



## Palliative Management of Malignant Bowel Obstruction with Carcinomatosis

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### Case

Mr. H was a 73 year old male with a past medical history of lumbar spinal degenerative disease, pyloric stenosis repair as a child and a Hartmann procedure for a perforated diverticulitis at age 43, with colostomy reversal shortly after. In August of 2014 he was diagnosed with stage 4 colon cancer, with extensive metastases to the lung including large masses that invaded into the airways as well as a right middle and upper lobe mass compressing the superior vena cava. He underwent and assisted laparoscopic right hemicolectomy of the ascending colon with anastomosis, and no ostomy due to large bowel obstruction, which was his presenting symptom at the time of diagnosis in August, 2014. His staging post-surgery was T2N2M1b. After the surgery, however, Mr. H was not able to follow up for chemotherapy.

On July 27<sup>th</sup> of 2015, he presented to a city hospital with abdominal pain, nausea and vomiting. At that time a CT scan was consistent with a partial small bowel obstruction, imaging did not reveal the origin. He was treated with a nasogastric tube and was seen by surgery. On the third day of his hospitalization, he pulled out the nasogastric tube and surgery was deferred by the primary team since his symptoms resolved. Mr. H was then discharged with instructions to follow up as an outpatient.

Two days after his discharge, however, he presented again to our facility with abdominal pain and distention. On the day of presentation the patient had severe 10 out of 10 scored intermittent, cramping abdominal pain in the right upper quadrant. He had not had a bowel movement in 6 days, but was still able to pass flatus. A nasogastric tube was once again inserted in the emergency room that provided minimal relief and the patient was ordered to take nothing by mouth. A repeat CT scan showed a closed loop of small bowel present posterior to the small bowel mesentery, with a transition point in the central pelvic region. There was also soft tissue thickening in the abdomen anteriorly, suspicious for omental caking and a more discrete nodule in the right colic gutter, suspicious for a metastatic implant. There was a new finding of a 1.9 centimeter ovoid hypo-density in the liver suspicious for metastatic disease. The large bowels were not dilated and not displaced to the periphery.

Mr. H remained cognitively intact and was fully aware of his condition. A meeting was set up with him and his family to discuss his prognosis and goals of care. He had reported a weight loss of 20 pounds in the past month and had a hypoalbuminemia of 1.7 g/dL. He was able to pass flatus, but had not had a bowel movement in over 5 days. His main complaints were cramping abdominal pain, nausea, bilious vomiting and inability to tolerate oral intake. His functional status at the time of evaluation was Eastern Cooperative Oncology Group (ECOG) level 3. Given his extensive disease, decreasing functional status, weight loss, and low albumin, his prognosis was estimated to be in the realm of less than 3 months [1,2]. Due to his functional status, location of obstruction, and likely carcinomatosis, he was not a candidate for stent placement or surgical interventions [3]. Goals of care were addressed in detail and both the patient and his family were clear that they would want him to return home with hospice care with a treatment plan focused on comfort. The option of attempting medical management to treat his bowel obstruction was discussed with the patient and subsequently the patient was started on dexamethasone 8 mg intravenously in the morning and the mid-day, metoclopramide 10 mg intravenously every 6 hours, octreotide 100 mcg intravenously three times a day and hydromorphone 1 mg intravenously every 4 hours around the clock as well as every 4 hours as needed. He was also started on pantoprazole 40 mg intravenously once a day for gastrointestinal prophylaxis due to steroid use.

On day 2, patient reported resolution of abdominal pain, but he still had nausea and vomiting. The dosage of the octreotide was increased to 200 mcg IV three times a day. On Day 3, the patient had a large bowel movement, his nasogastric tube was discontinued and he reported significant relief of his abdominal pain, nausea and vomiting. On day 4, patient was able to tolerate a liquid diet. On day 5, the intravenous octreotide was converted to subcutaneous, dexamethasone was converted to 4 mg orally twice a day, metoclopramide 10 mg orally every 6 hours and pantoprazole 40 mg orally once a day. The patient was discharged home on day 5 with home hospice services. Subcutaneous octreotide was continued for another week and discontinued. Metoclopramide, dexamethasone and pantoprazole were continued. The patient was at home with hospice and was recently transferred to an inpatient hospice facility for more end-of-life care around the clock. He had

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no further complications or symptoms of bowel obstruction. The plan of care going forward was to keep the patient's stool soft, have frequent monitoring of his bowel movements and preserve the ability to tolerate oral intake.

The palliative care team remains in close contact with the patient and his family now that he has returned home. This includes psychosocial support from our social worker for the patient's wife and son. The patient's goal is to remain active and independent, stay at home and have a good quality of life. So far, he feels he has met these goals.

## Discussion

Patients with cancer are at increased risk for developing gastrointestinal obstruction due to intrinsic or extrinsic compression, adhesions, post-radiation fibrosis, or by the tumors directly invading mesentery, nerves, celiac plexus or bowel muscle. Malignant bowel obstructions are most commonly seen in colorectal (10-28%) and gynecological cancers (5-42%) [4]. Current treatment options include surgical intervention, stent placement or medical management. Although data is limited, predictive factors that are indicative of a poor outcome with surgery in MBO include advanced disease burden, peritoneal carcinomatosis, multifocal obstruction, large ascites, hypoalbuminemia and leukocytosis [5,6]. Stent placement is an acceptable non-surgical palliative option, however, poor performance status, prognosis less than 30 days; multiple sites of stenosis and peritoneal carcinomatosis are also relative contraindications for stenting [7]. For such patients, management with IV fluids and temporary nasogastric tube suctioning has historically been the treatment of choice. However, in patients with limited prognosis, these procedures may only provide incomplete and temporary relief of symptoms. In addition, having tubes and IVs may be uncomfortable and may also hinder transition back to home.

Current published guidelines by the National Comprehensive Cancer Network (NCCN) and the European Association for Palliative Care (EAPC) recommend the use of opioids, corticosteroids, octreotide, anticholinergics and anti-emetics with the use of nasogastric suctioning if these drugs are not successful [8,9]. The purpose of these drugs is to decrease peri-tumoral edema, secretions and peristaltic movements. Metoclopramide has dopamine (D2) antagonist and serotonin (5HT4) agonist properties, combining central chemoreceptor trigger inhibition with a pro-motility action [7]. The prokinetic effect of metoclopramide is attempted only in the case of partial small bowel obstruction and is contraindicated if there is complete mechanical obstruction or colicky pain. The appropriate dose of metoclopramide to be effective is 10 mg every four hours [10,11].

Somatostatin analogs inhibit gastric, pancreatic and intestinal secretions and reduce motility. The SALTO study that was published in 2012, showed that octreotide may even have a key role in in treating obstruction in patients with peritoneal carcinomatosis, especially in moderate-severe disease [12]. Coupled with the anti-inflammatory effects of steroids, octreotide and opioids have been shown in some studies to relieve gastrointestinal symptoms due to malignant bowel obstruction [13,14].

When we tailored our therapy for Mr. H, we chose our dosages according to the NCCN palliative care guidelines, as well as several other sources that recommend starting Octreotide intravenously or subcutaneously 100 mcg three times a day and increasing up to 300 mcg three times a day, dexamethasone 4 mg intravenously up to three times or four times a day (we chose to administer this 8 mg intravenously twice a day) and metoclopramide 10 mg intravenously every four hours [10,11,13,14].

## Conclusion

Data on the use of medical therapy, namely, octreotide, opioids, metoclopramide and dexamethasone, while available is sparse. Octreotide has a relatively low side effect profile and has a rapid

onset of action. The use of increasing dosages to expedite relief in this population of patients, given their limited prognosis, may be worth further investigation.

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