRN due to improved symptoms
- Patient remained disoriented but was showing no- nonverbal signs of pain or discomfort

Take home points…

- Approach to treat MBO should be multi and inter-disciplinary to improve the management of these patients and support their families.
- All patients with inoperable MBO who are not candidates for a stent or enteric tube decompression should undergo treatment with antisecretory drugs
- As an anti-emetic, somatostatin analog (octreotide, lanreotide) are superior to anticholinergics.
- Glucocorticoids may be added to antisecretory therapy with an antiemetic for short-term use, providing a synergic effect, given the different mechanism of action
- Haloperidol, a butyrophenone antipsychotic, may be an effective anti-emetic in MBO, particularly for complete MBO.
- Limited evidence supports benefit of Histamine H1 antagonists and phenothiazines as antiemetics.

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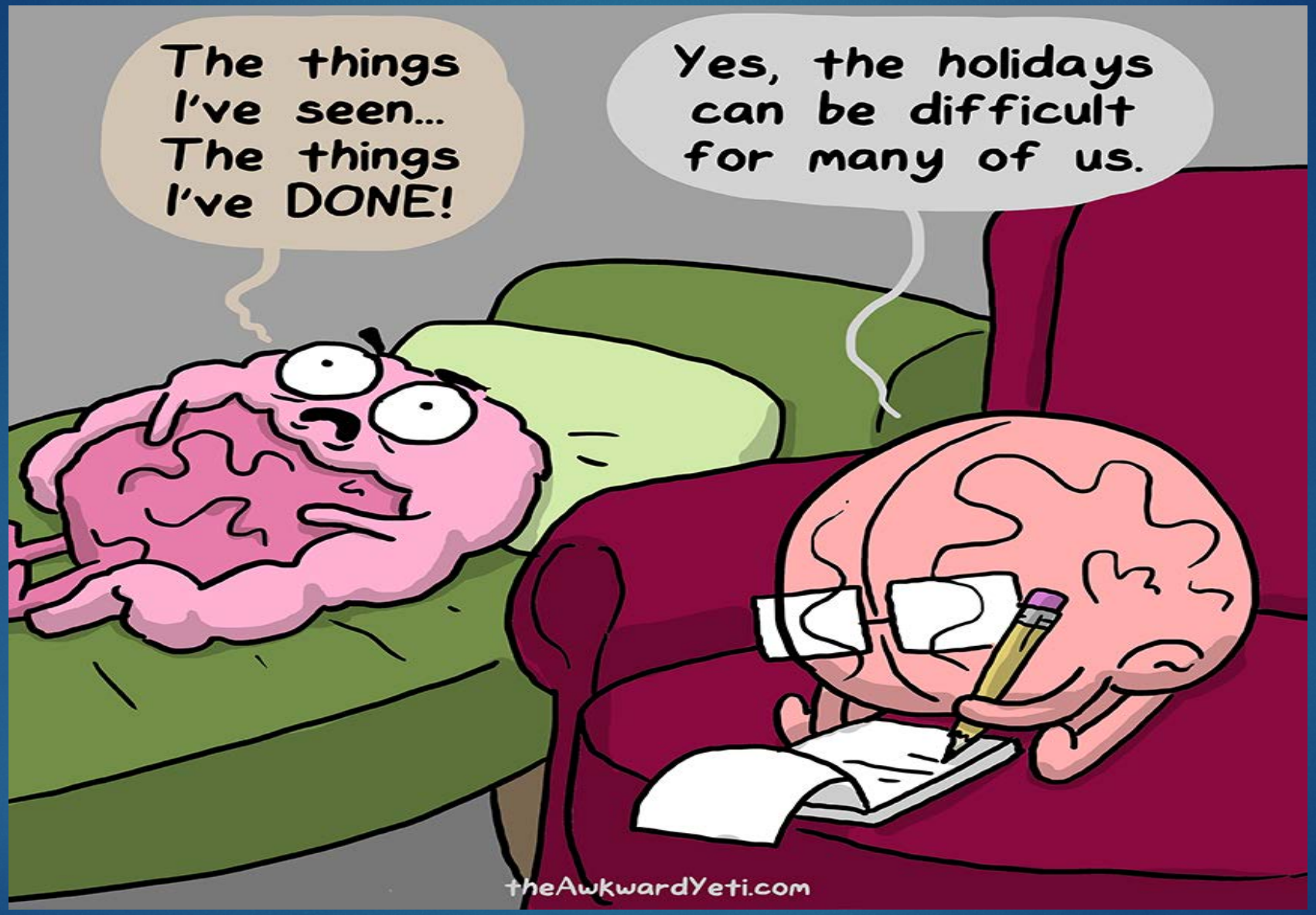
The things I've seen... The things I've DONE!
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