Mechanical Bowel Obstruction vs. Ileus

Additional Information

Terminology and Classification

Mechanical Obstruction: GI contents cannot pass because lumen is blocked

Functional or Neurogenic Obstruction: GI contents cannot pass secondary to abnormal or absent peristalsis; often called ileus in reference to small bowel, and pseudoobstruction or Ogilvie's when referring to large bowel

Terminology cont….

Complete obstruction (SBO): lumen totally occluded

Partial or Incomplete obstruction (PSBO): lumen is partially occluded, but permits some passage of fluid and air

Ischemic bowel: blood flow to the obstructed segment is compromised, which can quickly progress to ischemia and subsequent tissue necrosis and perforation

Ileus: Functional Small Bowel Obstruction

- Inhibition of gastrointestinal motor function
- Physical exam: abdominal distension and absence of bowel sounds
- Findings on radiographic imaging include: dilated large and small bowel and distal/rectal air
- Resolution of ileus is signaled clinically by return of bowel sounds, passage of flatus, and bowel movements

Ileus cont…

- Possible etiologies:
  - Often occurs after laparotomy or laproscopic abdominal exploration, especially when bowel has been resected
  - Inflammation
  - Anticholinergic medications, opioids/narcotics, and inhaled anesthetics
  - Electrolyte disturbances (K+, Mg2+, Ca2)
- Postulated that the incidence of ileus is decreased with laproscopic procedures

Ileus Management

- Traditionally:
  - minimize opioid analgesia,
  - nasogastric decompression until flatus returns,
  - IV hydration with slow advancement of diet
- Evidence has failed to show clinical benefit of nasogastric tubes, and some studies link NG tubes with increased post-op complications*
- Approach to post-op feeding also challenged, as earlier feeding results in shortened hospital stays*
- Epidural rather than systemic analgesia

*Reference: Cheatham ML, Chapman WC, Key SP, et al. A meta-analysis of selective versus routine nasogastric decompresion after elective laparotomy. *Ann Surg.* 1995; 221:469-476

Ogilvie Syndrome: Colonic Pseudobstruction

- A paralytic ileus of the large bowel only
- Presents as rapidly progressive abdominal distention, often without associated pain
- Plain films reveal colonic distension
- If colon is massively dilated (>13-15cm), blood flow can become compromised, leading to ischemia and possible perforation
- Perforation is the most feared complication and occurs in 3-15% with a 50% mortality

Ogilvie Cont….

- Pathophysiology not well understood, but multiple traumatic, metabolic, and pharmacologic factors may be involved, leading to altered autonomic regulation of colon
- Risk Factors: orthopedic trauma/surgery, severe blunt abdominal trauma, acute cardiac events or CABG, psychotropic medications, opiate use, acute neurological events or neurosurgical procedures, and infection

Ogilvie Diagnosis

- Usually can be made by plain film
- Colonic dilatation, most prominent in cecum and right colon
- Colonoscopy can be diagnostic and therapeutic
- Bowel ischemia suggested if localized tenderness, leukocytosis, metabolic acidosis, evidence of sepsis, or rapidly declining clinical course

Ogilvie Management

- Early recognition, exclusion of mechanical obstruction
- Resuscitation and correction of fluid and electrolyte abnormalities
- NPO and NG tube placement for vomiting
- Expectant management for patients with no pain or signs of toxicity or ischemia, typically resolves in 3 days
- If massively dilated (cecum >12cm,) consider surgery if colonoscopic decompression not possible

Ogilvie Medical Management

- Consider IV Neostigmine
  - Enhances colonic motor activity and induces propulsion and accelerated transit of GI contents
  - A reversible AChE inhibitor, indirectly stimulates muscarinic parasympathetic receptors
- Consider colonoscopic decompression
- Other pharmacologic options:
  - Prokinetic agents: erythromycin, cispride
  - Sympatholytics, spinal sympathetic block

Indications for Surgery

- Rapidly progressive abdominal pain or massive dilation, with or without peritoneal findings
- Development of peritoneal findings, fever, diminished urine output, leukocytosis, hyperamylasemia, metabolic acidosis
- Failure of obstructive picture to resolve over 24-48 hours, even if evolving symptoms or peritoneal signs are absent