Radiology of common GIT Diseases

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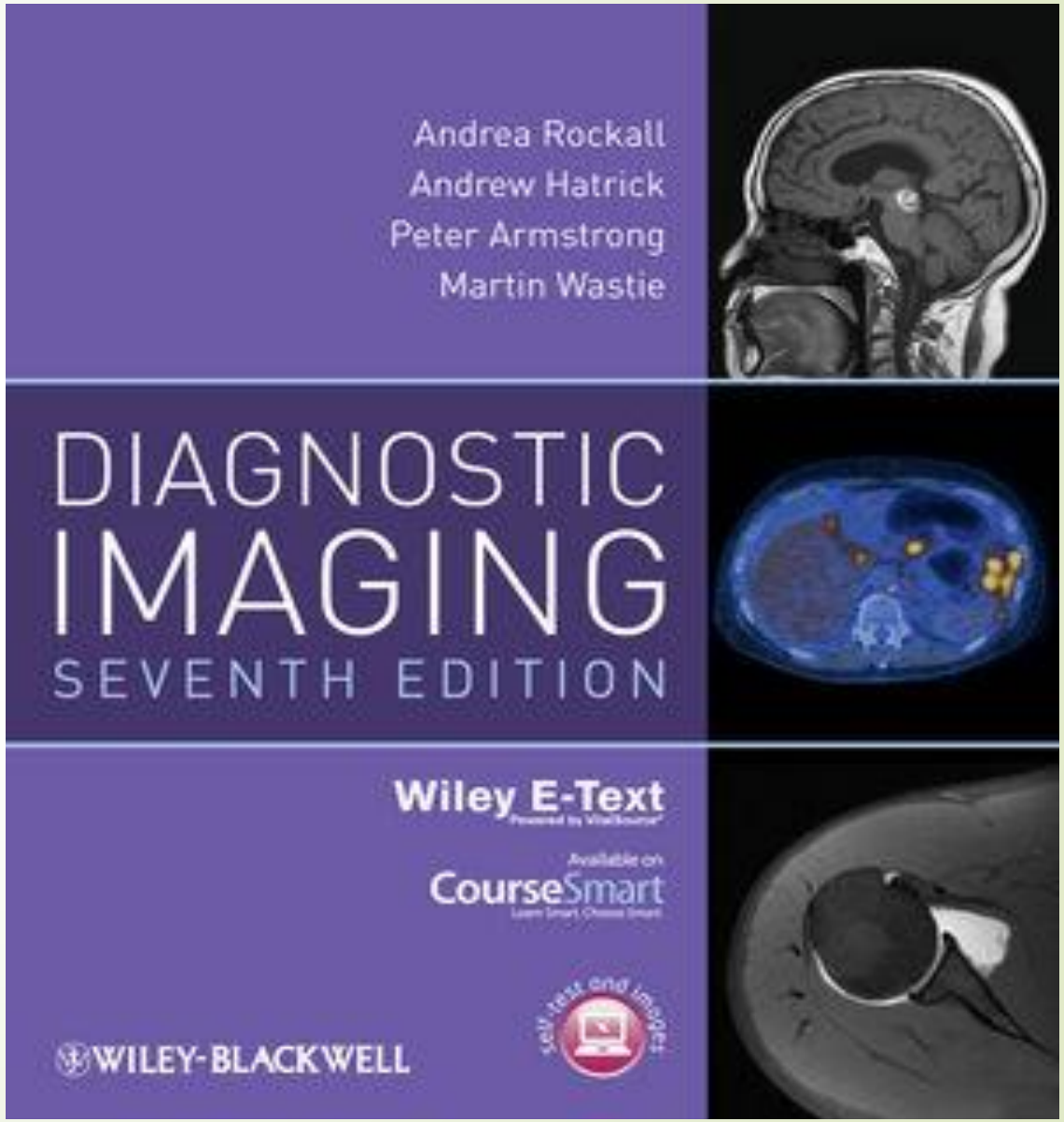
Objectives:

- To know the common GIT pathologies presentation.
- To understand step wise approach in requesting GIT radiology investigations.
- To know common radiological pathologies in GIT.

Reference:

- Diagnostic imaging:
  - Chapter 6



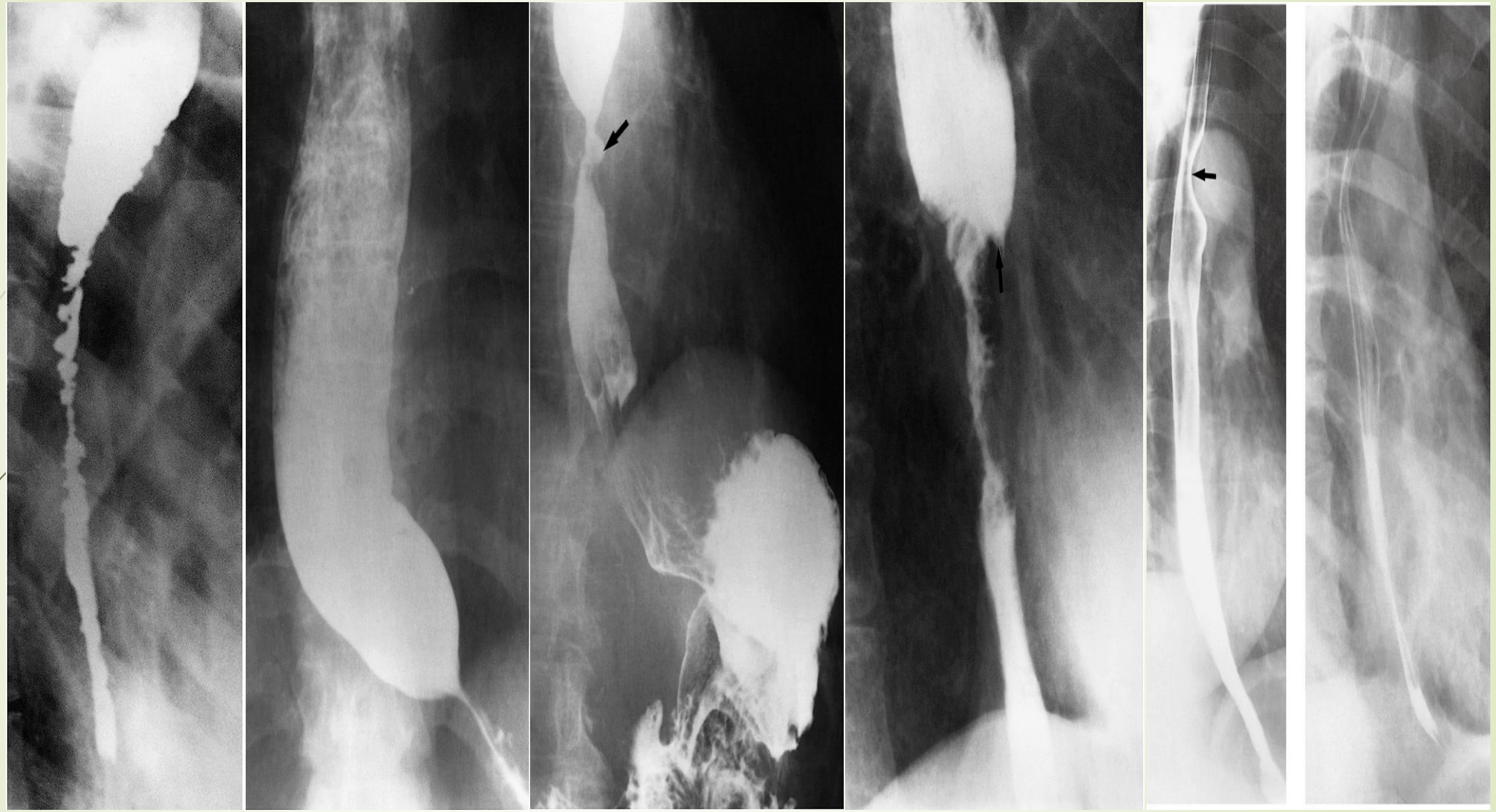
Esophagus

Clinical signs and symptoms:

- Dysphagia.
- Odynophagia.
- Regurgitations.
- Vomiting.
- Age is also important (some diseases are common in specific age)
- Constitution symptoms (fever, sweating and weight loss)

IMAGING MODALITIES:

- **X-RAY.**
- **FLUOROSCOPY (CONTRAST STUDY).**
- **ULTRASOUND.**
- **CT.**
- **MRI.**
- NUCLEAR MEDICINE.
- ANGIOGRAPHY.



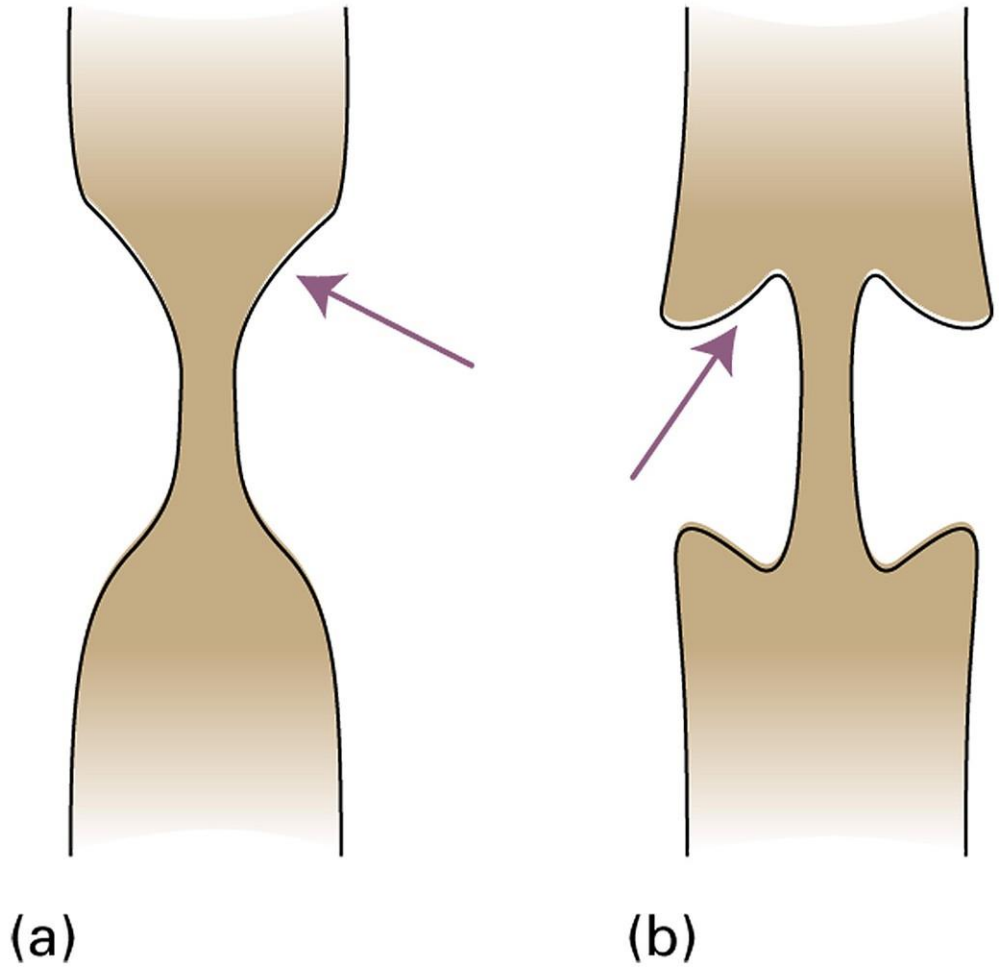


Fig. 6.3 Stricture. (a) Tapering ends (arrow). (b) Overhanging edges or shouldering (arrow).

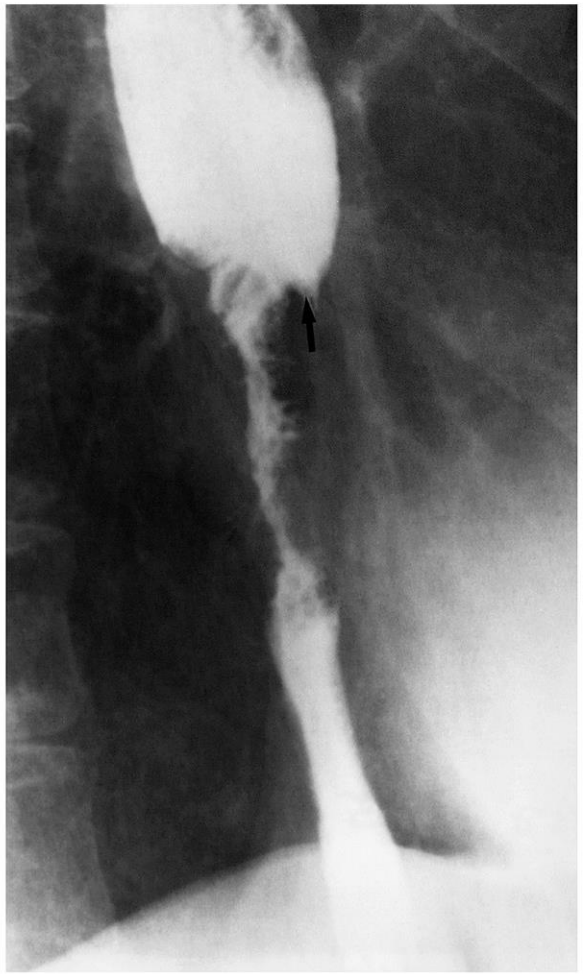


Fig. 6.7 Oesophageal carcinoma. There is an irregular stricture with shouldering (arrow) at the upper end.

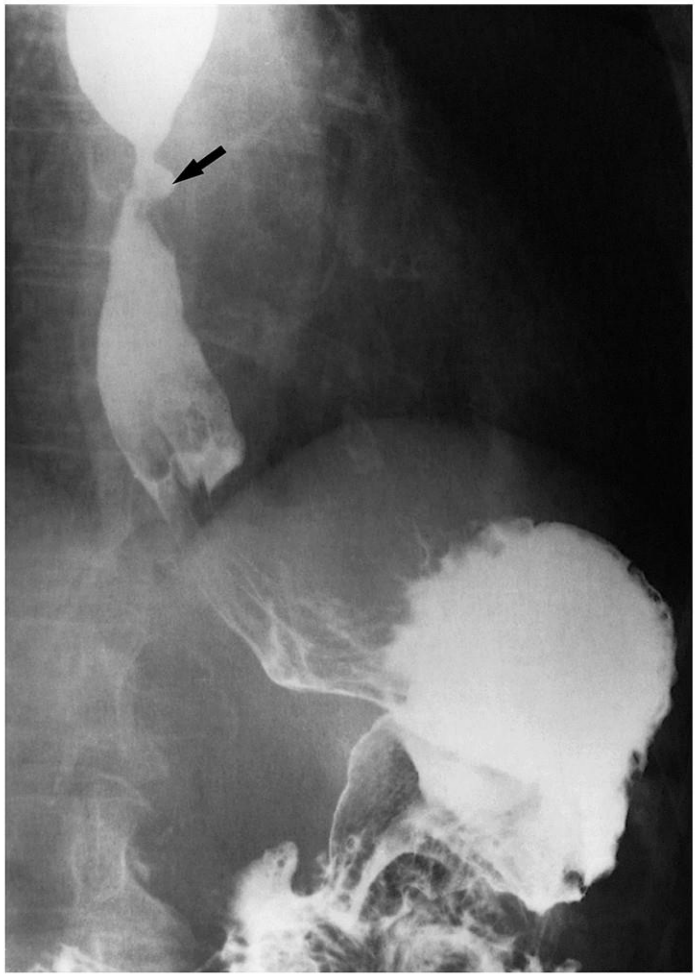


Fig. 6.12 Peptic stricture due to gastro-oesophageal reflux in a patient with a hiatus hernia. There is a short smooth stricture at the oesophagogastric junction with an ulcer crater within the stricture (arrow).

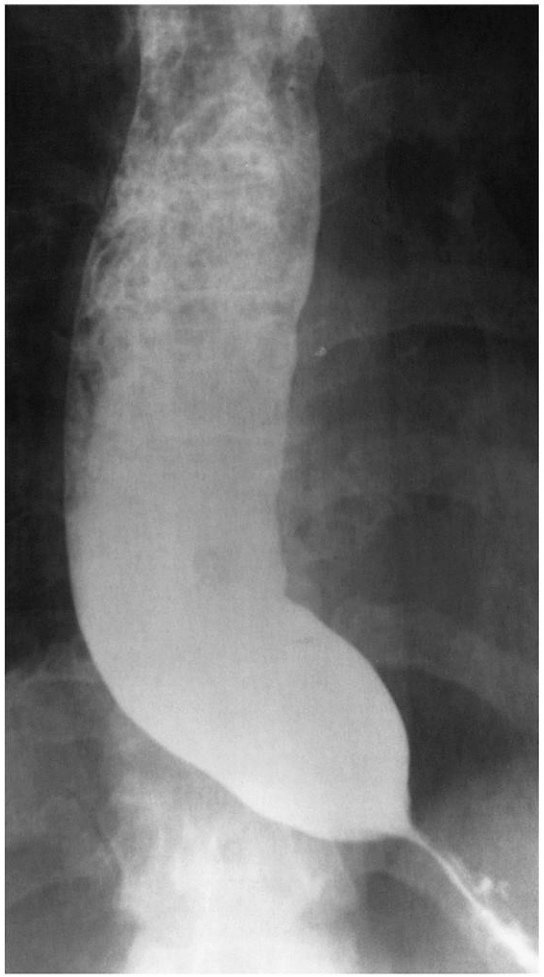


Fig. 6.13 Achalasia. The very dilated oesophagus containing food residues shows a smooth narrowing at its lower end.

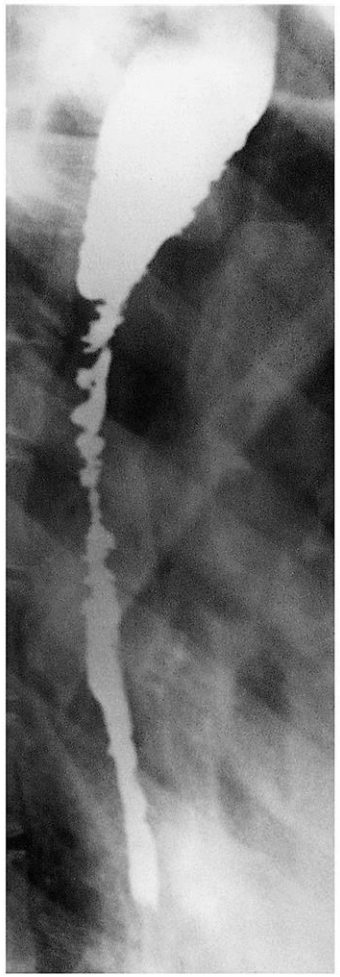


Fig. 6.14 Corrosive stricture.

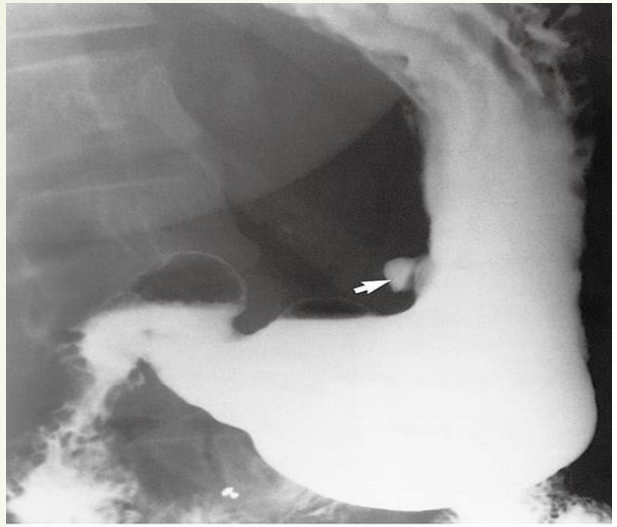
Stomach

Clinical signs and symptoms:

- Epigastric pain.
- Vomiting
- hematemesis.
- Age is also important (some diseases are common in specific age)
- Constitution symptoms (fever, sweating and weight loss)

IMAGING MODALITIES:

- **X-RAY.**
- **FLUOROSCOPY (CONTRAST STUDY).**
- **ULTRASOUND.**
- **CT.**
- **MRI.**
- NUCLEAR MEDICINE.
- ANGIOGRAPHY.



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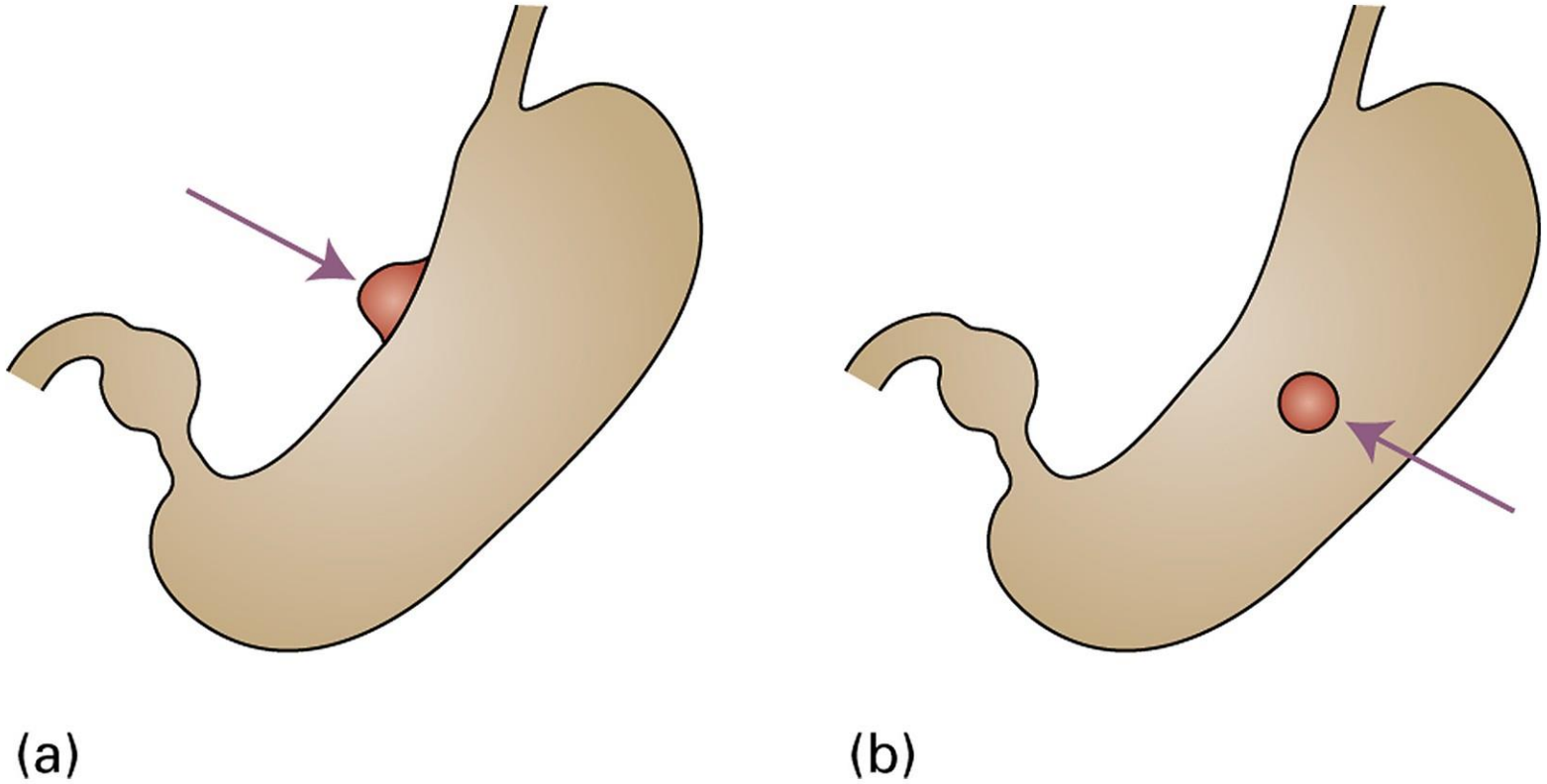
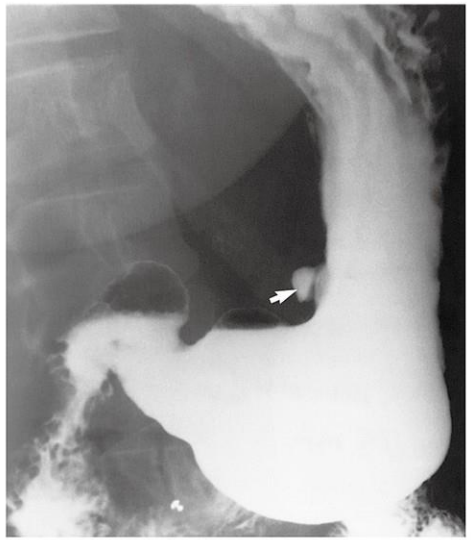


Fig. 6.1 Ulceration. (a) In profile the ulcer is seen as an outward projection (arrow). (b) *En face* the ulcer appears rounded (arrow).

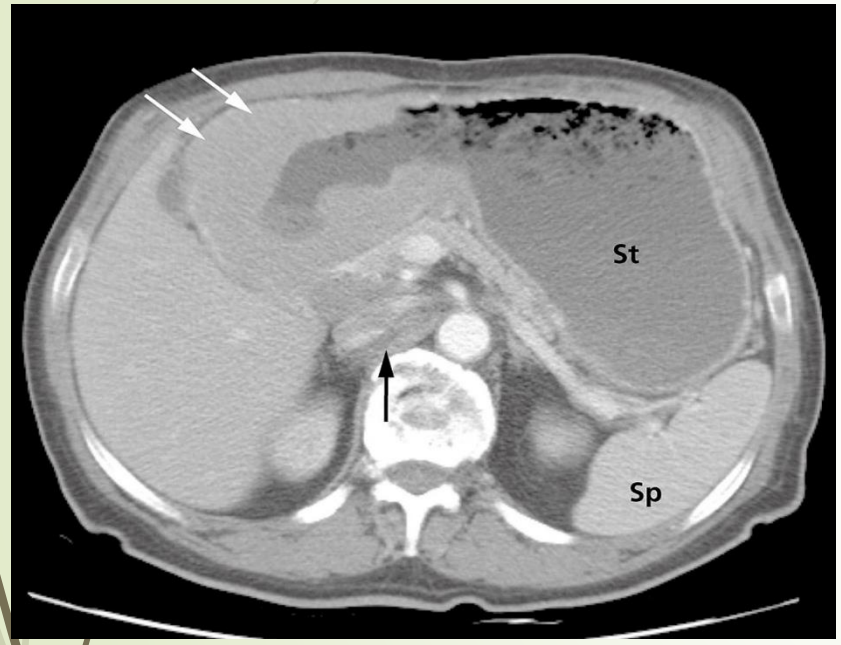


(a)

(b)

Fig. 6.22 Benign ulcer. (a) In profile, the ulcer (arrow) projects from the lesser curve of the stomach. (b) *En face* the ulcer (arrow) is seen as a rounded collection of barium.

Fig. 6.23 Gastric carcinoma on barium study. There are a number of large filling defects in the antrum and body of the stomach.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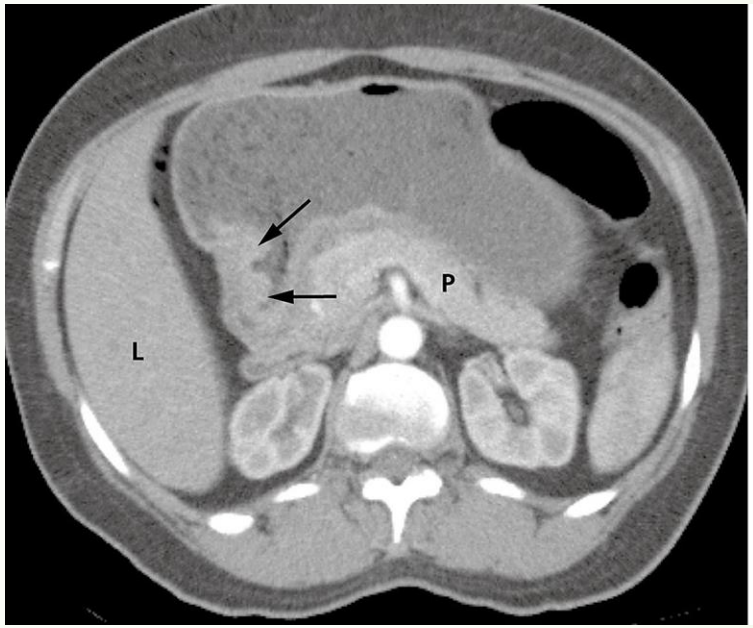
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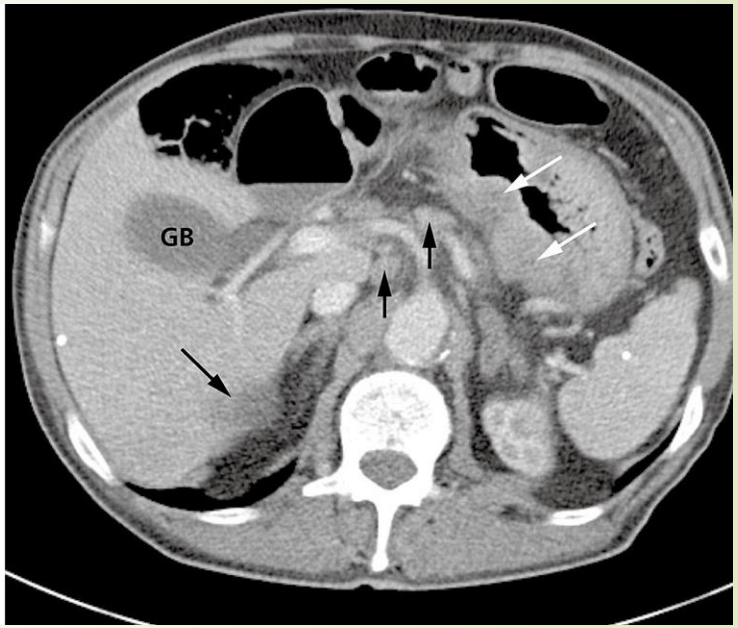
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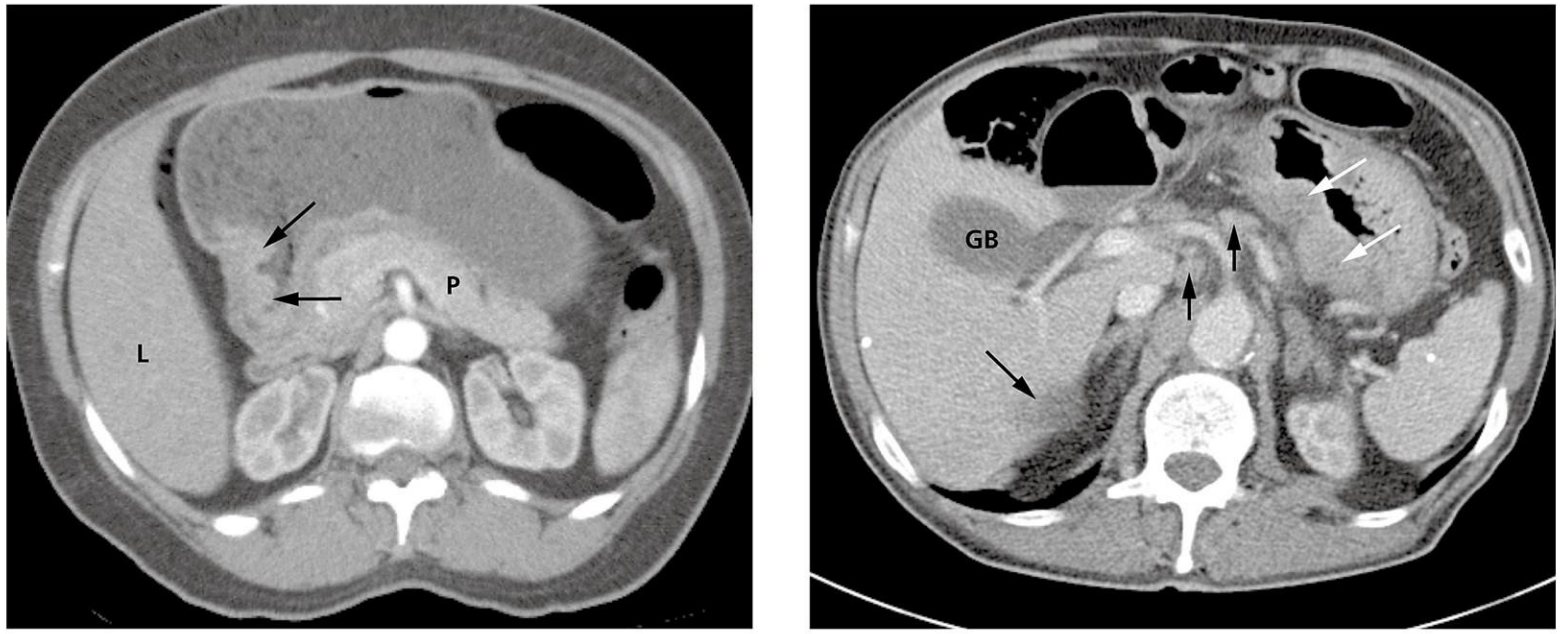
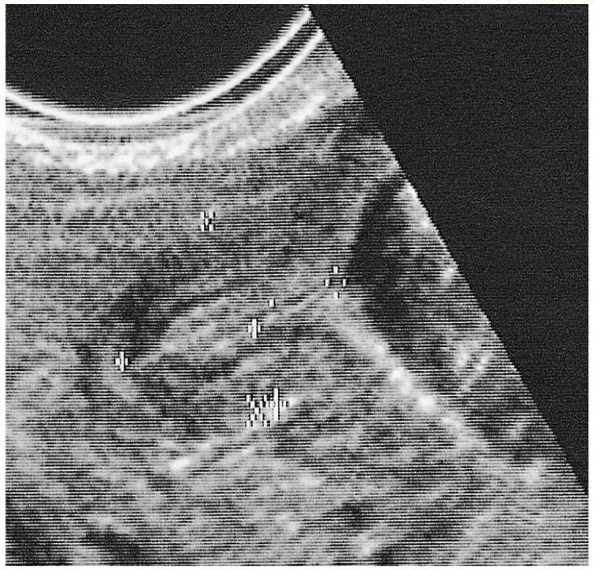


(a) (b)

Fig. 6.24 Gastric carcinoma on CT. (a) A focal ulcer is seen arising in the antrum (arrows). (b) In a different patient, there is diffuse thickening of the wall of the stomach (white arrows). Several lymph nodes (short black arrows) and a liver metastasis (long black arrow) are also seen. GB, gall bladder; L, liver; P, pancreas.



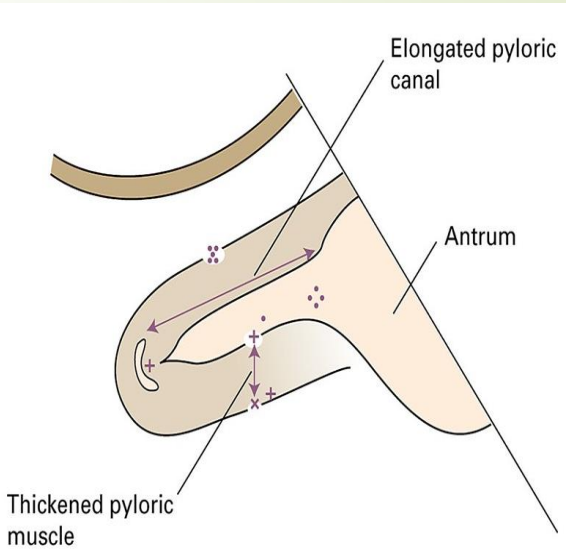


Fig. 6.29 Pyloric stenosis. Ultrasound scan in a neonate showing a thickened, elongated pyloric canal.

Small bowels

Clinical signs and symptoms:

- Malabsorption.
- Vomiting.
- Diarrhea.
- Age is also important (some diseases are common in specific age)
- Constitution symptoms (fever, sweating and weight loss)

IMAGING MODALITIES:

- **X-RAY.**
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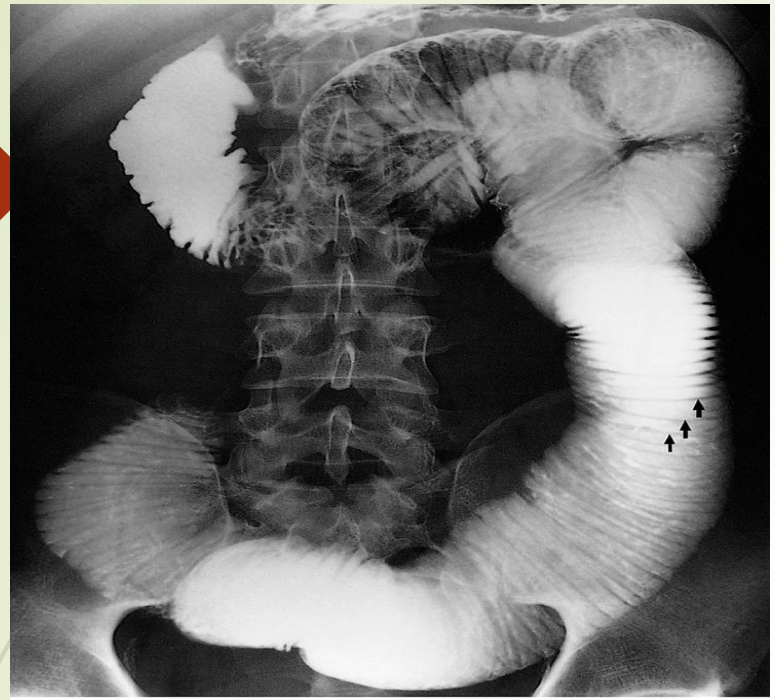

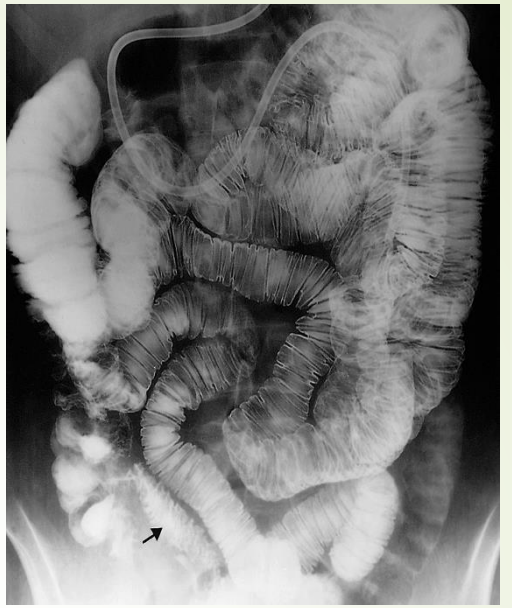


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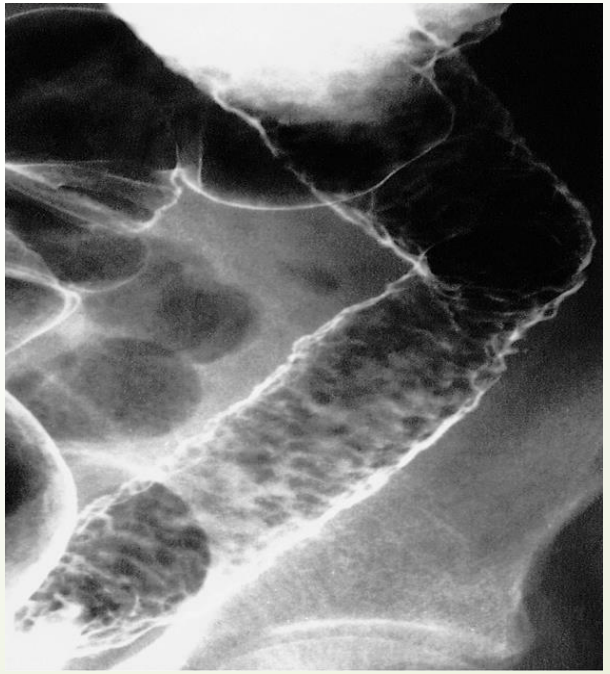

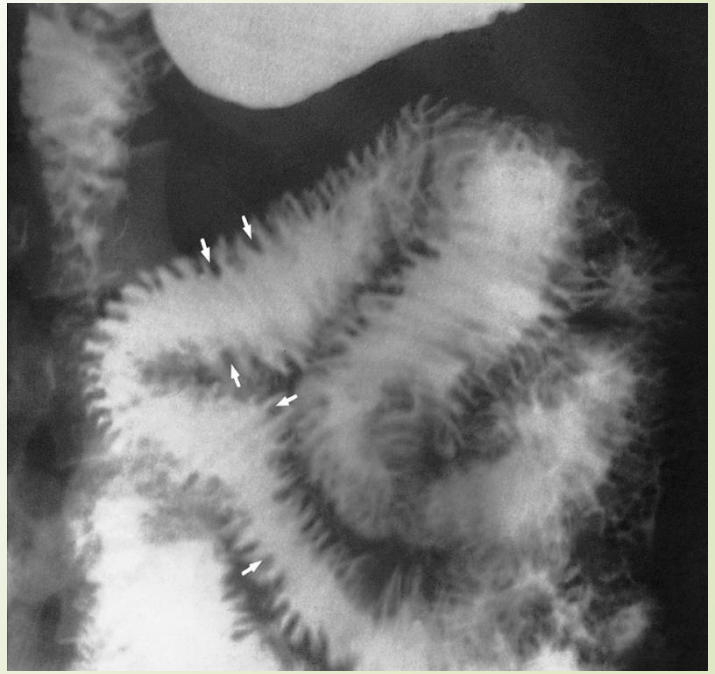

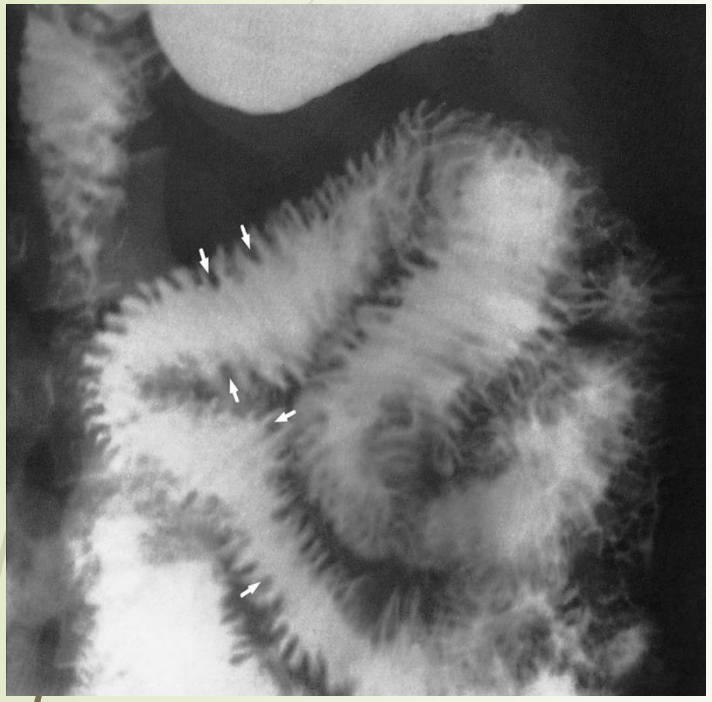


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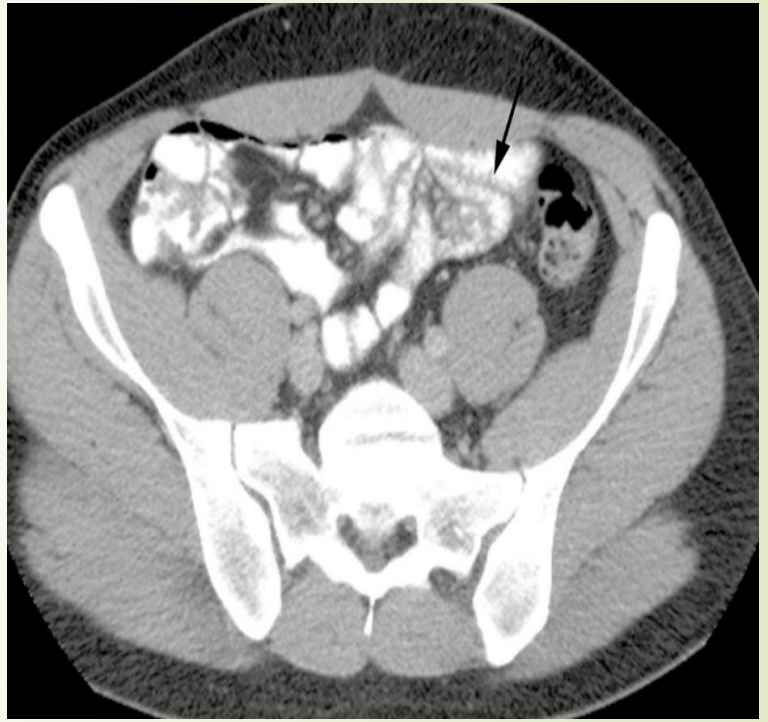

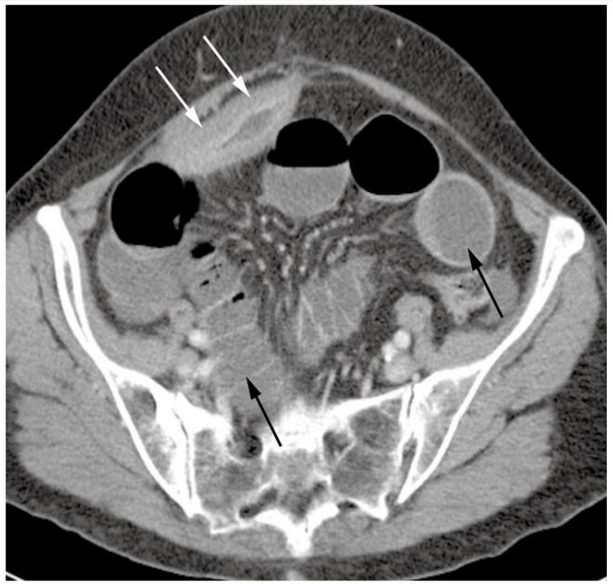

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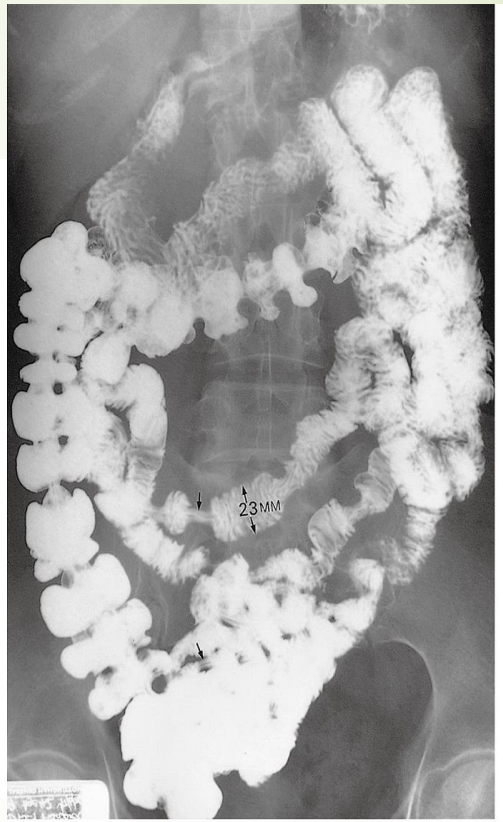

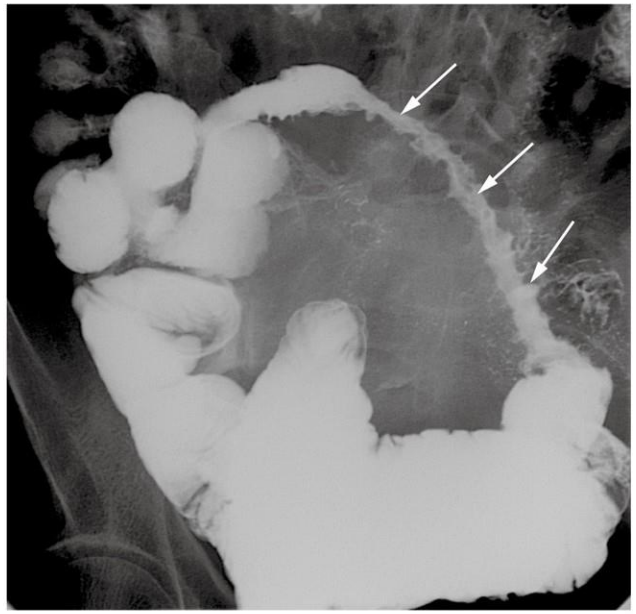

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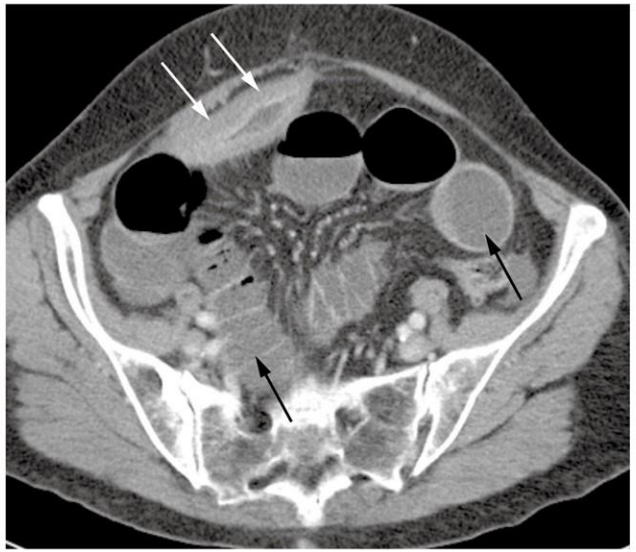


(b)

Fig. 6.39 Narrowing. (a) There is a long stricture (arrows) in the ileum due to Crohn's disease and an abnormal mucosal pattern. There is also separation of the abnormal segment from other loops of the bowel. (b) CT in the same patient demonstrating marked thickening of the abnormal loop of small bowel, with a narrowed lumen (white arrows). Several dilated loops of small bowel are also seen (black arrows), due to some obstruction at the level of the stricture.

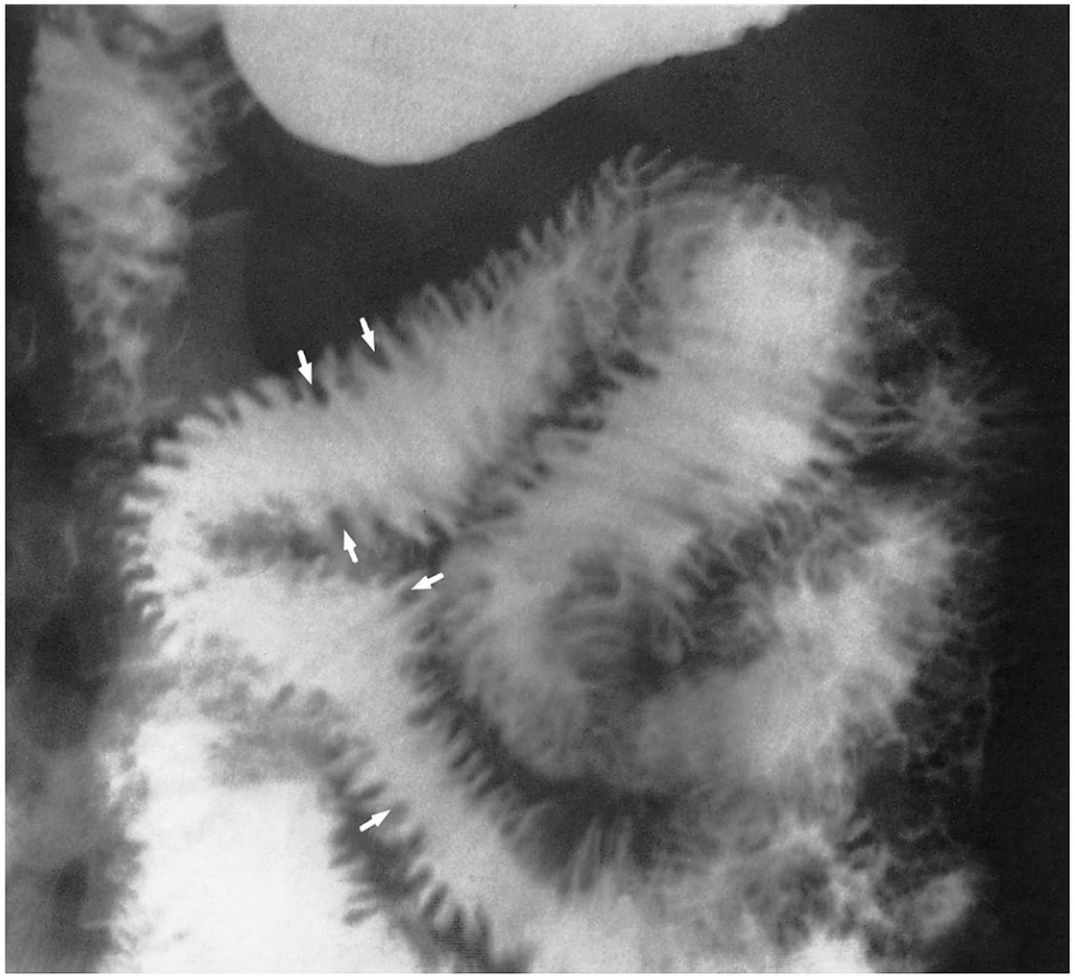


Fig. 6.38 Mucosal abnormality with infiltration of the bowel, in this case from oedema. The mucosal folds become thickened (some are arrowed).

Fig. 6.40 Ulceration. Abnormal loops of bowel in Crohn's disease showing the ulcers as outward projections (arrows).

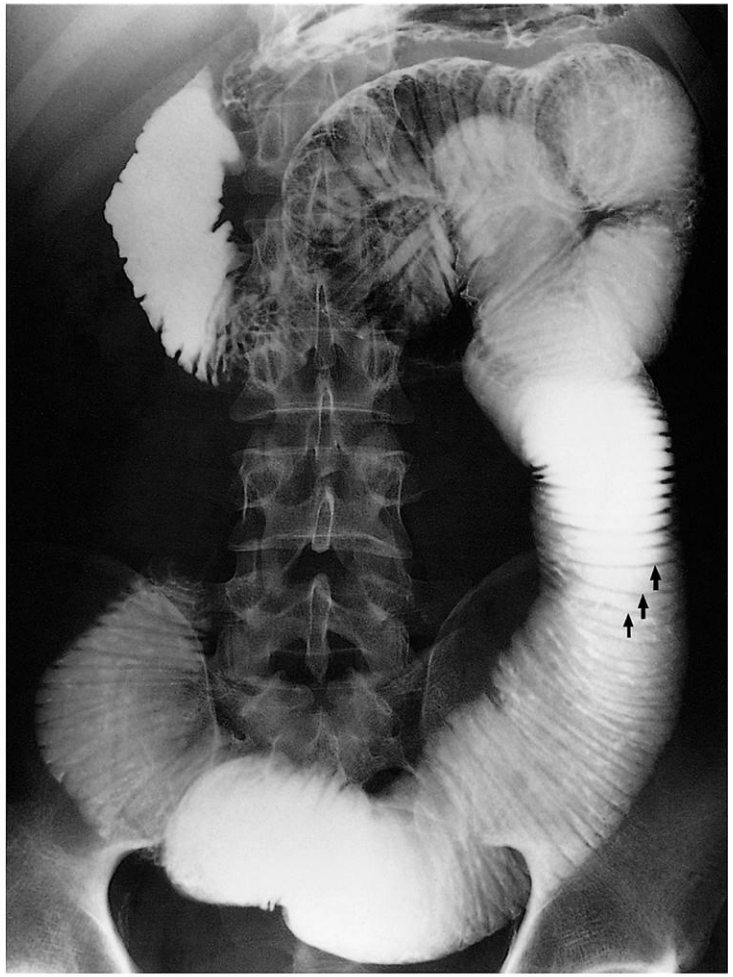
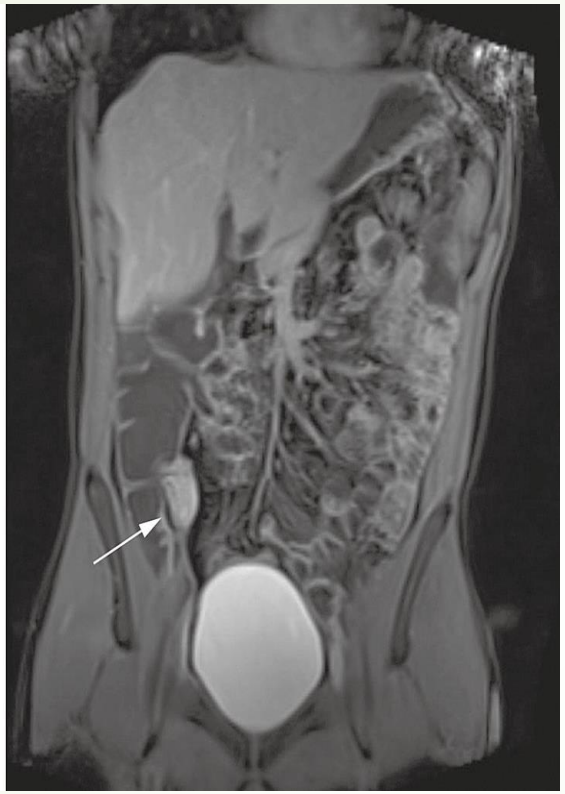
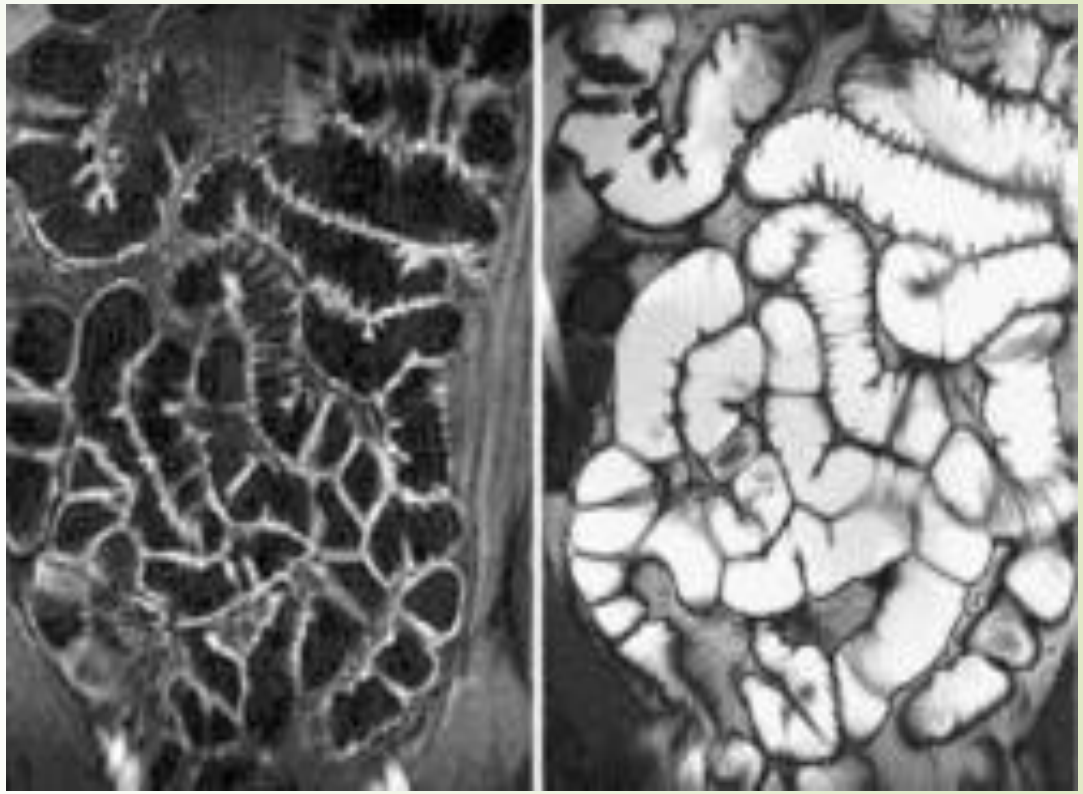
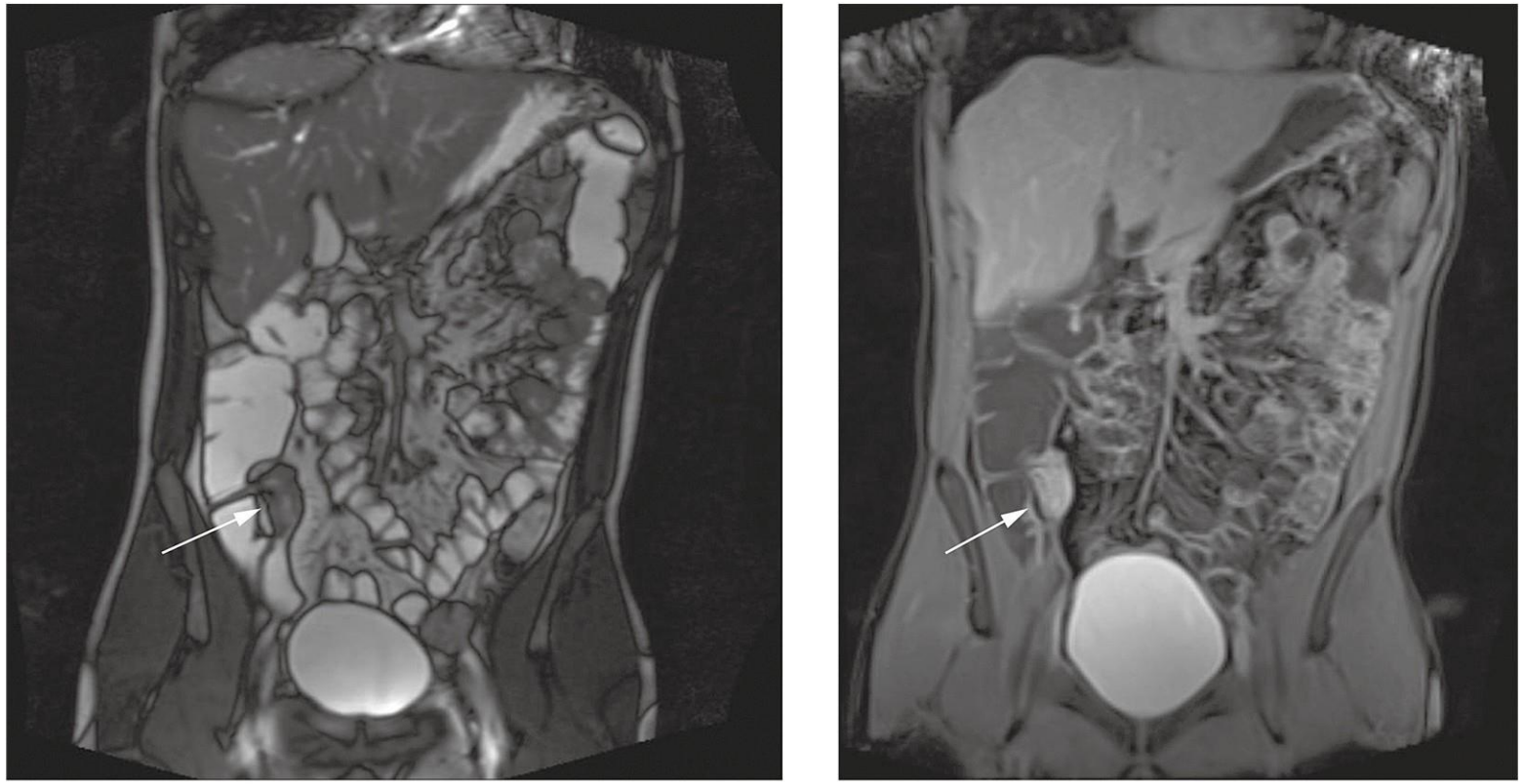


Fig. 6.37 Dilatation from small bowel obstruction. The diameter of the bowel is greatly increased. The feathery mucosal pattern is lost and the folds appear as thin lines traversing the bowel, known as valvulae conniventes (arrows).

Fig. 6.46 Lymphoma. CT with the bowel opacified by contrast agent. The wall of all the bowel loops is considerably thickened. The arrows point to a portion of bowel which is particularly involved by lymphoma.







(a) (b)

Fig. 6.41 MRI of Crohn's disease. (a) Coronal T2 and (b) coronal T1 post contrast images demonstrating mucosal thickening and enhancement involving the terminal ileum (arrows), characteristic of Crohn's disease.

Large bowels

Clinical signs and symptoms:

- Abdominal pain.
- Diarrhea.
- Hematochezia.
- Vomiting.
- Anal pain and discharge.
- Age is also important (some diseases are common in specific age)
- Constitution symptoms (fever, sweating and weight loss)

IMAGING MODALITIES:

- **X-RAY.**
- **FLUOROSCOPY (CONTRAST STUDY).**
- **ULTRASOUND.**
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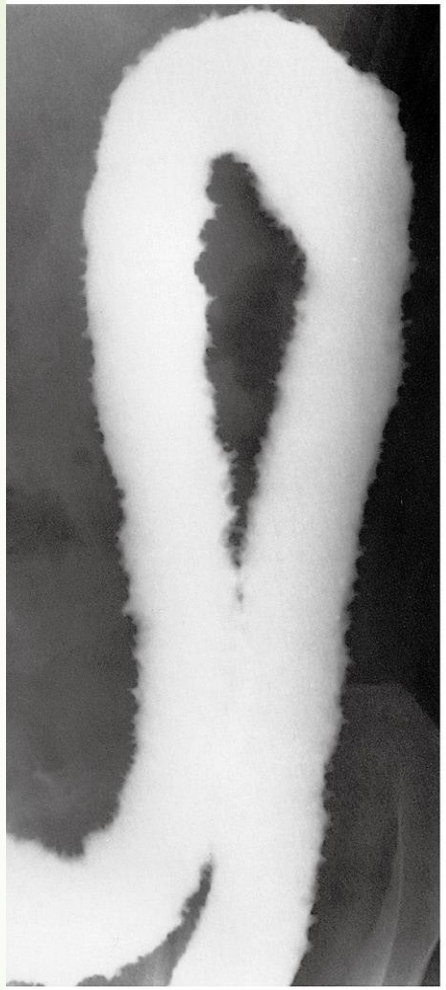
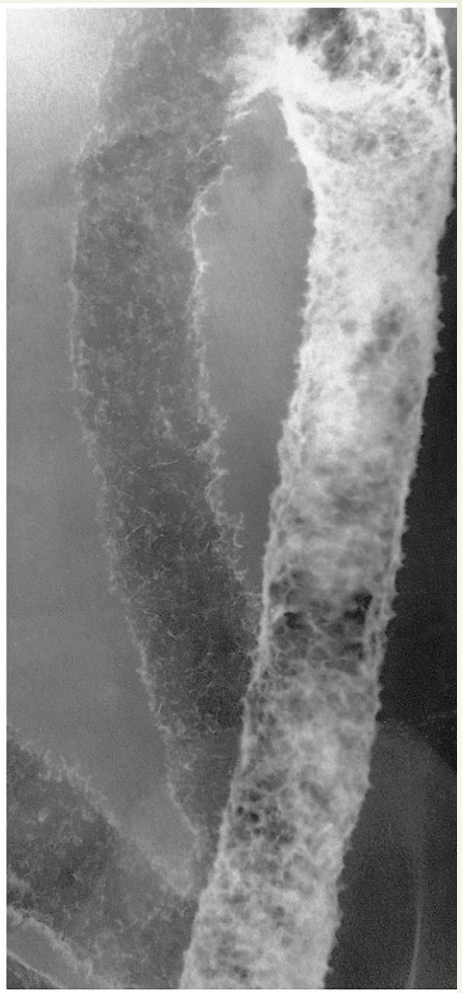

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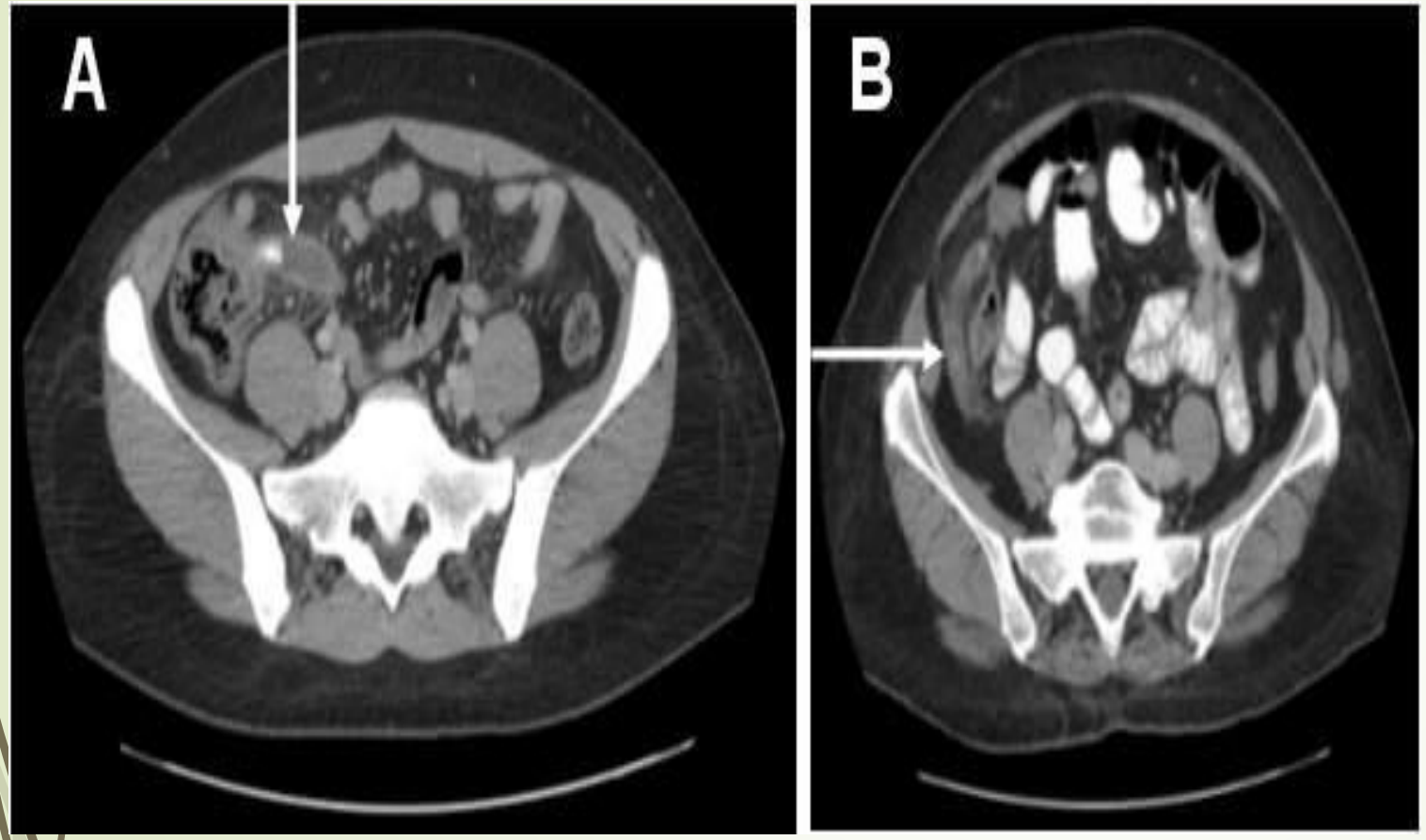
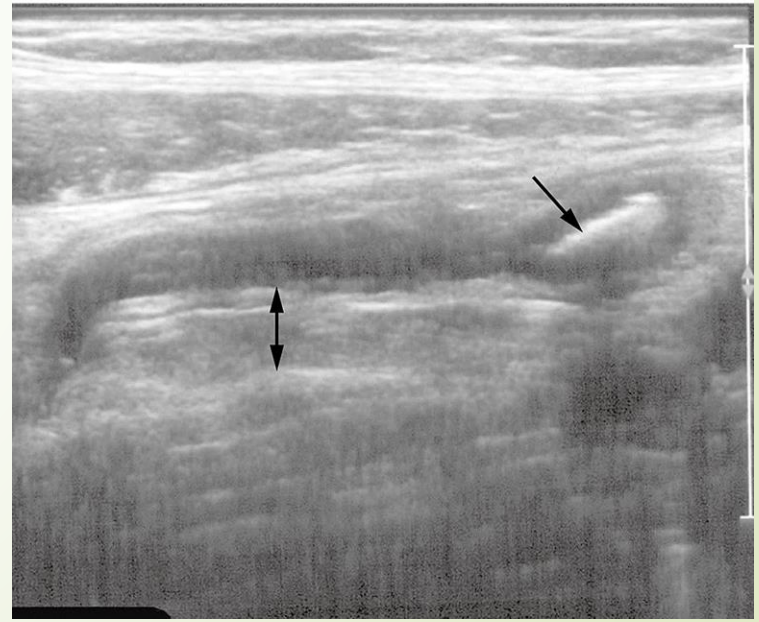
(a) (b)

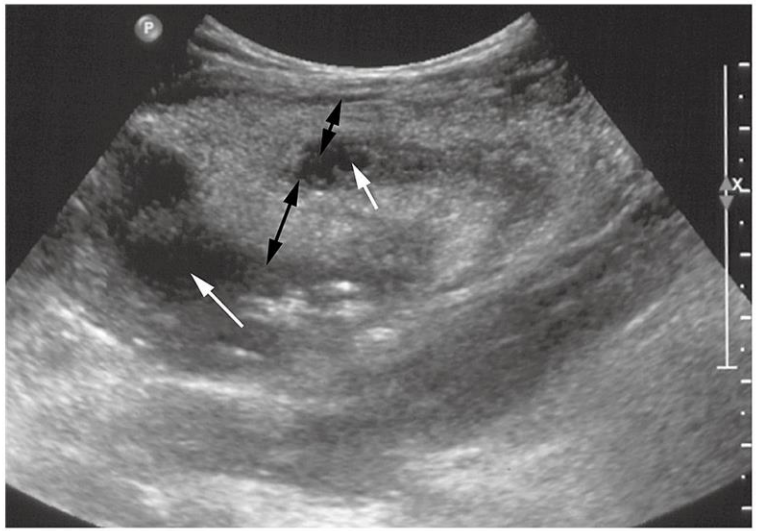
Fig. 6.55 Ulceration. (a) Single contrast. (b) Double contrast. In this case of ulcerative colitis, the ulceration causes the normally smooth outline of the colon to be irregular.

Fig. 6.56 Ulcerative colitis. With longstanding disease, the haustra are lost and the colon becomes narrowed and shortened, coming to resemble a rigid tube. Reflux into the ileum through an incompetent ileocaecal valve has occurred.





Enlarged appendix measures more than 6 mm with appendicolith



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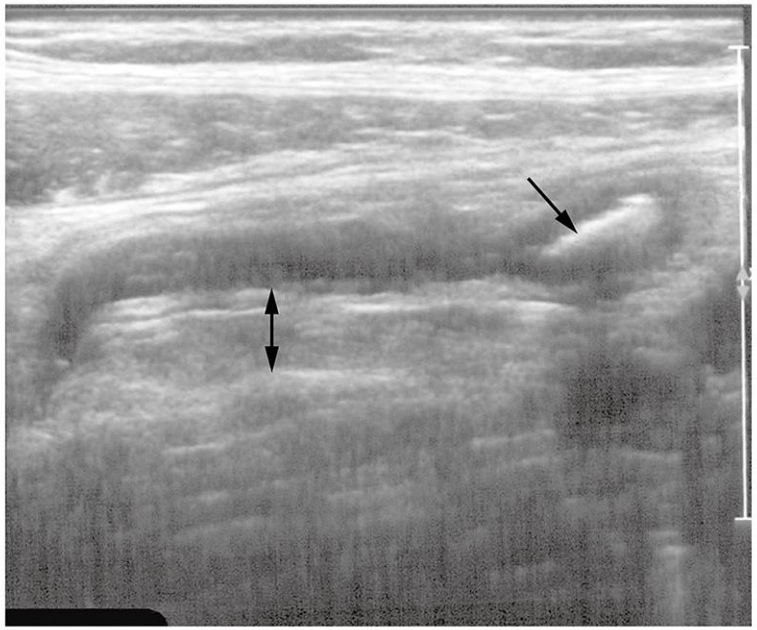
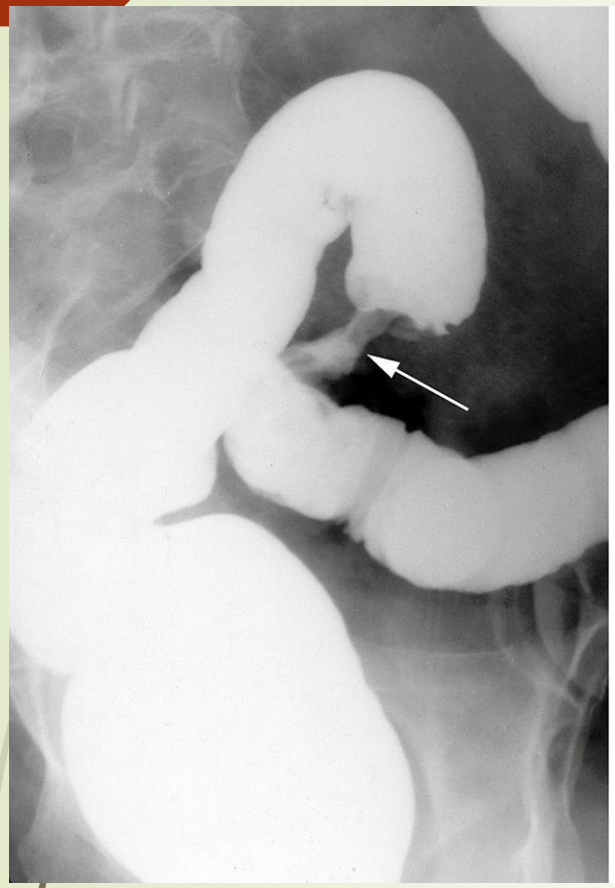
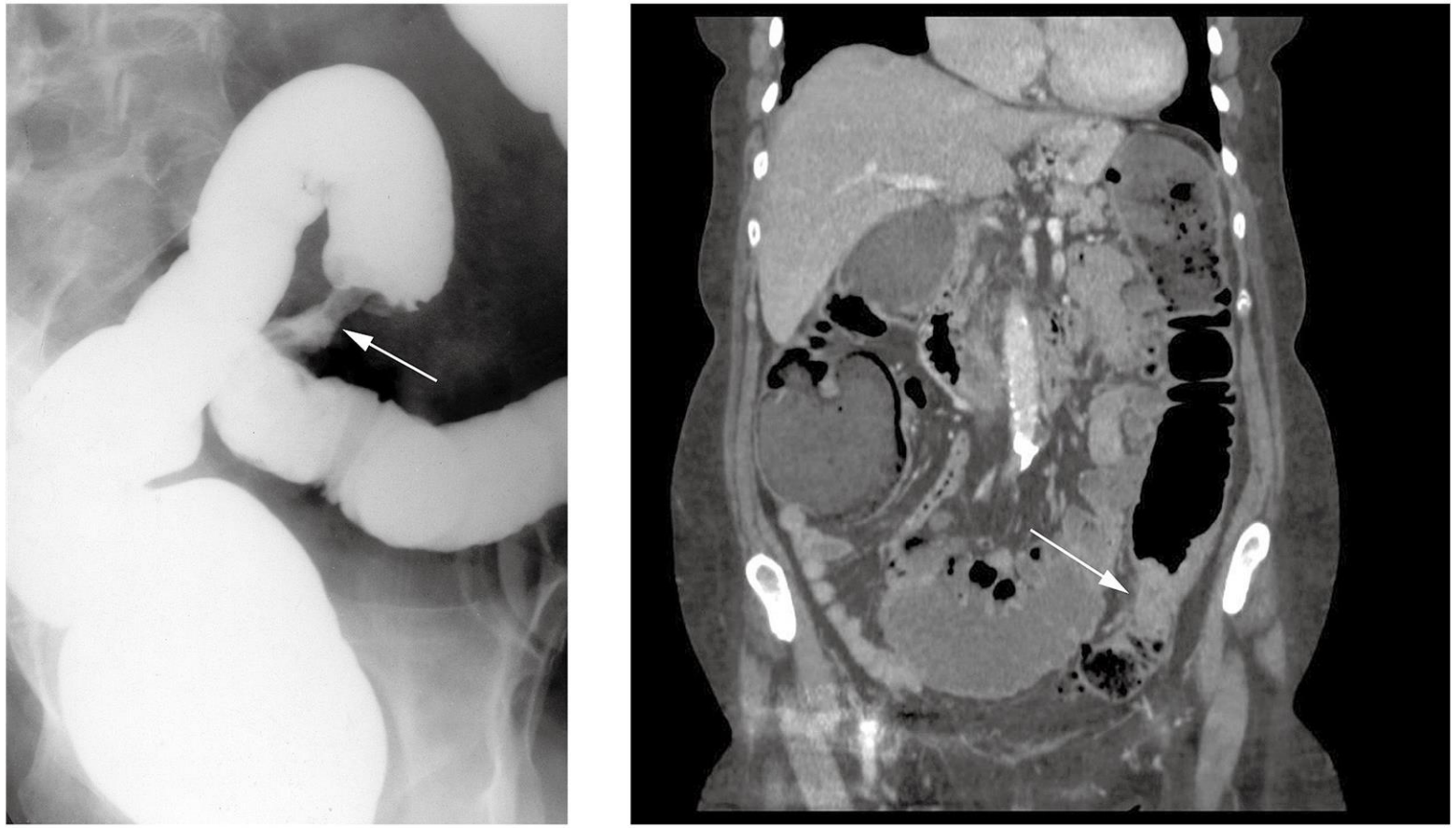


(b)

Fig. 6.65 Appendicitis. (a) Longitudinal ultrasound scan demonstrating marked thickening of the wall of the appendix (double head arrows). Fluid is seen within the lumen and surrounding the appendix (white arrows). (b) An appendicolith is seen in the tip of the appendix in a different patient (black arrow). A double-headed arrow again indicates thickening of the appendix wall.





(a) (b)

Fig. 6.52 Stricture. (a) Barium enema and (b) coronal CT showing a short, circumferential narrowing in the sigmoid colon (arrows) from a carcinoma.


B
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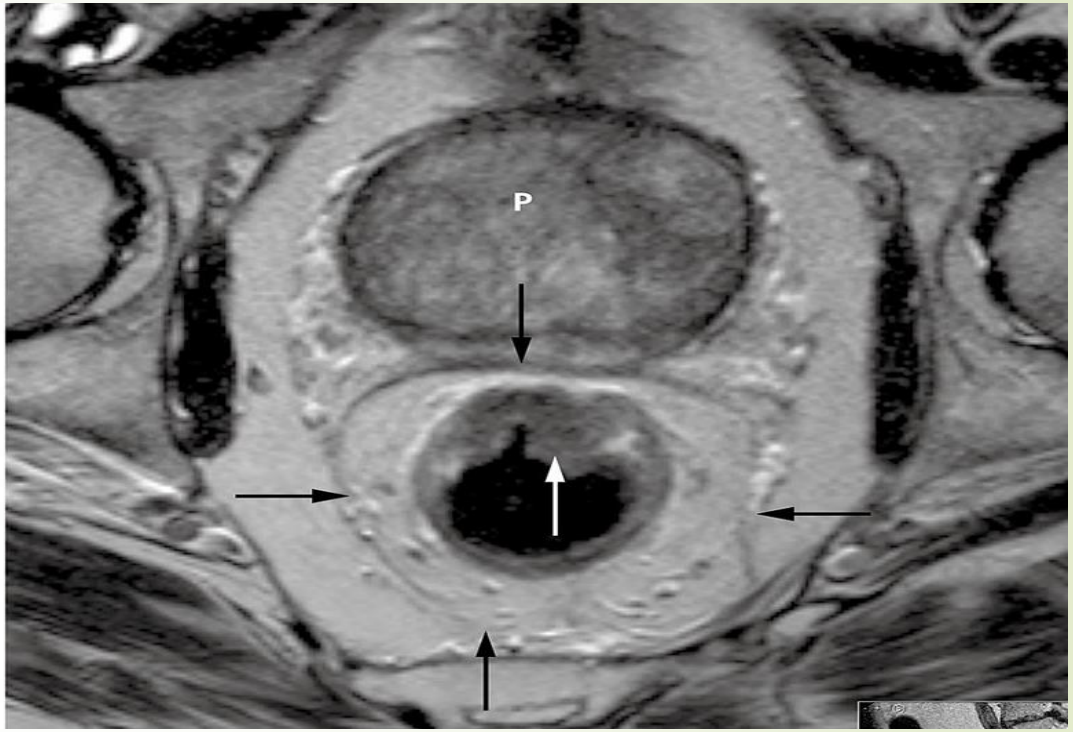
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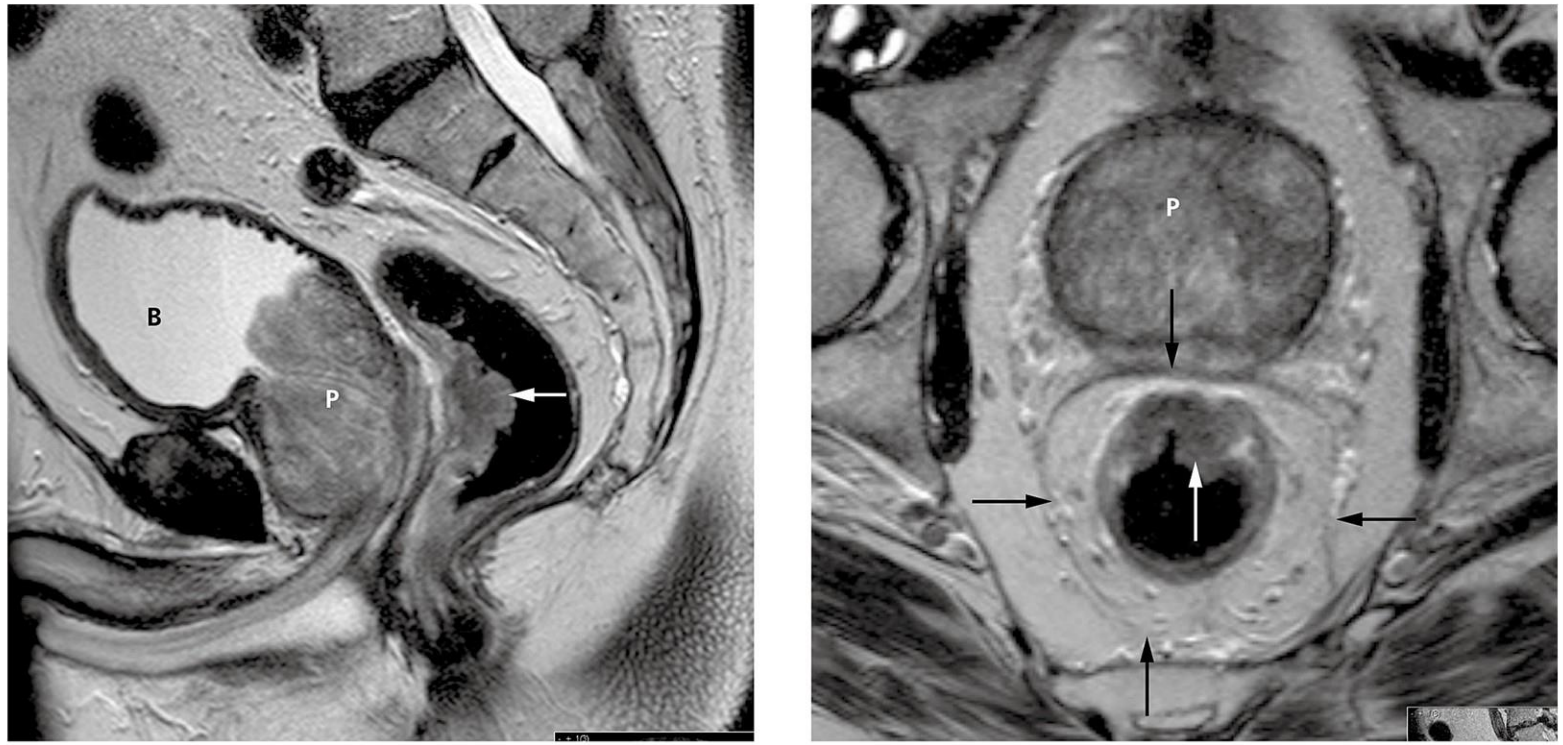

(a) (b)

Fig. 6.76 MRI of rectal carcinoma. (a) Sagittal T2-weighted image demonstrating a polypoid growth (arrow) arising from the anterior wall of the rectum. Note the benign hyperplasia of the prostate (P) and a slightly trabeculated bladder (B). (b) Axial image of the same tumour (white arrow). Note the mesorectal fascia (black arrows) that encases the mesorectal fat and the rectum.


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THE END

THANK YOU