7

Acute Abdominal Conditions

Key Points
7.1 Assessment and Diagnosis

REFERRED ABDOMINAL PAIN

• Foregut pain
  – Stomach, duodenum, gallbladder
  – Referred to the upper abdomen

• Midgut pain
  – Small intestine, appendix, right colon
  – Referred to the mid abdomen

• Hindgut pain
  – Mid-transverse, descending, sigmoid colon, rectum
  – Referred to lower abdomen
7.1 Assessment and Diagnosis

REFERRED ABDOMINAL PAIN

• Diseased retroperitoneal organs (kidney, pancreas) may present with back pain

• Ureteric pain radiates to the testicle or labia

• Diaphragmatic irritation presents as shoulder tip pain
7.2 Intestinal Obstruction

- In small bowel obstruction, pain is mid-abdominal
- In large bowel obstruction the pain is below the umbilicus
- The more proximal the bowel obstruction, the more frequent the vomiting
- The more distal the bowel obstruction, the more distended the abdomen
7.2 Intestinal Obstruction

- For paralytic ileus (non-mechanical obstruction)
  - Provide nasogastric suction and intravenous fluids until gut function returns
  - Maintain fluid and electrolyte balance
  - Treat the underlying medical cause
  - Treat the underlying surgical cause with operation, as indicated
7.2 Intestinal Obstruction

OPERATIVE MANAGEMENT OF SMALL INTESTINE OBSTRUCTION

• Intestinal gangrene is
  – An indication for laparotomy and intestinal resection
  – Suspected when there is continuous abdominal pain
  – Associated with tachycardia and fever
  – Often associated with reduced blood pressure (shock is a late sign)
  – Associated with abdominal tenderness, guarding and absent bowel sounds
7.2 Intestinal Obstruction

OPERATIVE MANAGEMENT OF SMALL INTESTINE OBSTRUCTION

• Gangrene is an indication for small bowel resection

• Strangulated hernia and small bowel obstructions from adhesions can lead to gangrene

• The technique for anastomosis of the small bowel is the same for all indications
7.3 Peritonitis

• Intestinal obstruction may respond to non-operative management, but peritonitis indicates gangrene or perforation and therefore requires surgery

• Surgical intervention will depend on the diagnosis of the cause of the peritonitis: e.g., appendectomy, closure of a perforation or drainage of an abscess
7.3 Peritonitis

The major causes of peritonitis include:

- Appendicitis
- Perforated peptic ulcer
- Anastomotic leak following surgery
- Strangulated bowel
- Pancreatitis
- Cholecystitis
- Intra-abdominal abscess
- Hematogenous spread of infective agents such as typhoid or tuberculosis
- Typhoid perforation
- Ascending infection: e.g. salpingitis, postpartum infection
7.3 Peritonitis

**CLINICAL FEATURES**

- Sharp pain, worse on movement or coughing
- Fever
- Abdominal distention, tenderness and guarding
- Diminished or absent bowel sounds
- Shoulder pain (referred from diaphragm)
- Tenderness on rectal or vaginal examination (suggests pelvic peritonitis)

- These features may be minimal in elderly patients, the very young and those with immunosuppressed
7.3 Peritonitis

**MANAGEMENT**

1. Make a differential diagnosis of the most likely underlying cause of the peritonitis / abscess

2. Administer normal saline or Ringer’s lactate, depending on the serum electrolytes

3. Insert a nasogastric tube and commence aspirations

4. Give triple antibiotic therapy intravenously, providing aerobic, Gram negative and anaerobic coverage
   - E.g. ampicillin 2 gm IV every 6 hours plus gentamicin 5 mg/kg IV every 24 hours plus metronidazole 500 mg IV every 8 hours

5. Record fluid balance and vital signs on the bedside chart every six hours
7.4 Stomach and Duodenum

- Peptic ulcers are caused by *Helicobacter pylori* infection
- The treatment of *Helicobacter pylori* is triple medical therapy
  - Proton-pump inhibitors (PPIs)
  - Antibiotics
  - Bismuth subsalicylate

- Surgery is indicated for obstruction, bleeding and perforations

- Surgical treatment of bleeding or obstructive complications of peptic ulcer should be performed by a specialist
7.4 Stomach and Duodenum

PERFORATED PEPTIC ULCER
7.5 Gallbladder

**CHOLECYSTITIS**

- Caused by obstruction of the cystic duct by gall stones

- Presents with epigastric cramps then pain which radiates to the right upper quadrant

- May be treated by drainage of the gallbladder (cholecystectomy)

- When complicated with pyogenic infection, requires urgent cholecystostomy and intravenous antibiotics

- Should be referred to a surgical specialist if the patient is jaundiced
7.5 Gallbladder

CHOLECYSTITIS
7.6 Appendix

**ACUTE APPENDICITIS**

- Untreated, the infection progresses to:
  1. Local peritonitis with formation of an appendicular mass
  2. Abscess formation
  3. Gangrene of the appendix
  4. Perforation
  5. General peritonitis

- Treat acute, gangrenous or perforated appendix with appendectomy

- Treat appendicular mass with medical management

- Treat appendicular abscess with incision and drainage
7.6 Appendix

**ACUTE APPENDICITIS**

- Pulse and temperature are normal in early appendicitis
- Tenderness in the right lower quadrant is the most reliable sign
- Retrocecal and pelvic appendicitis may not have right lower quadrant tenderness
- Rectal examination assists in the diagnosis of a pelvic appendix
- Vaginal examination will help differentiate salpingitis and ectopic pregnancy
- Rectal examination should always be performed
7.6 Appendix

ACUTE APPENDICITIS
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SURGERY FOR INTUSSUSCEPTION

• Do not pull on the ileum; rather, squeeze the leading edge through the colon

• Do not perform an incidental appendectomy: if the intussusception recurs, repeat procedures will be compromised

• The last few centimetres of manual reduction are the most difficult, be patient

• Sero-muscular splits may occur but are not a problem if the mucosa is intact
7.6 Appendix

INTUSSUSCEPTION

Operative Technique
7.6 Appendix

SIGMOID VOLVULUS

• Usually subacute

• Associated with repeated previous episodes

• The most common cause of large bowel obstruction seen at the district hospital

• Associated with massive but soft abdominal distention

• Seen in well-hydrated patients

• Complicated with vomiting and abdominal pain as a late finding
7.6 Appendix

SIGMOID VOLVULUS

- When neglected, can progress to strangulation and gangrene

- Subacute sigmoid volvulus can be reduced by the placement of a rectal tube

- Refer patients after non-operative or operative volvulus reduction for elective surgical management

- Suspect gangrene if you see darkened bowel- or blood-stained fluid at sigmoidoscopy

- Operate if you suspect gangrene and, if necessary, perform a sigmoid resection with colostomy
7.6 Appendix

SIGMOID VOLVULUS

• The generalist at the district hospital should be capable of performing a colostomy but should refer patients to a qualified surgeon for colonic anastomosis and colostomy closures.