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)
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%**

- **Successful decompression 80-100%**

- **Complications 14-42%**
  - 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 hemicolecetomy with primary anastomosis
    - **NB 10% leak rate, 17% mortality. Staple selectively.**
    - Right hemicolecetomy with exteriorisation of both ends
    - Ileo-transverse bypass
  
  - Transverse colon
    - Extended right hemicolecetomy
  
  - 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
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>
<thead>
<tr>
<th>Study</th>
<th>Number</th>
<th>Design</th>
<th>Intravenous dose (mg)</th>
<th>Decompression</th>
<th>Recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ponce et al.²⁴</td>
<td>21</td>
<td>RCT (OL in non-responders)</td>
<td>2.0 over 3–5 min</td>
<td>10/11 in RCT</td>
<td>2</td>
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<tr>
<td>Armstrong et al. ²⁵</td>
<td>14</td>
<td>OL</td>
<td>2.5 in 3 min</td>
<td>8/11</td>
<td>6</td>
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<tr>
<td>Stephens et al.²⁶</td>
<td>12</td>
<td>OL</td>
<td>2.5 over 1–3 min</td>
<td>12/12 (2 patients required 2 doses)</td>
<td>1</td>
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<tr>
<td>Troxler-Troche et al.²⁷</td>
<td>16</td>
<td>OL</td>
<td>2.5 over 60 min</td>
<td>15/16</td>
<td>0</td>
</tr>
<tr>
<td>Pardo et al.²⁷</td>
<td>11</td>
<td>OL</td>
<td>2.5 over 3 min</td>
<td>26/28</td>
<td>0</td>
</tr>
<tr>
<td>Abeyta et al.²⁸</td>
<td>8</td>
<td>Retrospective</td>
<td>2.0</td>
<td>16/18</td>
<td>5</td>
</tr>
<tr>
<td>Lizsin et al.²⁹</td>
<td>18</td>
<td>Retrospective</td>
<td>2.0</td>
<td>107 (85%)</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td></td>
<td></td>
<td>107 (85%)</td>
<td>5 (7%)</td>
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</tbody>
</table>

OL, open label; RCT, randomised-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%

<table>
<thead>
<tr>
<th>Study</th>
<th>Number</th>
<th>Successful initial decompression (%)</th>
<th>Overall colonoscopic success (%)</th>
<th>Complications (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nivetvongs et al.</td>
<td>22</td>
<td>68</td>
<td>73</td>
<td>&lt;1 (no perforations)</td>
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<tr>
<td>Strodel et al.</td>
<td>44</td>
<td>61</td>
<td>73</td>
<td>2 (1 perforation)</td>
</tr>
<tr>
<td>Bode et al.</td>
<td>22</td>
<td>68</td>
<td>77</td>
<td>4.5 (1 perforation)</td>
</tr>
<tr>
<td>Jetmore et al.</td>
<td>45</td>
<td>84</td>
<td>36</td>
<td>&lt;1 (no perforations)</td>
</tr>
<tr>
<td>Geller et al.</td>
<td>41</td>
<td>95</td>
<td>88</td>
<td>2 (2 perforations)</td>
</tr>
</tbody>
</table>
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
    ○ Percutanoues or trephine caecostomy
    ○ Laparotomy +/- right hemicolecctomy
    ○ 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

Acute massive colon dilatation

Exclude mechanical obstruction
Assess for ischemia/perforation

Conservative management for 24 to 48 h
Identify and treat reversible causes

Resolution

No improvement
Or
Cecum > 12 cm
Distention > 3 days

Repeat dose if recurrence or partial response

IV Neostigmine

Resolution

Coloscopy with decompression tube

No improvement

Percutaneous cecostomy or surgery
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.
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