



Malignant Bowel Obstruction - What are the options

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Abstract : Title. Malignant bowel obstruction - what are the options Introduction. Malignant bowel obstruction is a complication of patients with advanced intra-abdominal and pelvic malignancy with a prevalence of 3-5. Most often in view of the advanced nature of this disease these patients are either not treated or treated conservatively. Nutrition is a major factor in improving the life expectancy and the quality of life in these patients. If obstruction is mechanical in nature then surgical treatment should be considered as it is proven to be beneficial in 90 of the times. Case description. We present a 62 year old female with diabetes mellitus, hypertension and rheumatic heart disease who had left MRM for carcinoma breast in 2002, mitral valve replacement, permanent pace maker placement for RHD in 2009, and TAH, BSO and pelvic nodal dissection for ovarian carcinoma in 2010. She also received 12 cycles chemotherapy following the last operation. She at present came with malignant bowel obstruction with disseminated intra-abdominal malignancy. We relieved her symptoms surgically by doing right hemicolectomy and ileo-transverse anastomosis despite the disseminated disease and multiple co-morbid illnesses. Discussion. Malignant bowel obstruction can be due to functional or mechanical cause. If mechanical in nature then surgical correction is the mainstay of treatment provided the benefit outweighs the risks involved. However this may not be feasible in every patient and in such conditions endo-luminal palliation or pharmacological palliation is to be considered. Restoration of nutrition and thereby improving the quality of life and life expectancy should be the ultimate goal.

Keyword : obstruction, bowel, malignancy, surgery, palliation, case report

Malignant Bowel Obstruction – What are the options?

1. Introduction:

Malignant bowel obstruction (MBO) is a complication in patients with advanced intra-abdominal and pelvic malignancies. The global prevalence is about 3%-5%. These patients are mostly treated conservatively in view of advanced disease due to the notion that surgery is not beneficial. But recent evidence proves otherwise with an increase in survival

period of these patients with surgical therapy as compared to medical therapy. However it should be undertaken when the benefit of operation is likely to be more than the risks involved. The quality of life and survival period of these patients depend predominantly on nutrition apart from the disease progression. In advanced malignant disease, obstruction can be due to mechanical or functional cause. If found to be mechanical, surgical therapy is now proven to relieve symptoms in at least 90% of the patients and thereby improving the life expectancy and quality of life.

2. Case report:

62 year old female had undergone left modified radical mastectomy in 2002 for carcinoma breast, and had adjuvant chemo-radiotherapy. In 2009 she underwent mitral valve replacement and permanent pace maker placement for rheumatic heart disease and was on oral anticoagulation. She had one episode of intestinal obstruction in 2010 and on evaluation was found to have disseminated metastatic ovarian carcinoma. She underwent diversion loop ileostomy as an emergency procedure to relieve obstruction. Following this she received three cycles of chemotherapy and had reversal of ileostomy, total abdominal hysterectomy, bilateral salphingo-oophorectomy and pelvic nodal dissection. She was given 12 cycles adjuvant chemotherapy and was on follow up in another centre. She was also diagnosed to have diabetes mellitus and hypertension and was on regular medication. After two years she presented to our centre with colicky abdominal pain for 4 months with at least one episode per month which settled spontaneously. This had worsened for the last one month. At present she had severe colicky abdominal pain for 3 days, and this was associated with vomiting, abdominal distention, constipation and obstipation. On examination of the abdomen there were scars of the previous operations. Abdomen was distended with a mass palpable in the right hypo-chondrium measuring approximately 12X10 cms in size which was freely mobile. The bowel sounds were exaggerated. On evaluation with CECT she was found to have long segment circumferential wall thickening probably serosal deposits causing luminal narrowing in the proximal two third of the transverse colon with dilated proximal bowel loops.

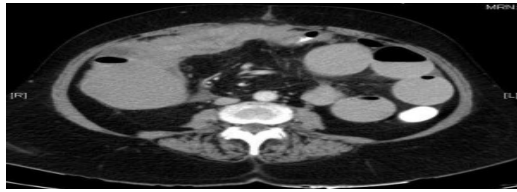


Fig:1. CECT showing circumferential wall thickening of transverse colon with proximal dilated bowel loops.

She was admitted for conservative management in view of advanced intra-abdominal malignancy and multiple co morbid illnesses. She did not settle and hence was planned for an exploratory laparotomy. At operation she was found to have obstructing growth in the proximal transverse colon with dilatation of proximal bowel loops. Multiple loops of ileum was adherent to the serosal tumour deposits. There were multiple nodes along the mesentery. She underwent palliative right hemi colectomy with ileotransverse side to side anastomosis.



Fig:2. Intra-operative picture of the patient with advanced disease and bowel obstruction.

Biopsy was reported as metastatic carcinoma with a possible primary being ovary. She recovered well post operatively and was advised for further chemotherapy under the care of medical oncologist.

3. Discussion:

3.1. Epidemiology:

The global prevalence of malignant bowel obstruction is about 3% to 15% and it increases with ovarian and colonic malignancies (1). Most often the primary diagnosis coincides with the malignant obstruction in about 22% of the time (2). Spontaneous resolution occurs in about 36% of the patient. The survival ranges from 3-8 months in patients who have palliative surgery as compared to 4-6 weeks in patients who did not undergo operations (3). The common reason for deterioration of these patients is related to nutrition which in turn is due to their obstruction (3).

3.2. Definition of MBO:

There are no standard definitions for MBO. But consensus states that MBO are with: (a) clinical evidence of bowel obstruction, (b) obstruction distal to the Treitz ligament, (c) the presence of primary intra-abdominal or extra-abdominal cancer with peritoneal involvement, and (d) the absence of reasonable possibilities for a cure(4)

3.3. Pathophysiology of MBO:

MBO can occur any time during the disease progression. They can originate in either small or large bowel with partial or complete obstruction. They may be single or multiple lesions. Duodenal obstruction is usually seen in malignancies of pancreas, gall bladder or common bile duct. Similarly distal ileum or colonic obstruction is usually seen in colonic or pelvic malignancies. Multiple level of obstruction is usually seen in 80% of the times in patients with peritoneal carcinomatosis (2). Infiltration of enteric or celiac plexus causes severe impairment in peristalsis and subsequently leads to dysmotility and pseudo obstruction. Other factors which predisposes to obstruction are chronic constipation, inflammatory bowel disorder, renal dysfunction, mesenteric thrombosis, surgical adhesions and radiotherapy induced fibrosis (5). At the biochemical level, fluid and gaseous retention occurs which increase the intraluminal pressure

markedly. This favors release of 5-HT and VIP. All these together causes dysfunction of interstitial cells of cajal leading to dysmotility (6).

3.4. Clinical presentation:

Patients predominantly present with nausea, vomiting and abdominal distention. Nausea and vomiting is seen in approximately 100% of the times with pain and distention in approximately 70- 90% of the times (1). There can be obstipation, borborygmi and palpable tumour masses on clinical examination. MBO usually is associated with anaemia, hypoalbuminemia, renal dysfunction, dehydration, Ascites and cognitive deterioration.

3.5. Radiology in MBO:

Plain radiograph alone is enough for the diagnosis of obstruction in patients known to have abdominal malignancies. Gastrograffin provides good radiologic definition of the level of obstruction and also can be therapeutic in resolving obstructions of the small bowel. CECT provides excellent diagnosis about the extent of disease and level of obstruction with a sensitivity of 93% and specificity of 100% (7).

3.6. Treatment:

The possible treatment options include surgery, endoscopic palliation and pharmacological palliation. The treatment strategy is to be individualized after counseling the patient and the relatives regarding the prognosis of the treatment and the malignancy. The overall aim is to improve the quality of life and life expectancy.

3.6.1. Surgical:

The aim of surgical treatment is to decrease the tumour load and to relieve the obstruction. Surgery is to be done only if the survival expectancy is expected to be more than 2 months (1). The surgical options include tumour debulking, palliative resection or surgical bypass. Following operations 80% of patients with MBO have symptomatic relief (8). Studies have shown a 30 day mortality of 40% and a morbidity of 10-90% in patients with MBO who had undergone surgical therapy (8). They also have a 48% re-obstruction rate and a median survival of 7 months (9). There are no clear indications for surgery in advanced abdominal malignancies. However patients who have bowel obstruction, fistula formation, pelvic sepsis, tumour necrosis and haemorrhage can be considered for operative management. Age more than 65, ASA score more than 2, hypoalbuminemia, previous chemotherapy, previous radiotherapy and ascites of greater than 3 litres were found to have poor surgical outcomes (3,10). Medical therapy prior to surgery with nasogastric decompression, total parenteral nutrition and rehydration will give enough time to individualize the treatment options. Nasogastric decompression alone can resolve obstruction in 30% of times due to decompression of luminal pressure with a mean duration of 8 days (2). Total parenteral nutrition is used in Perioperative nutritional support. It was found to be of no value in patients not undergoing surgical therapy (11).

Cytoreductive surgery and hyperthermic intraperitoneal chemotherapy has emerged as the next step in the evolution of surgical treatment in patients with peritoneal surface malignancy of gastrointestinal origin. Recent advances also include multivisceral transplant. There were 3 cases done till now with a 2 year disease free follow up (13). All these together may bring down the incidence of malignant bowel obstruction by addressing the primary tumour load.

3.6.2. Endoluminal palliation:

Endoluminal stenting in recent years is used as an alternative therapy for MBO. In duodenal obstruction the

placement relieves symptoms in about 90% of the times. Common complications include haemorrhage, perforation and stent displacement. Similarly endoscopic gastric venting is done in patients with nausea with similar results as compared to surgical gastrostomy(2). Successful insertion of stent in colonic malignancy improves symptom in 75% of the times. Recurrence of obstruction can happen due to tumour growth through the permissible mesh of the stent(2).

3.6.3. Pharmacological palliation:

Pharmacological treatment is the last resort once surgical options are ruled out. This increases life expectancy by 3.5 months as compared to 7 months in patients who had surgical treatment (1). Pharmacological treatment is aimed at giving symptomatic relief. This includes analgesia, gastric venting, octreotide, antiemetic and corticosteroids. Analgesia is a must as most patients have colicky abdominal pain and morphine is the drug of choice in these patients according to European society of palliative care and WHO (2). Fentanyl is used in recent years and was found to be more potent and with minimal side effects as compared to morphine (14). Antiemetic drugs are required to prevent nausea and vomiting due to bowel obstruction. The common drugs that are used as antiemetic are Chlorpromazine, haloperidol, Hyocine, Metoclopramide, Olanzapine, corticosteroids. Corticosteroids had anti-inflammatory actions also which help in reducing the peritumoral edema and edema in the intestine. Octreotide has been tried in recent years with good success rates. Octreotide administered at 600 ug/day was found to block the VIP which in turn reduces intestinal oedema and colic causing symptomatic relief within 24 hours (15,16). Plexus block has been tried in these patients with mixed results.

4. Conclusions:

Nutrition is an important factor in addition to disease progression which decides the survival expectancy of patients with advanced abdominal malignancy. In MBO surgical therapy seems to be much more effective in improving nutrition and the general well-being of the patient. The quality of life and life expectancy can be enhanced by surgical intervention. However this may not be feasible in all cases, where palliations of symptoms by conservative measures are to be tried.

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