



BLOCKED OR NOT?

**Current Thinking in Malignant
Large Bowel Obstruction &
Pseudo-obstruction**



Aim

To discuss the investigation and management of large bowel obstruction and pseudo-obstruction

○ Objectives

- To discuss the management of two patient case examples
- Using these patient examples, discuss the investigation and management of large bowel obstruction and pseudo-obstruction
- To summarise the evidence in the literature regarding these conditions



Case 1

46 year old man

Apr **2WW referral:** Change in bowel habit & weight loss, malnourished, skin and bones

May **Barium enema:**
Complete obstruction to passage of barium in the distal sigmoid colon. Evidence of obstruction above with dilated air filled large bowel above. Cause of obstruction cannot be determined.

May **Admission from XRay**
Unwell, vomiting, abdo pain, diarrhoea
PMH: NIDDM, appendicectomy

What next...?



Case 1 - continued

Expandable metallic stent

Palliative Hartmann's procedure (liver mets)

Post-op chemotherapy

In this case colonic stenting enabled:-

- Immediate symptomatic relief
- Pre-operative resuscitation and bowel preparation
- Surgery to be performed electively



Case 2

80 year old man

15Feb

GP admission

Abdo distension, BNO 3 days, nausea & lethargy

Not PU'ed for 24 hours

PMH: Constipation, prostate cancer, CVA & left hemiparesis 11/05

DH: Aspirin, dipyridamole, simvastatin, zoladex

O/E: HR 106 (atrial fibrillation)

BP 128/73

RR 20

Sats 98% on air

Bibasal creps

Abdo distended, tympanic and non-tender

ECG → AF, ST depression / T inversion V2-6, LBBB

Bloods → Na 126, K 3.2, CRP 53.4, WCC 9.2





16Feb Rigid Σ → 1000mls stool / liquid
Flatus tube passed

CT abdo → Dilated large bowel. Caecum 8.5cm
Small bowel normal
?Sigmoid volvulus / tumour

17Feb CT findings → Pseudo-obstruction

What next ...?



Case 2 - continued

Colonoscopy → Decompression
Erythromycin
Sando K

18Feb Flatus tube reinserted

24Feb Transferred to Hospital for rehab

Malignant Large Bowel Obstruction

- >50% aged >70yrs
- Remember other causes: Volvulus / diverticula / stool
- Presentation depends on site
 - Right: Vomiting and abdo pain start earlier
 - Left: Preceding change in bowel habit / PR bleeding





LBO - Investigation

- Plain AXR
- Water-soluble contrast enema

Water-soluble contrast enema



Rectosigmoid lesion



Splenic flexure lesion



LBO - Investigation

- Plain AXR
- Water-soluble contrast enema
- ?Colonoscopy / sigmoidoscopy
- CT scan (also identifies distal spread)

CT Scan





LBO - Management

- Non-operative (pre-op adjuncts or definitive)
 - **Laser therapy (Nd-YAG)**
Kiefhaber et al 1986 (57 patients), Eckhauser et al 1992 (29 patients)
 - **Transanal endoscopic decompression**
Nozoe et al 2000 (5 patients), Tanaka et al 2001 (36 patients)
 - **Expandable metal stent**
Upto 60 yrs old obstruction with liver mets(bilateral)
60 and above with or without liver mets
Malnourished / severe comorbidity
Complications include stent migration, tumour ingrowth, perforation

Expandable metallic stent

- **Pre-op decompression**
 - Enable systemic support and bowel preparation
 - May obviate need for faecal diversion or on table lavage
- **Palliative**
 - Eliminate need for urgent colostomy





Expandable metallic stents - Evidence

- **Successful stent placement 85-100%**
Mainar 1999, Saida 1996, Tejero 1997
- **Successful decompression 80-100%**
De Gregorio 1998, Mainar 1999, Saida 1996
- **Complications 14-42%**
Binkert 1998, De Gregorio 1998
 - Perforation most common
 - Stent migration 5%, re-occlusion
 - Curative to palliative
- **Medium term patency 91-100% at 6 months**



LBO - Management

- Operative
 - Right sided obstruction
 - Right hemicolectomy with primary anastomosis
NB 10% leak rate, 17% mortality. Staple selectively.
 - Right hemicolectomy with exteriorisation of both ends
 - Ileo-transverse bypass
 - Transverse colon
 - Extended right hemicolectomy
 - Left sided obstruction
 - 3 stage vs. 2 stage vs. 1 stage

Acute Colonic Pseudo-obstruction

- 80% have underlying cause
- Commonest conditions are
 - Metabolic
 - Trauma
 - Cardiorespiratory
- About 200 deaths per annum
- Aetiology: Altered autonomic regulation of colonic motor function
- Symptoms & signs of LBO
- 82% left sided

Table 1. Predisposing conditions associated with acute colonic pseudo-obstruction (ACPO) – an analysis of 400 cases*

Condition	Number	Percentage
Trauma (non-operative)	45	11.3
Infection (pneumonia, sepsis most common)	40	10.0
Cardiac (myocardial infarction, heart failure)	40	10.0
Obstetrics/gynaecology	39	9.8
Abdominal/pelvic surgery	37	9.3
Neurological (Parkinson's disease, spinal cord injury, multiple sclerosis, Alzheimer's disease)	37	9.3
Orthopaedic surgery	29	7.3
Miscellaneous medical conditions (metabolic, cancer, respiratory failure, renal failure)	128	32
Miscellaneous surgical conditions (urologic, thoracic, neurosurgery)	47	11.8

* Associated conditions in 400 patients, reported by Vanek and Al-Safi⁶. Some patients had more than one associated condition.

ACPO - Investigation

- Plain AXR
 - **NB** Caecum >12cm or duration >6 days = Risk of perforation
- Water-soluble contrast enema
 - Koruth et al 1985
 - 91 patients had contrast enema
 - 79 clinically LBO
 - 50 obstructed
 - 29 no obstruction (11 colonic pathology, 18 ACPO)
 - 12 clinically ACPO
 - 2 had colonic cancer
- CT scan



ACPO - Management

- Non-operative

- Supportive treatment
 - Stop drugs affecting gut motility
 - Correct electrolyte abnormalities
 - NG tube / flatus tube
- Pharmacological
 - Neostigmine (reversible Anti-cholinesterase inhibitor)

Table 3. Neostigmine for colonic decompression in patients with ACPO

Study	Number	Design	Intravenous dose (mg)	Decompression	Recurrence
Ponec <i>et al.</i> ¹⁸	21 (neostigmine 11, placebo 10)	RCT (OL in non-responders)	2.0 over 3–5 min	10/11 in RCT 17/18 total	2
Hutchinson and Griffiths ²³	11	OL	2.5 in 1 min	8/11	0
Stephenson <i>et al.</i> ²⁴	12	OL	2.5 over 1–3 min	12/12 (2 patients required 2 doses)	1
Turegano-Fuentes <i>et al.</i> ²⁵	16	OL	2.5 over 60 min	12/16	0
Trevisani <i>et al.</i> ²⁶	28	OL	2.5 over 3 min	26/28	0
Paran <i>et al.</i> ²⁷	11	OL	2.5 over 60 min	10/11 (2 patients required 2 doses)	0
Abeyta <i>et al.</i> ²⁸	8	Retrospective	2.0	6/8 (2 patients required 2 doses)	0
Loftus <i>et al.</i> ¹⁷	18	Retrospective	2.0	16/18	5
Total	122			107 (88%)	8 (7%)

OL, open label; RCT, randomized-controlled trial; ACPO, acute colonic pseudo-obstruction.

- Erythromycin (motilin receptor agonist)
 - Armstrong *et al* 1991 – 500mg qds for 10 days

- Colonoscopic decompression
 - Indicated where caecum > 10cm or fail to settle 24-48 hours
 - Successful 73-90% of patients
 - BUT 15-29% recurrence
 - Risk of perforation 3%

Study	Number	Successful initial decompression (%)	Overall colonoscopic success (%)	Complications (%)
Nivatvongs <i>et al.</i> ³⁴	22	68	73	<1 (no perforations)
Strodel <i>et al.</i> ³⁵	44	61	73	2 (1 perforation)
Bode <i>et al.</i> ³⁶	22	68	77	4.5 (1 perforation)
Jetmore <i>et al.</i> ⁷	45	84	36	<1 (no perforations)
Geller <i>et al.</i> ³⁷	41	95	88	2 (2 perforations)



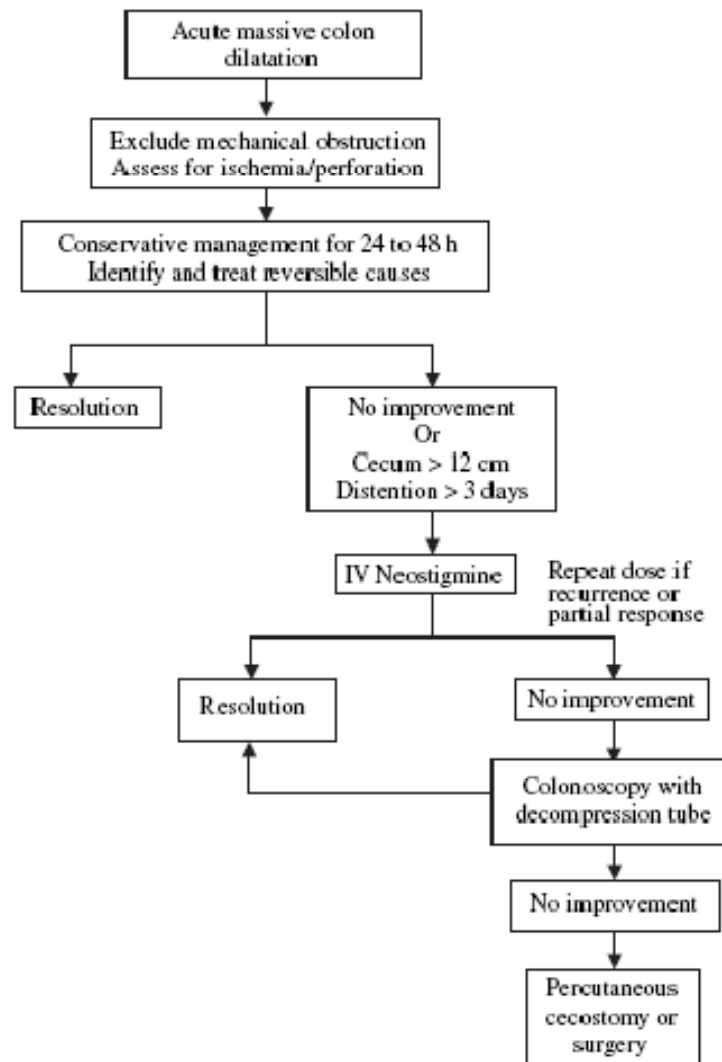
ACPO - Management

○ Operative

- Indications
 - Signs of colonic ischaemia or perforation
 - Failure of non-operative treatment
 - Caecal distension (9-12cm)
 - Continued caecal distension >48-72 hours
- Procedures
 - Percutanous or trephine caecostomy
 - Laparotomy +/- right hemicolectomy
 - Primary anastomosis vs. Ileostomy & mucous fistula

30% morbidity and 6% mortality (Vanek et al 1986)

American Society for Gastrointestinal Endoscopy 2002
Algorithm for acute colonic pseudo-obstruction





Conclusions

- ALL patients with suspected large bowel obstruction *without evidence of perforation* should undergo water-soluble contrast enema or CT to exclude pseudo-obstruction
- Surgery for malignant LBO should be performed electively and after staging where feasible
- The definitive management of pseudo-obstruction remains unclear



○ Objectives

- To discuss the management of two patient case examples
- Using these patient examples, discuss the investigation and management of large bowel obstruction and pseudo-obstruction
- To summarise the evidence in the literature regarding these conditions