7

Acute abdominal conditions

Key Points

7.1 ASSESSMENT AND DIAGNOSIS
Referred abdominal pain

- **Fore gut pain** (stomach, duodenum, gall bladder) is referred to the upper abdomen

- **Mid gut pain** (small intestine, appendix, right colon) is referred to the mid abdomen

- **Hind gut pain** (mid transverse, descending, sigmoid colon and rectum) occurs in 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 while 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 intestinal 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 intestinal 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: for example, appendectomy, closure of a perforation or drainage of an abscess.

7.3 Peritonitis
Causes

The major causes of peritonitis include:

- Appendicitis
- Perforated peptic ulcer
- Anastomotic leak following surgery
- Strangulated bowel
- Pancreatitis
- Cholecystitis
- Intra-abdominal abscess
- Haematogenous spread of infective agents such as typhoid or tuberculosis
- Typhoid perforation
- Ascending infection: for example, in salpingitis and postpartum infection.

7.3 Peritonitis
Clinical features

- Clinical features of peritonitis include:
  - Sharp pain, which is worse on movement or coughing
  - Fever
  - Abdominal distension, 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 immune suppression.

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 electrolyte results.
3. Insert a nasogastric tube and commence aspirations.
4. Give triple antibiotic therapy intravenously, providing aerobic, gram negative and anaerobic coverage: For example, ampicillin 2 g IV every hours plus gentamicin 5 mg/kg body weight 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 inhibitors
  - 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

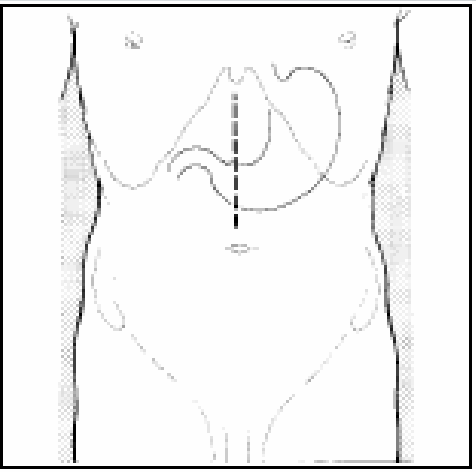
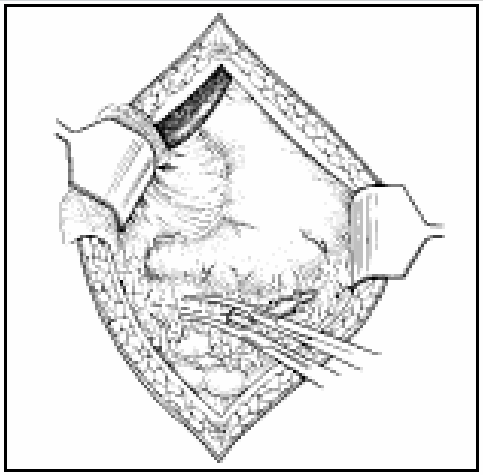


Figure 7.1



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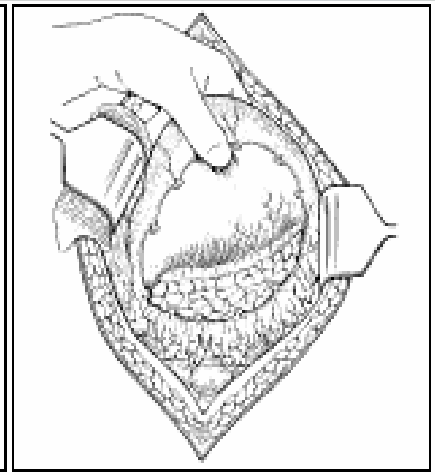

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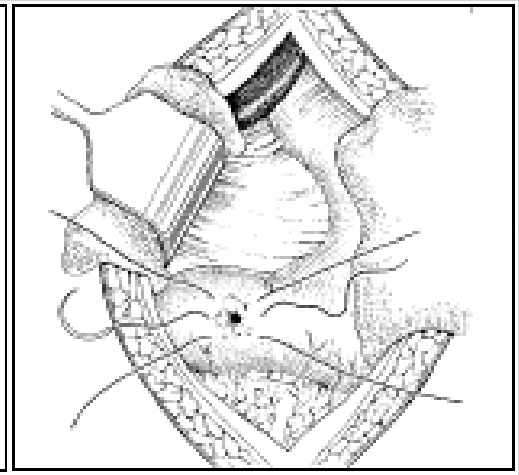

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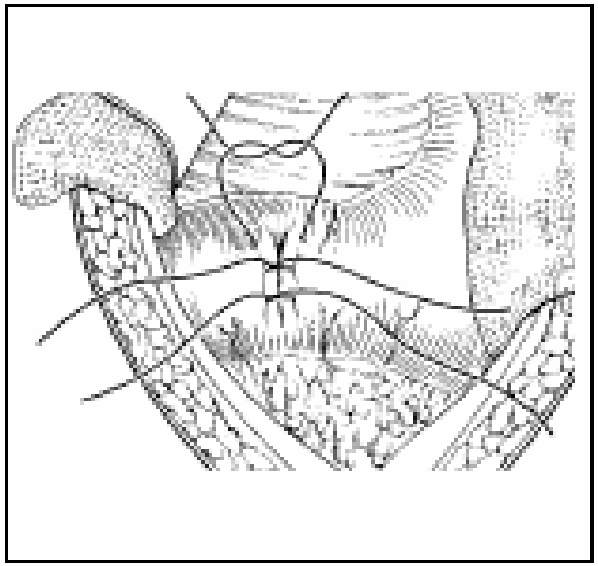

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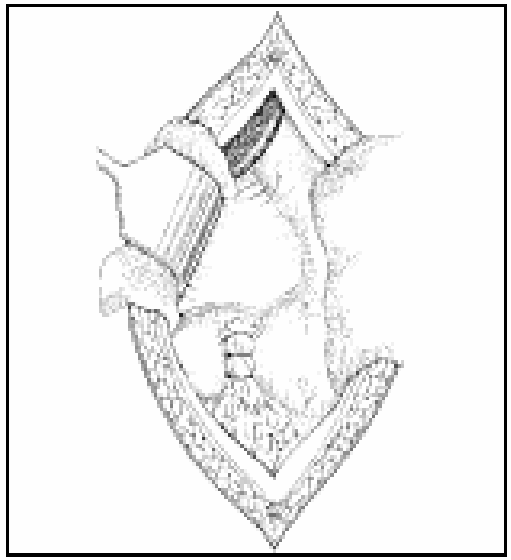

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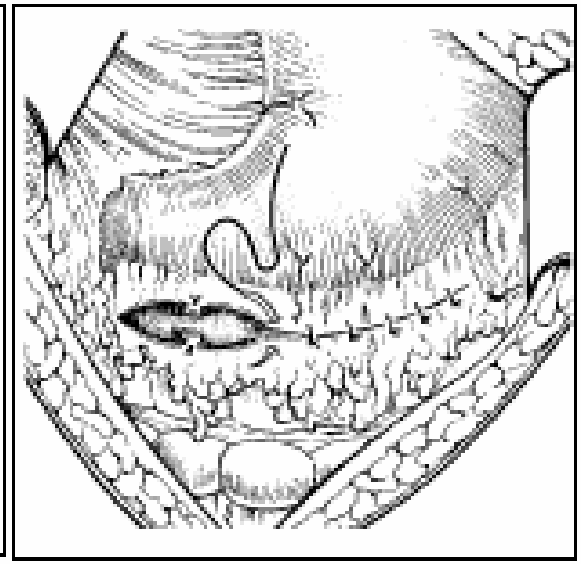


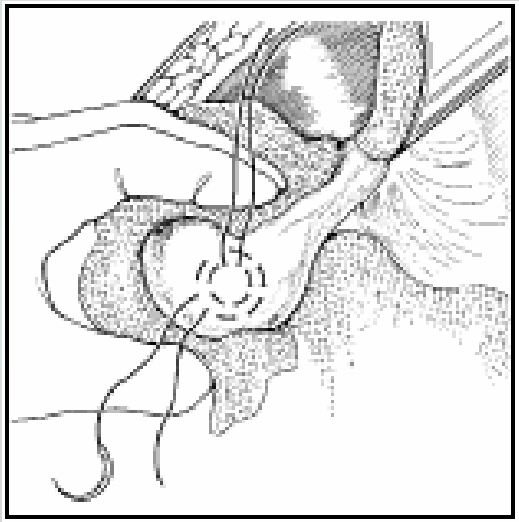
Figure 7.7

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 (cholecystostomy)
- 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
Cholecystostomy



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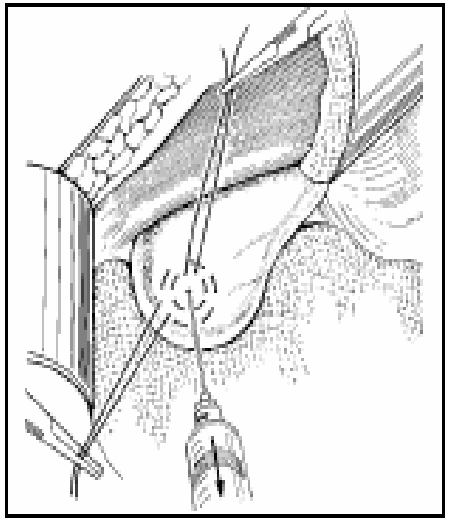

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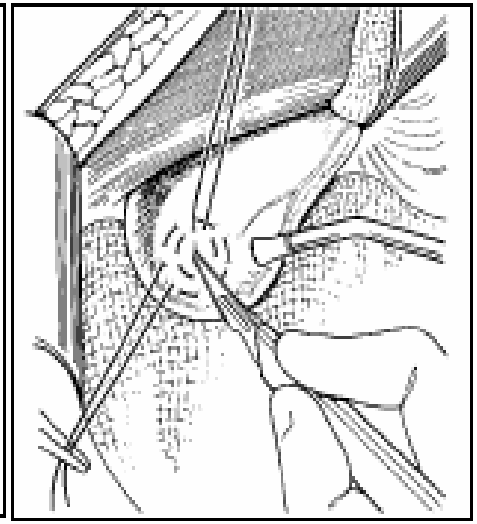

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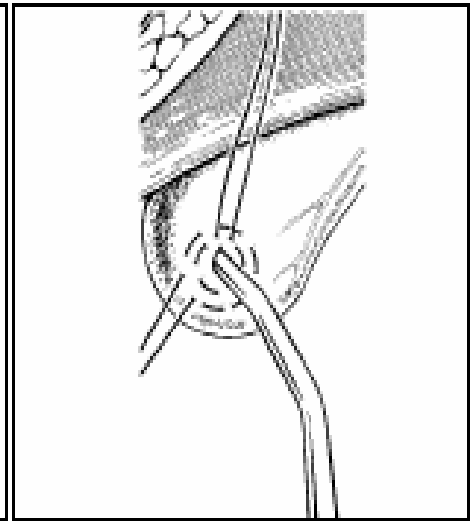

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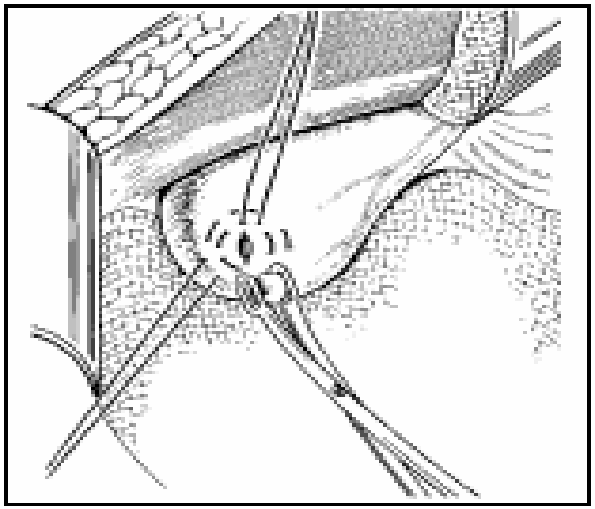

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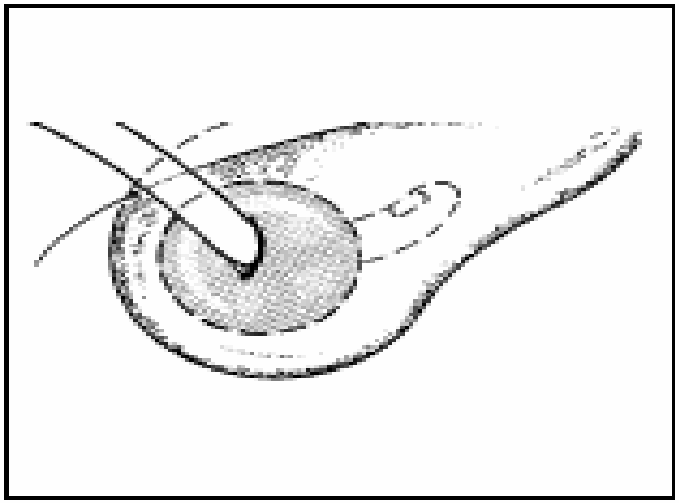

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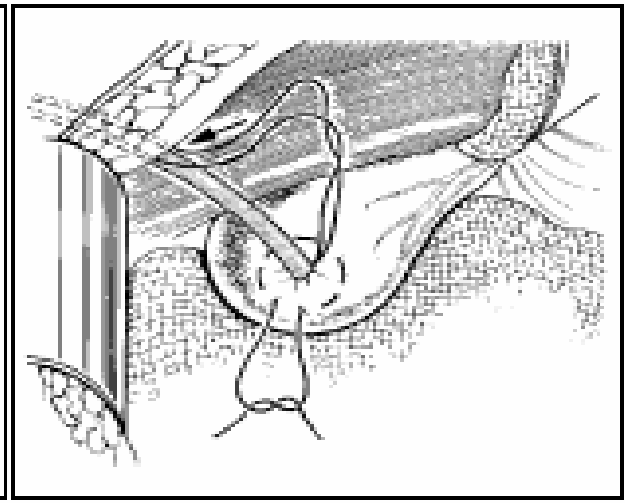


Figure 7.14

7.6 APPENDIX

Acute appendicitis

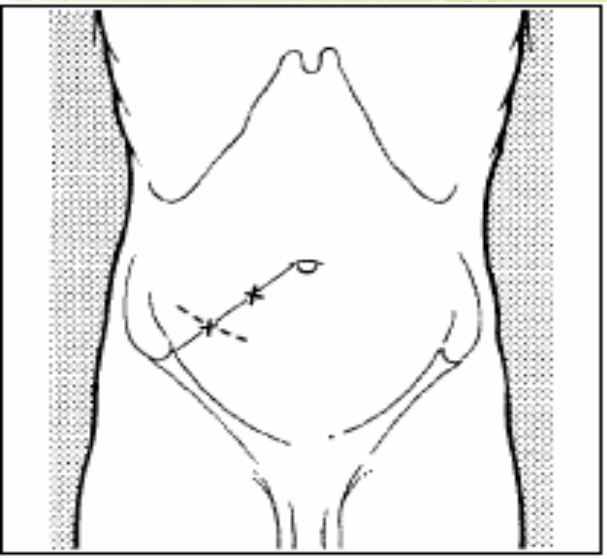
- Untreated, the infection progresses to:
  1. Local peritonitis with formation of an appendicular mass
  2. Abscess formation
  3. Gangrene of the appendix
  4. Perforation
  5. General peritonitis.
- Treat acute, gangrenous or perforated appendix with appendectomy
- Treat appendicular mass with medical 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
- Retroceacal 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
Emergency Appendectomy



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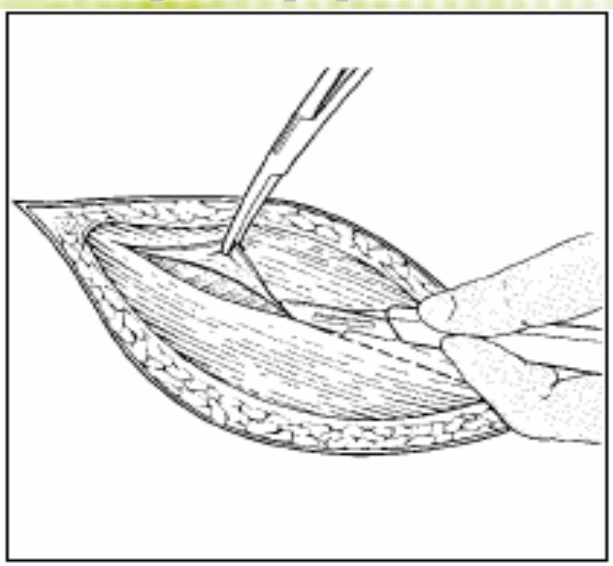

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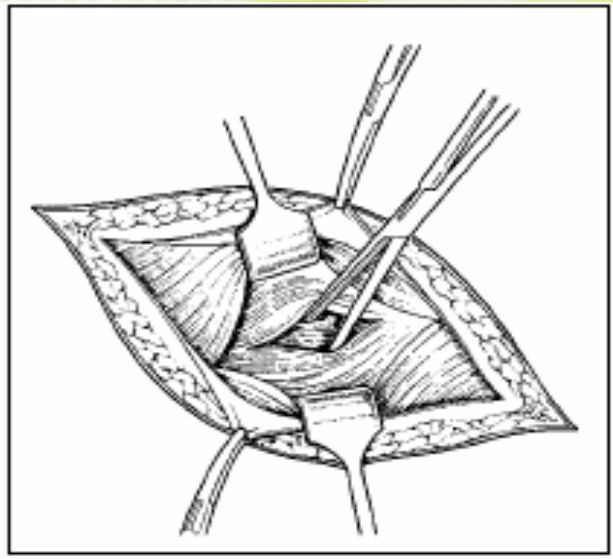

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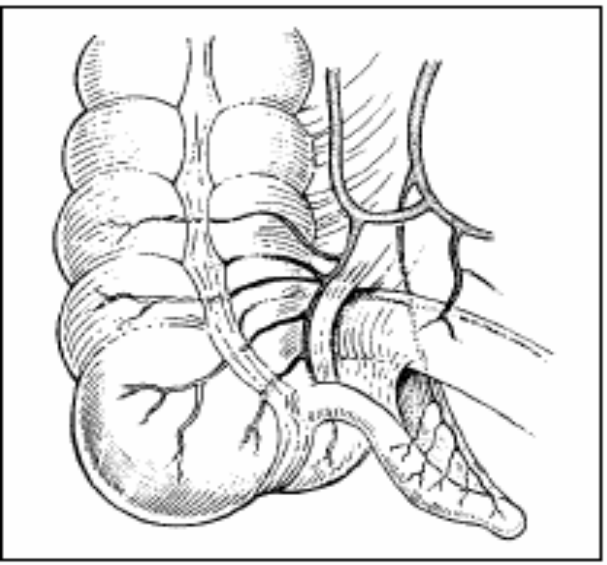

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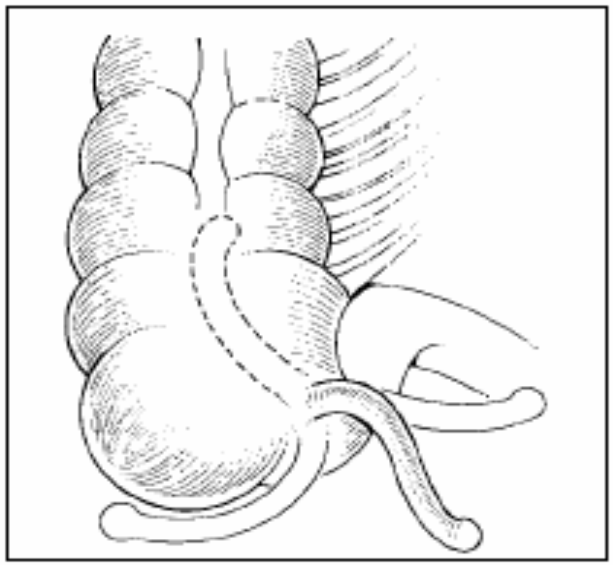

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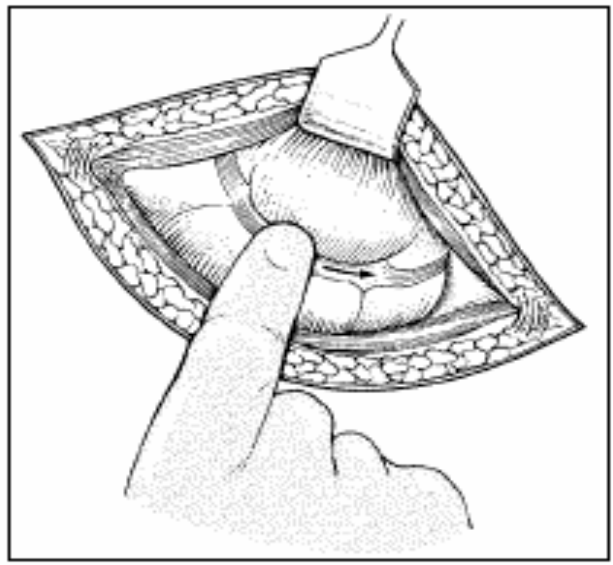
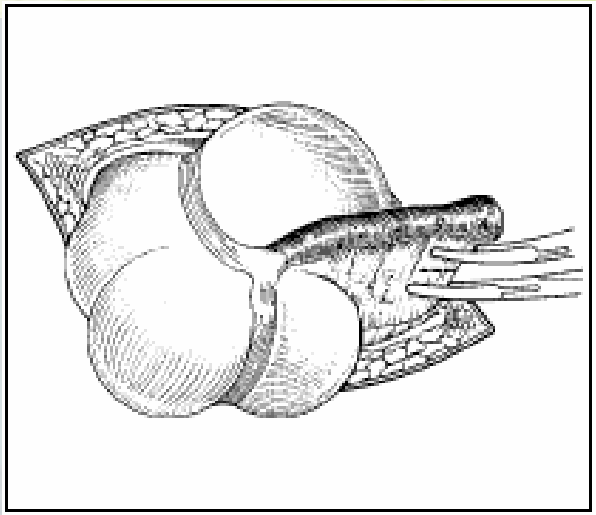


Figure 7.20

7.6 APPENDIX
Emergency Appendectomy



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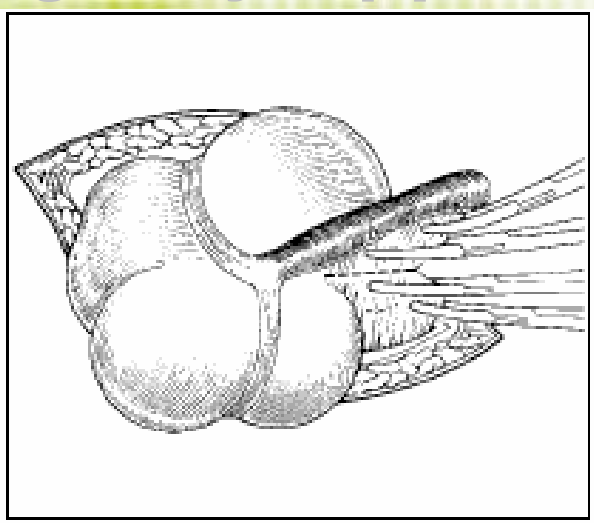

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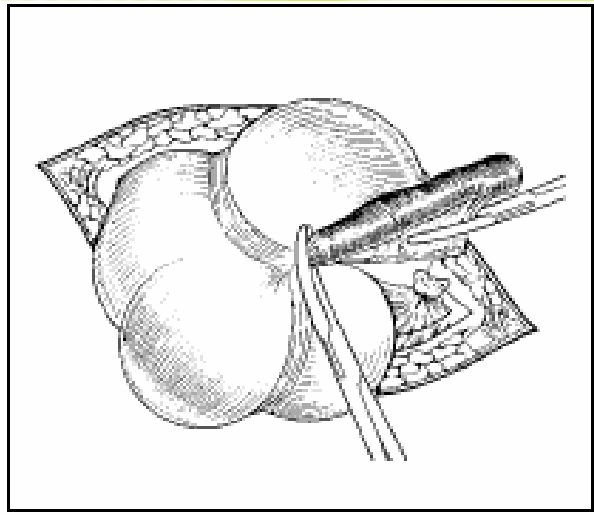

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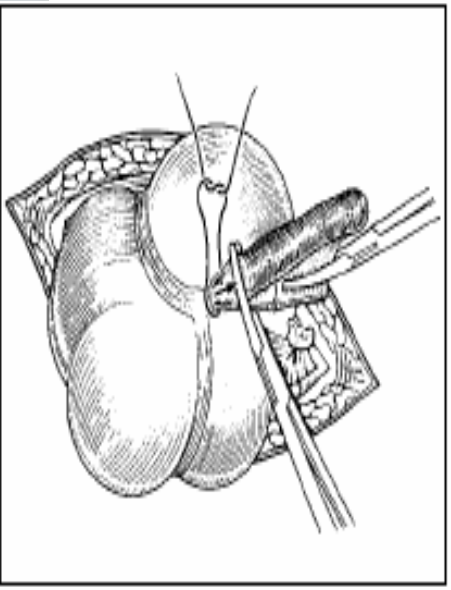

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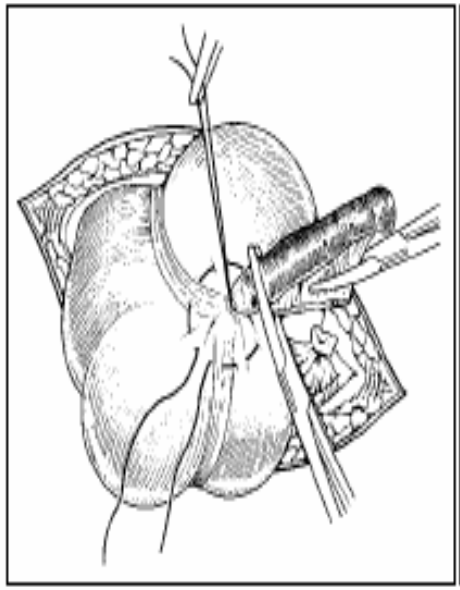

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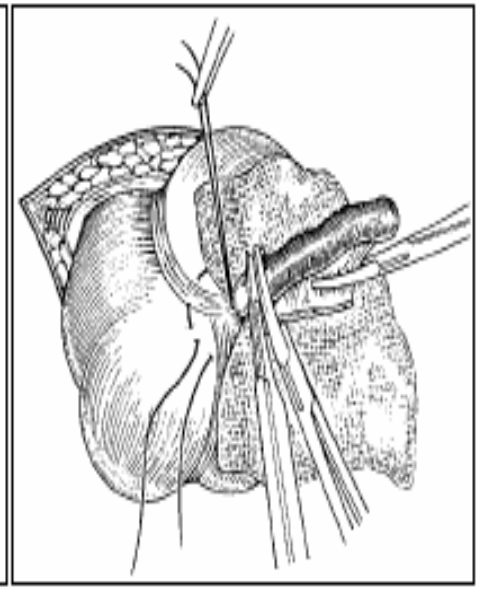

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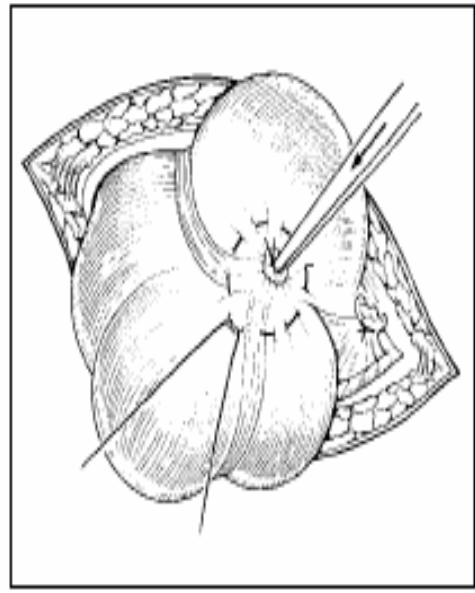


Figure 7.27

7.6 APPENDIX

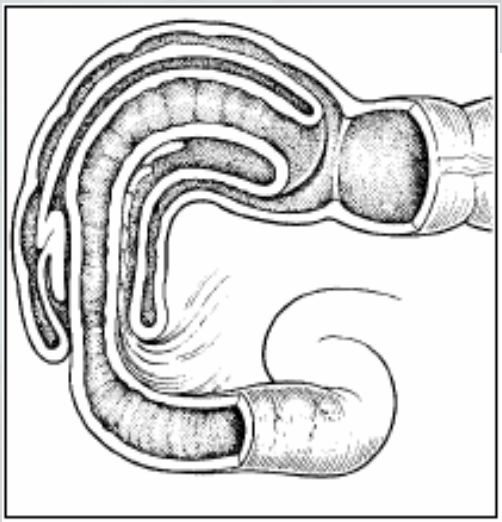
Surgery for intussusception:

- 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



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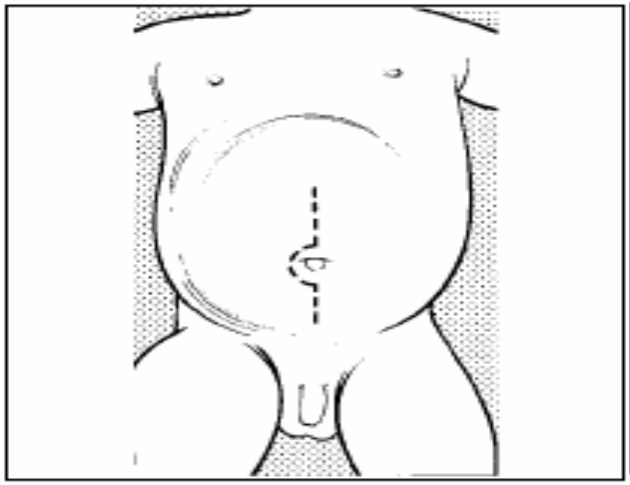

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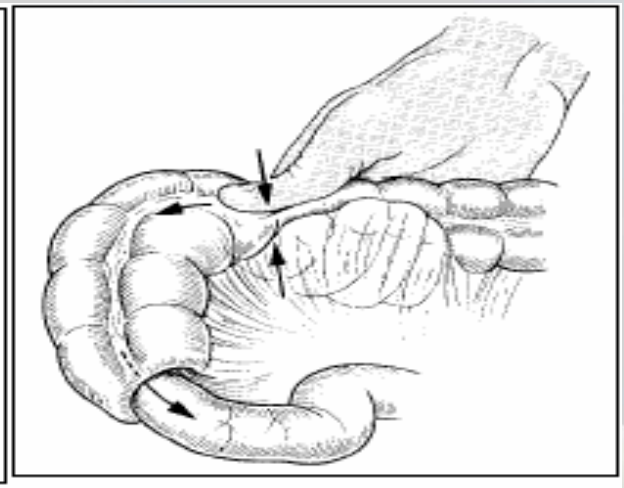
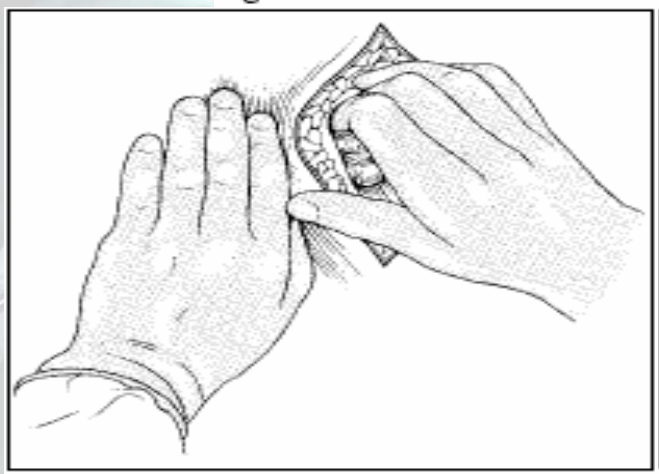


Figure 7.30



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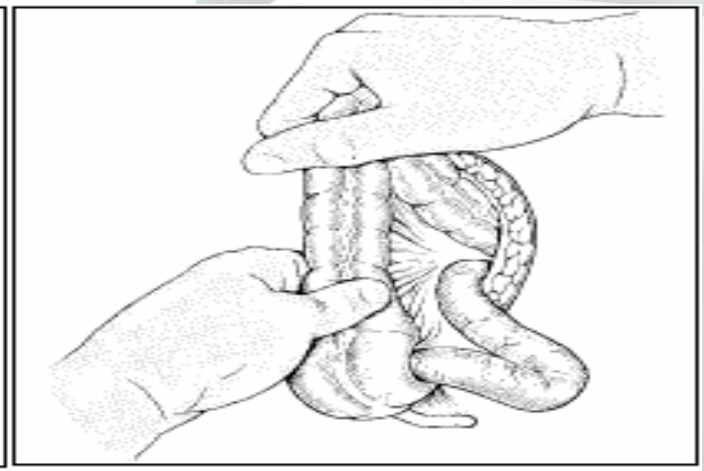


Figure 7.32

7.6 APPENDIX
Sigmoid Volvulus

Volvulus of the sigmoid colon :

- Usually sub-acute
- Associated with repeated previous episodes
- The most common cause of large bowel obstruction seen at the district hospital
- Associated with massive but soft abdominal distension
- Seen in well hydrated patients
- Complicated with vomiting and abdominal pain as a late finding

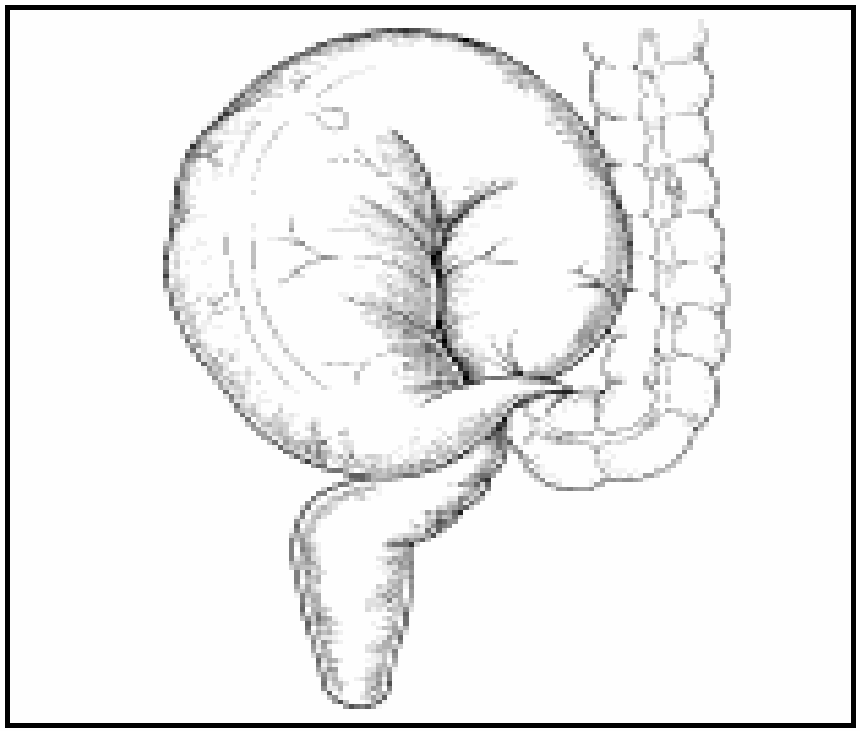
7.6 APPENDIX
Sigmoid Volvulus

- When neglected, can progress to strangulation and gangrene
- Sub-acute 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.



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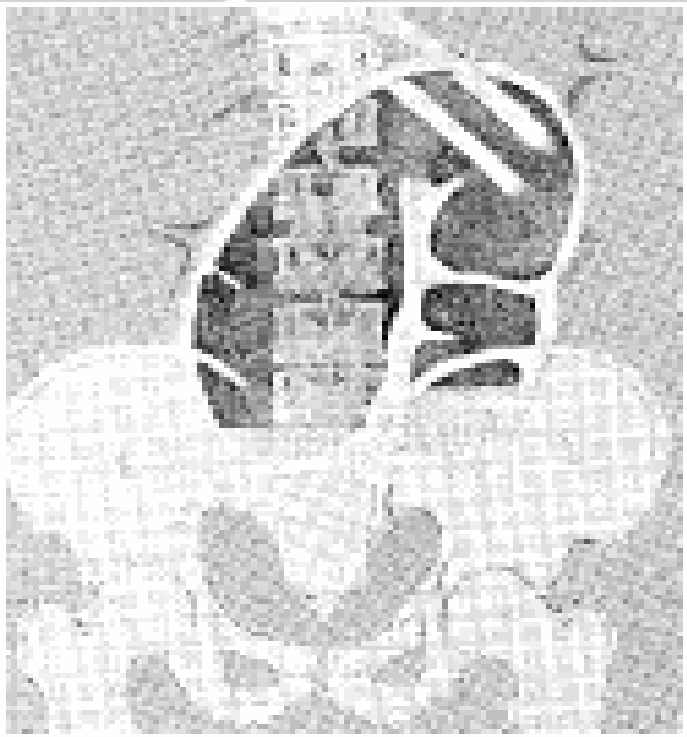

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