GIT Radiological investigations and anatomy

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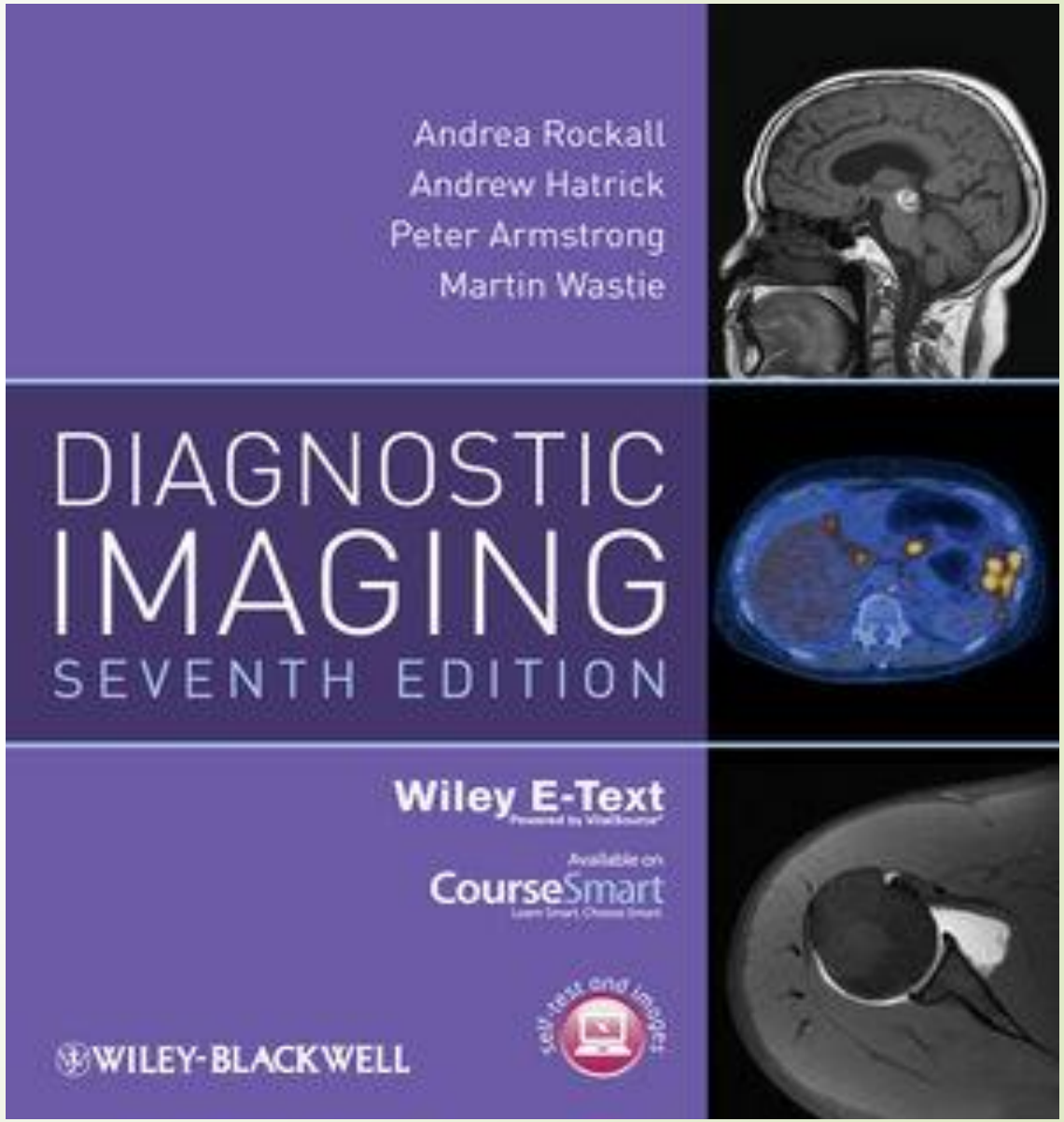
Objectives:

- To know various radiological investigations used for GIT.
- To understand step wise approach in requesting GIT radiology investigations.
- To be familiar with radiological appearance (anatomy) seen in various imaging modalities.
- To interpret plan x-ray radiograph of abdomen with common pathologies.

Reference:

- Diagnostic imaging:
  - Chapter 5 and 6



What are radiological investigations that you know ?

IMAGING MODALITIES:

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

What is peculiar about GIT?

GIT characteristics:

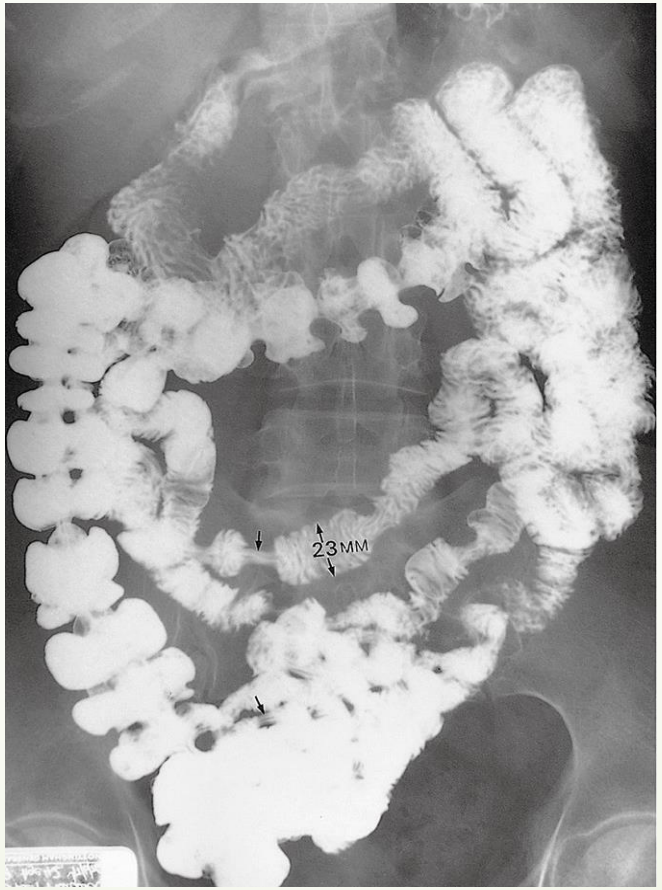
- Hallow viscus (not solid).
- Usually filled with gas.
- Motility.

X-ray (plain radiography)

- Often used as first imaging modality.
- Cheap.
- Fast.
- Can be done bedside (portable)
- Useful for free gas or bowel obstruction.

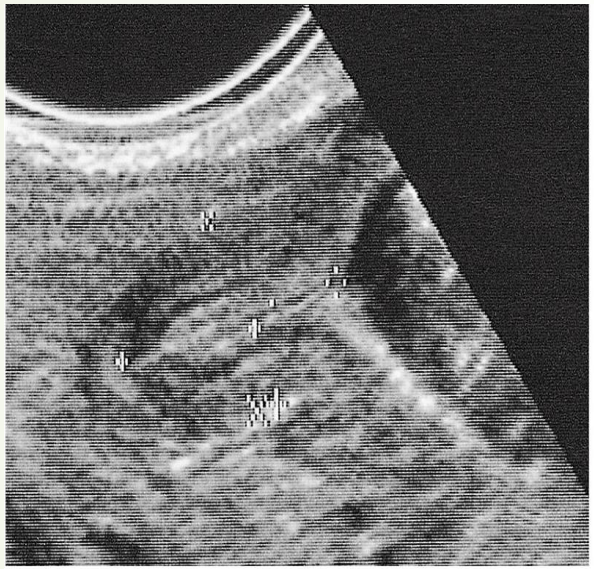
Fluoroscopy (contrast study)

- Can be used as first imaging modality.
- Cheap.
- Use of contrast.
- Recently replaced by CT and MRI
- Useful for intraluminal pathology.
- Can give clue about the motility (function)



Ultrasound

- Relatively cheap.
- No radiation.
- Limited uses (gas filled structures).
- Used in pediatrics and pregnant ladies



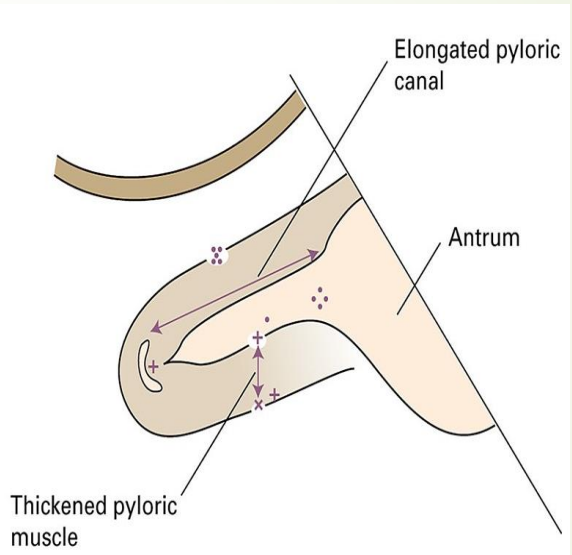
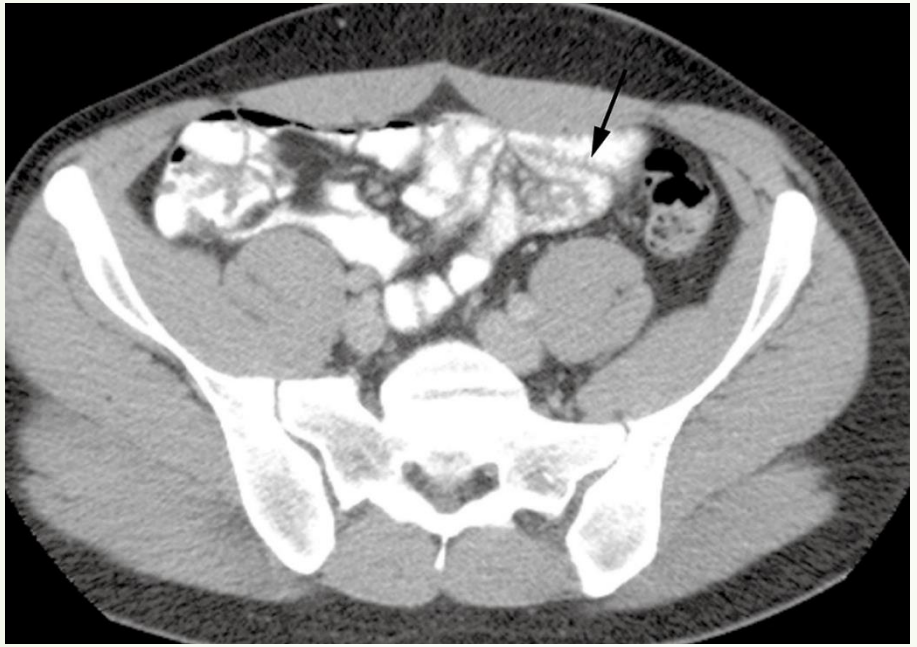


Fig. 6.29 Pyloric stenosis. Ultrasound scan in a neonate showing a thickened, elongated pyloric canal.

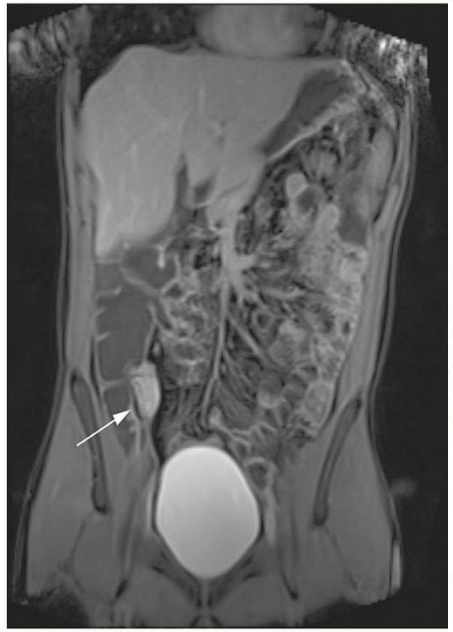
CT (computer tomography)

- Expensive.
- More radiation.
- Fast.
- Contrast (iv, oral &rectal) usually used.
- Used in emergency department.

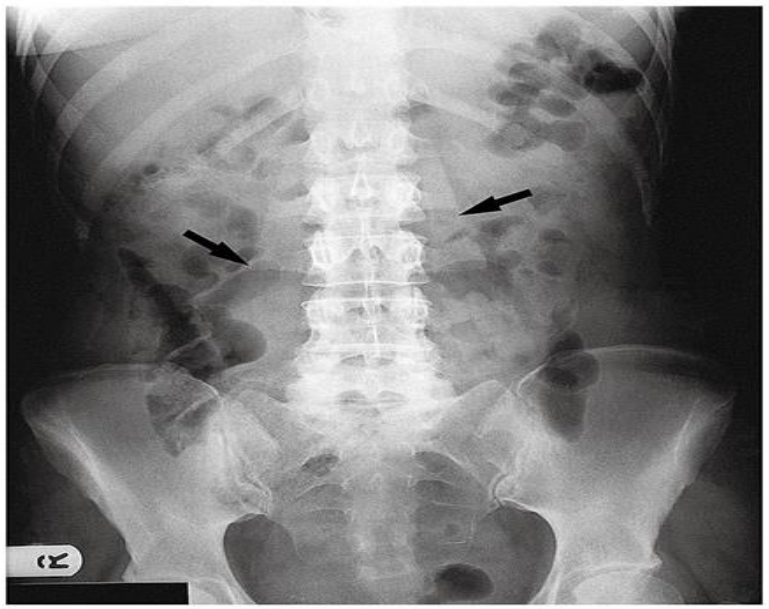


MRI (Magnetic resonance imaging)

- More expensive than CT.
- No radiation.
- Slow and affected by artifacts.
- Excellent for soft tissue.



Radiological appearance of GIT



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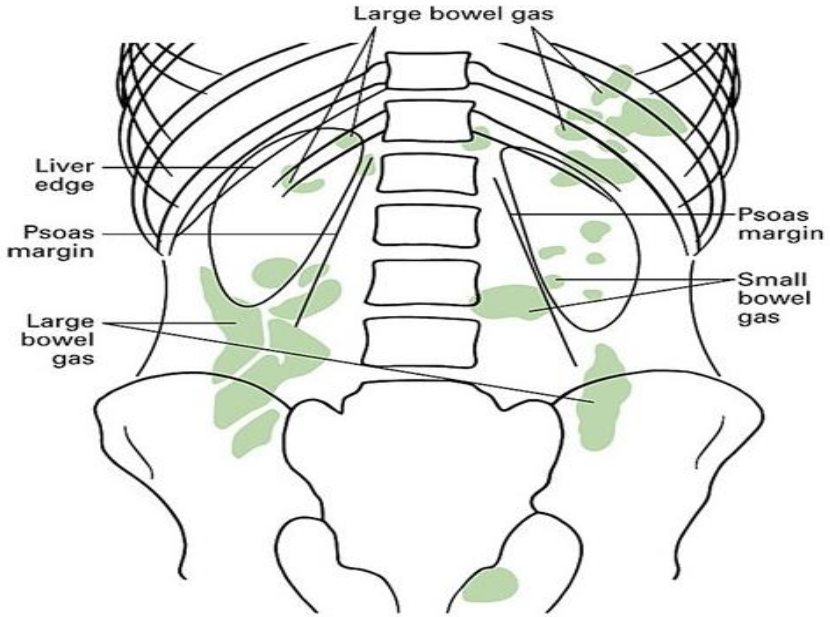
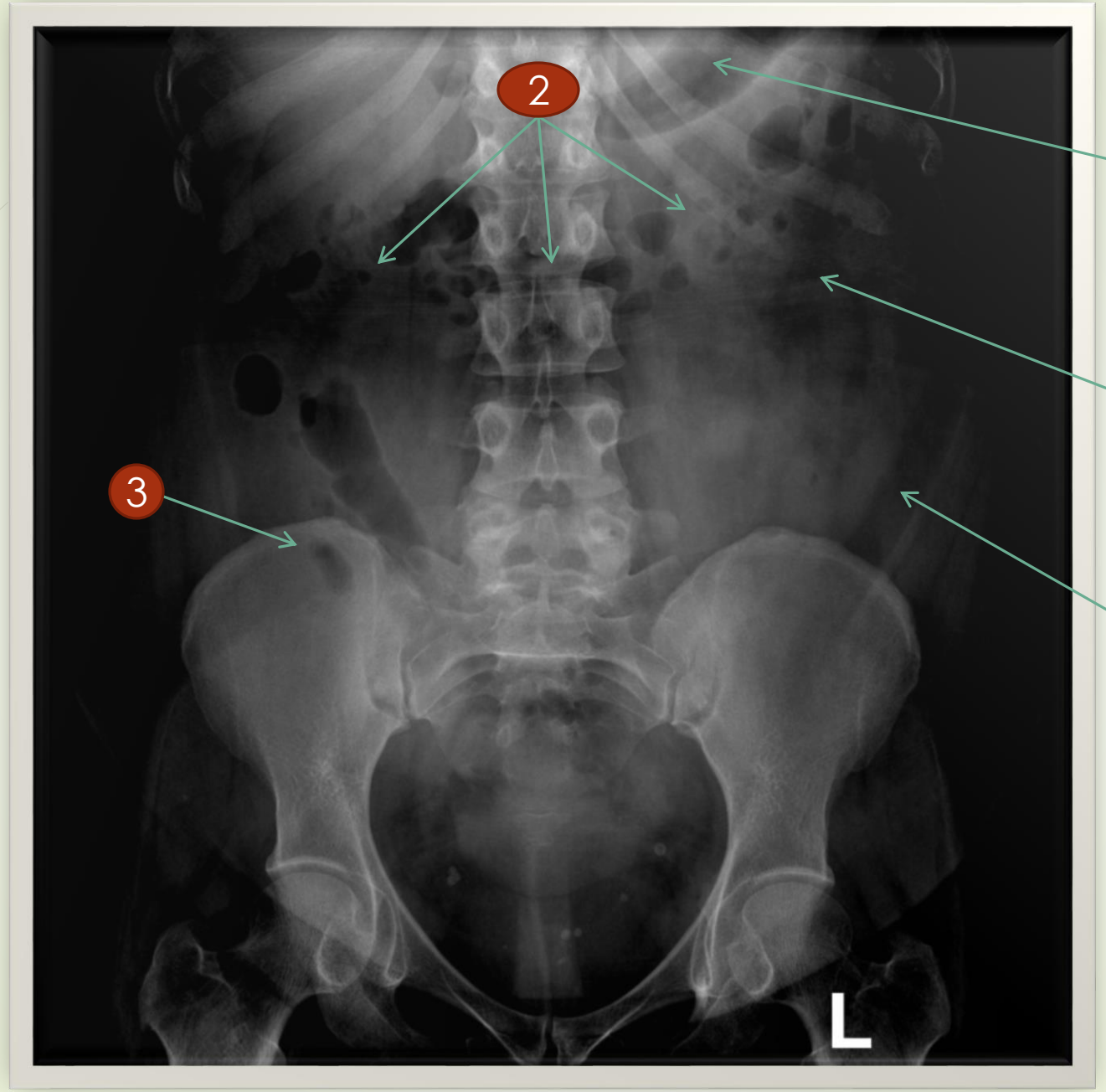

Large bowel gas
Liver edge
Psoas margin
Large bowel gas
Psoas margin
Small bowel gas


R
SUPINE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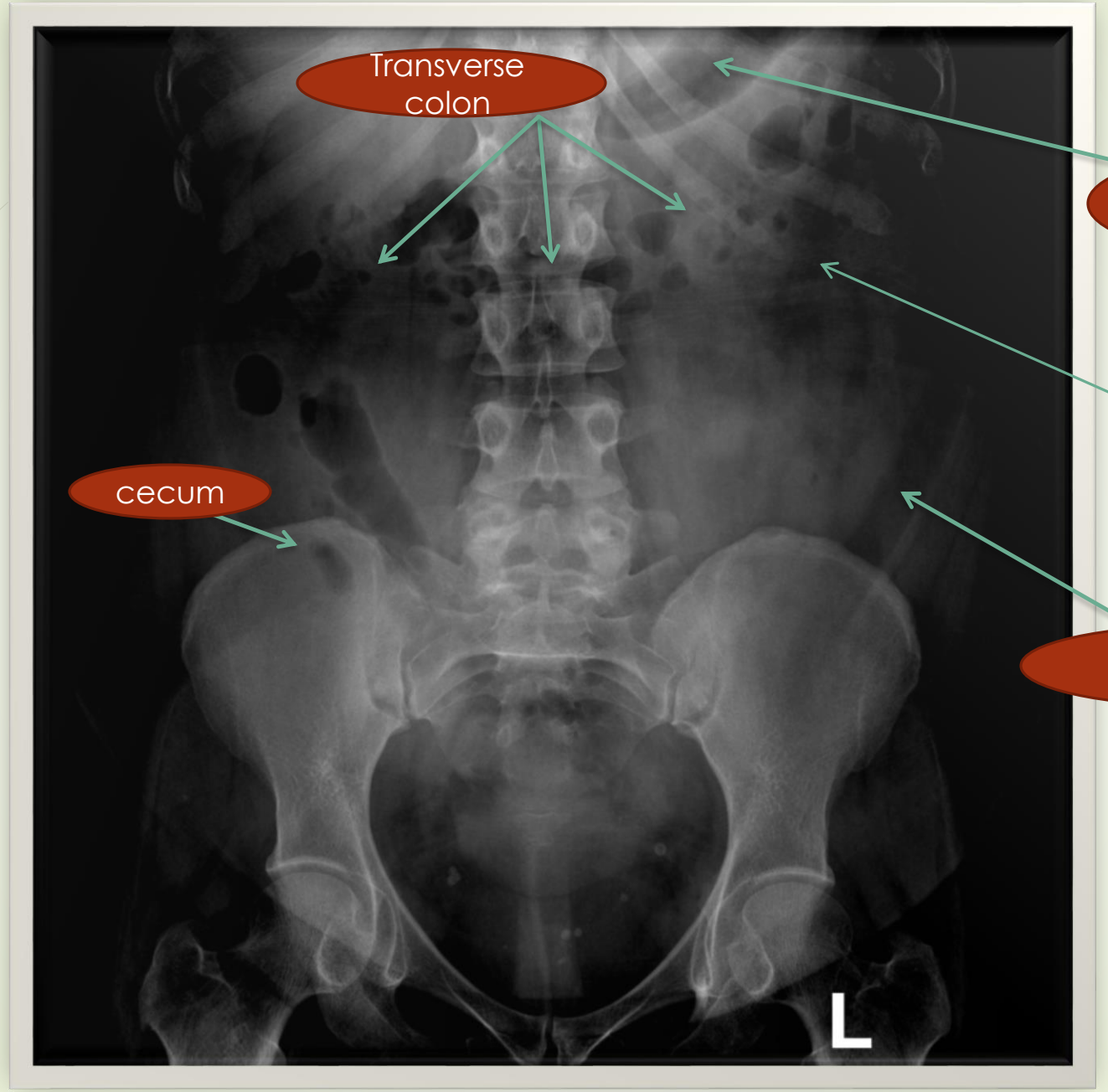
Transverse colon
stomach
Small bowel
cecum
Descending colon
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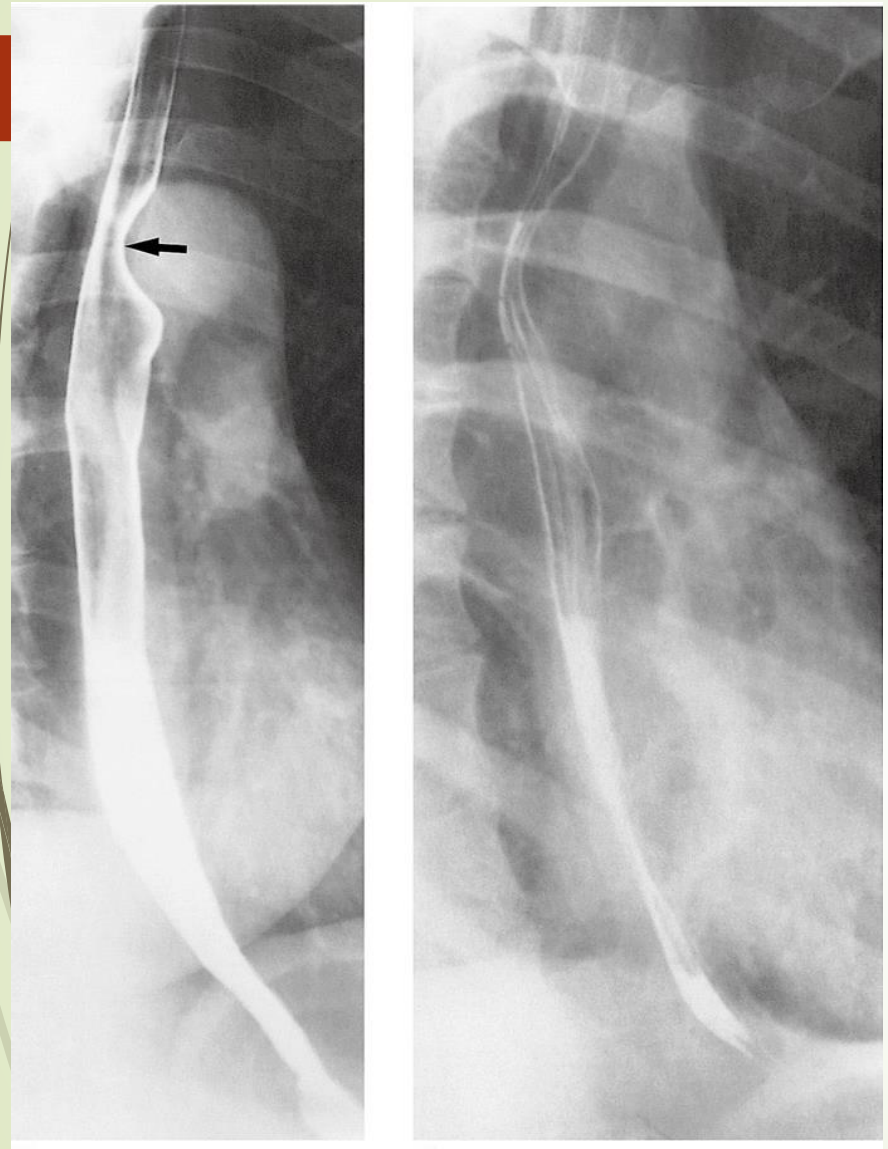

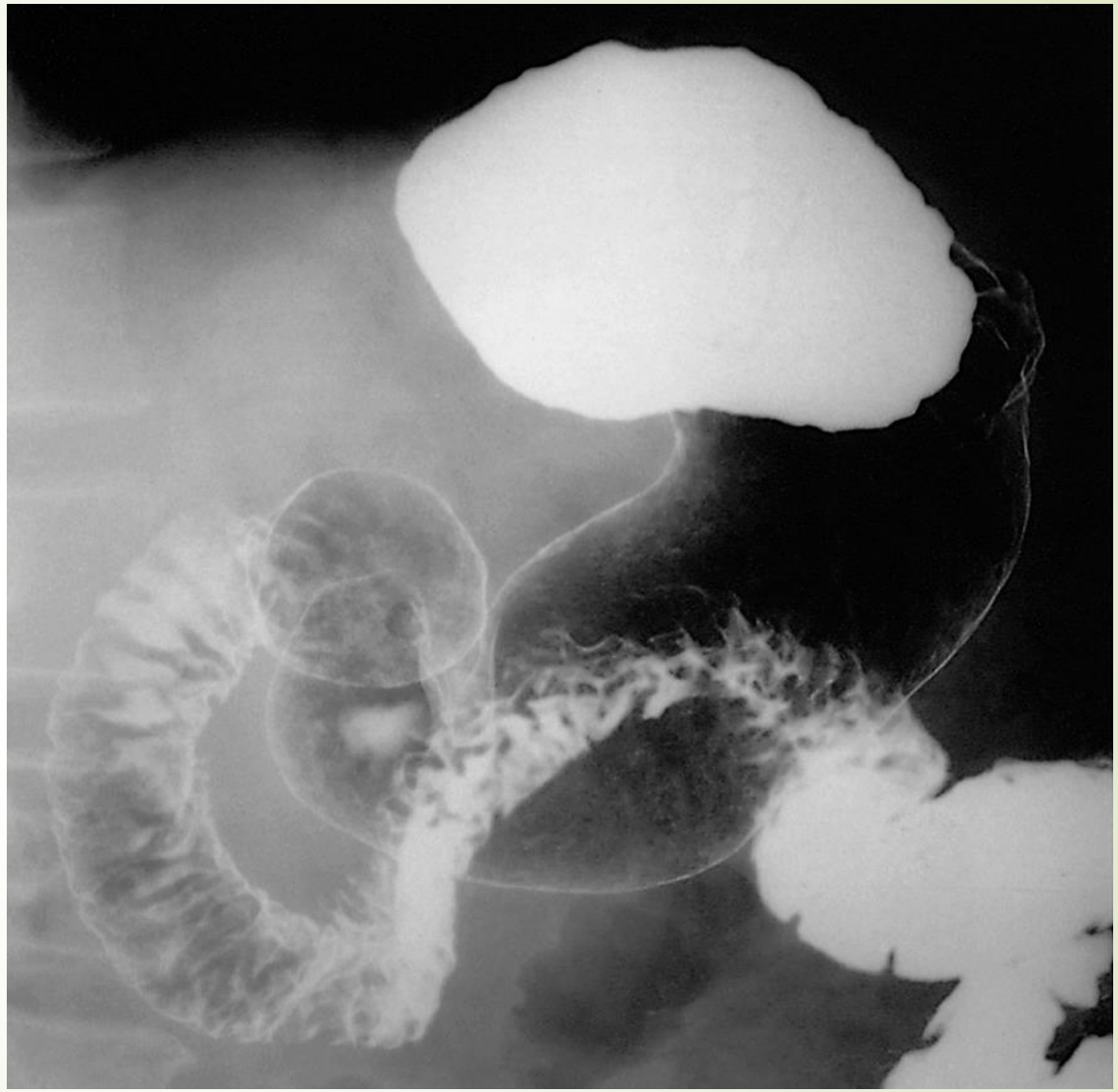


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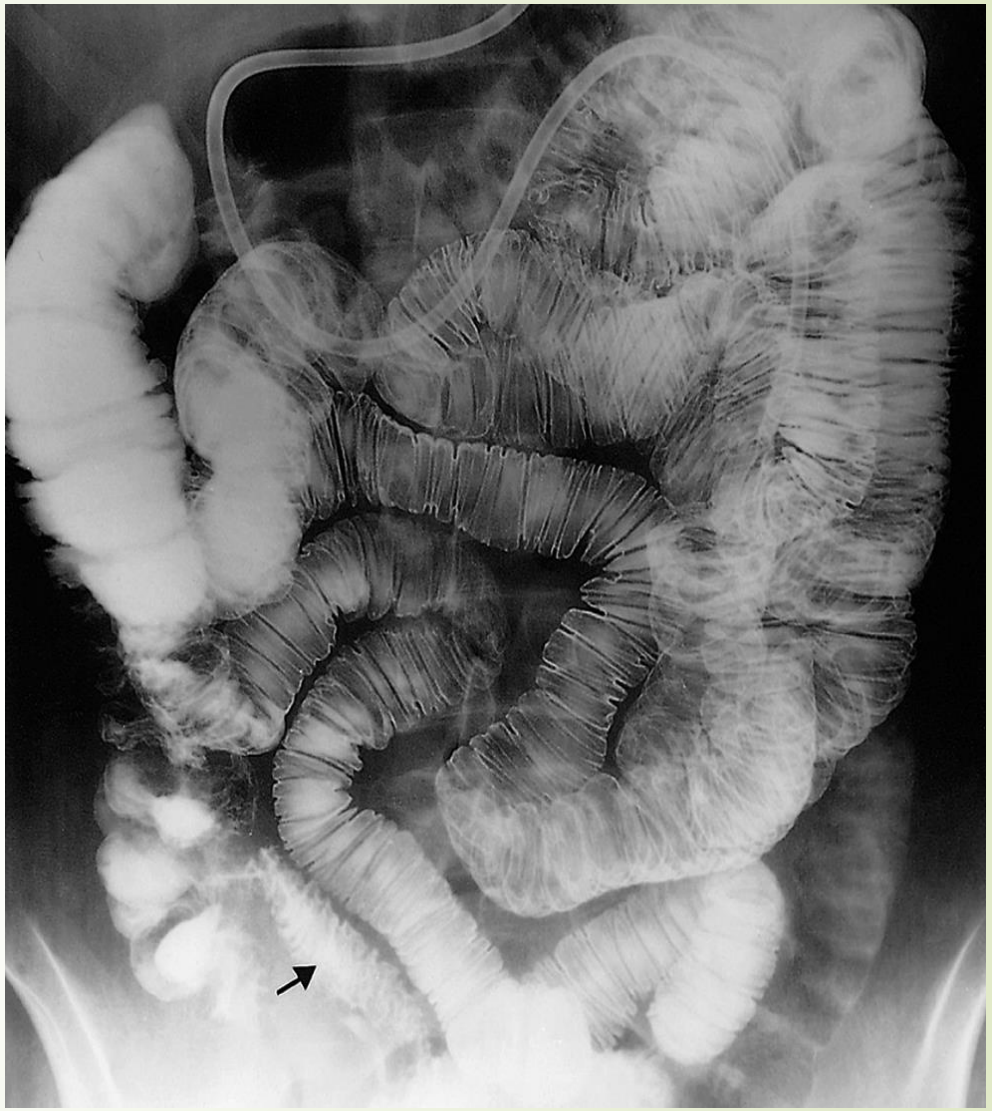

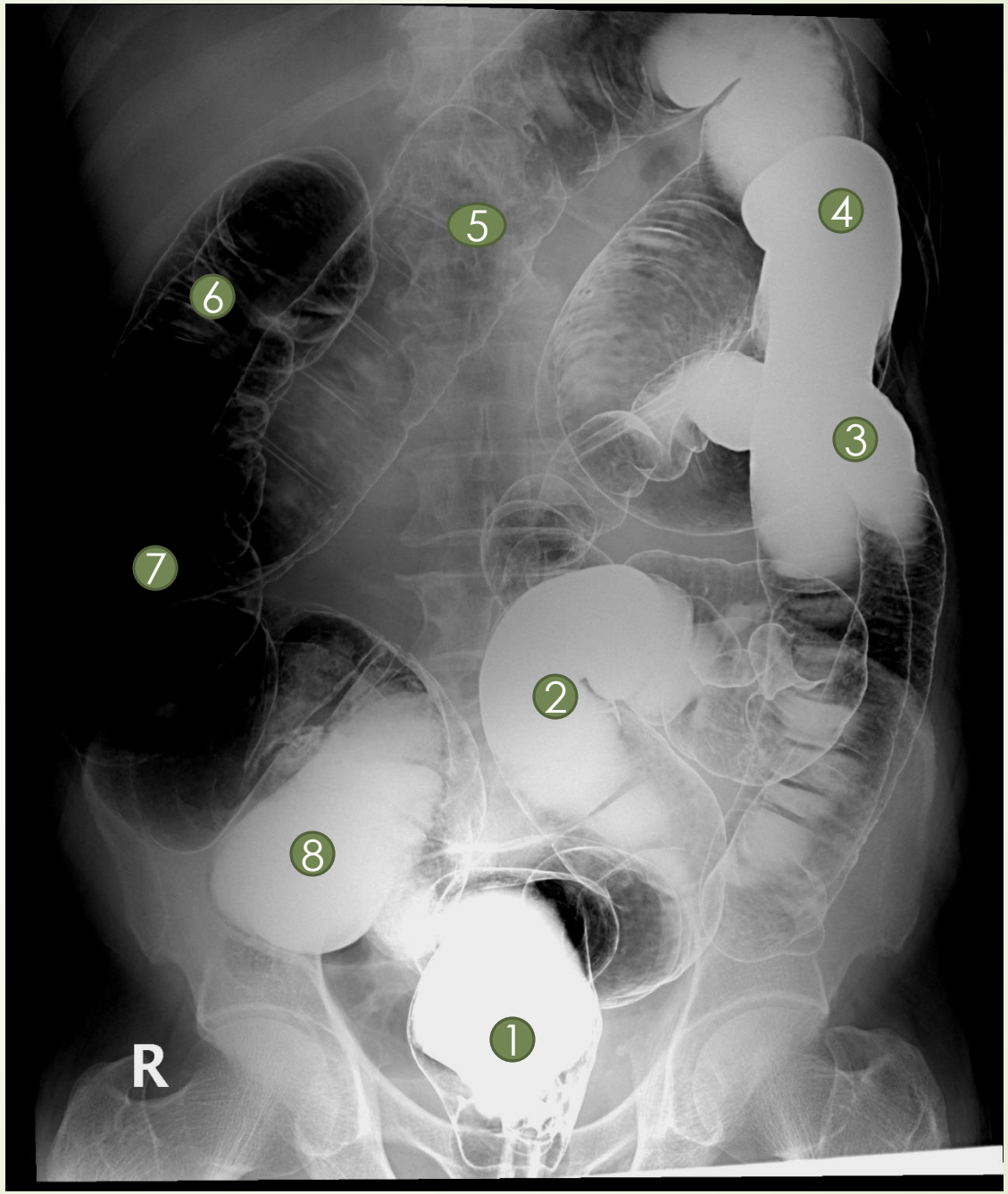
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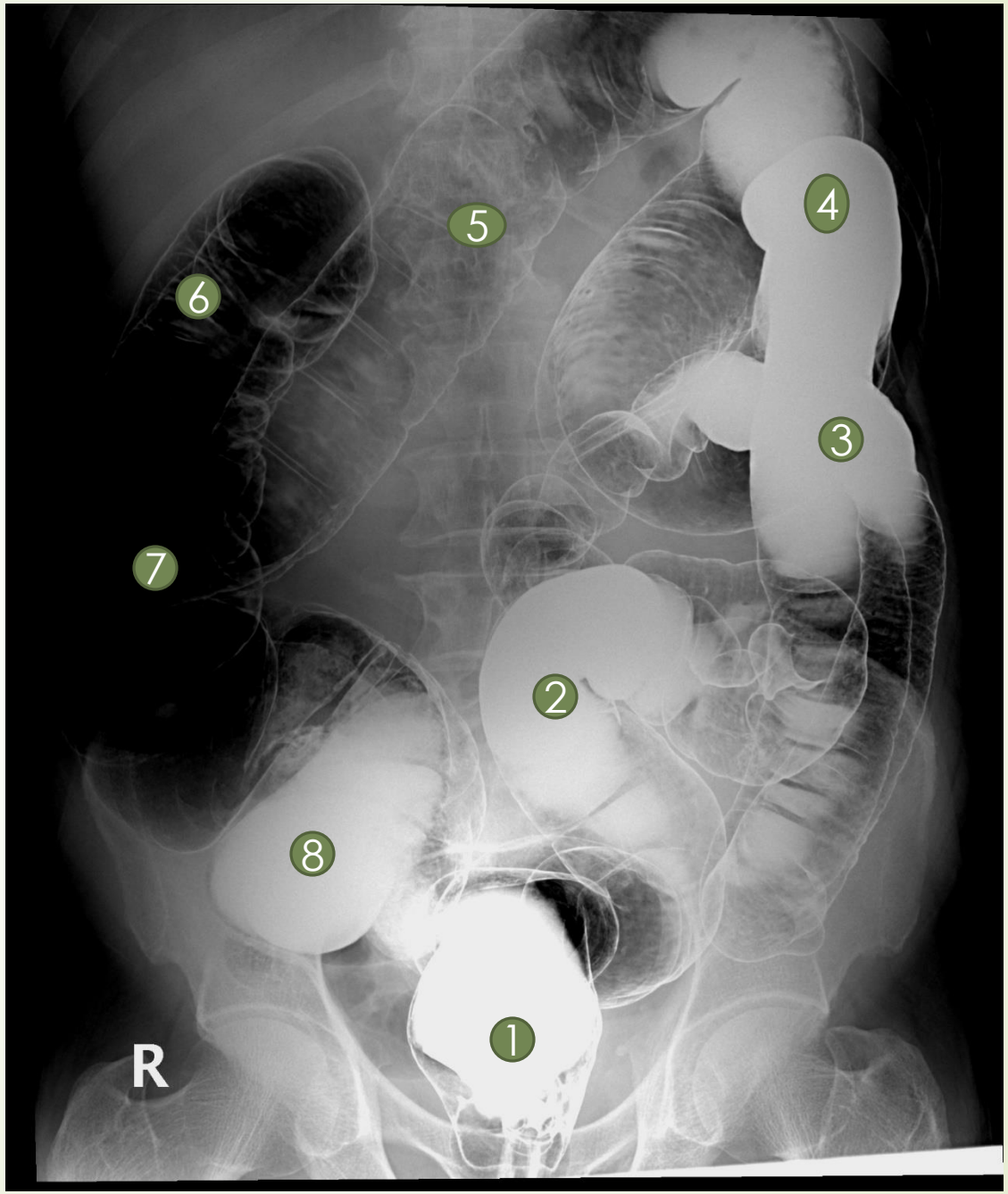
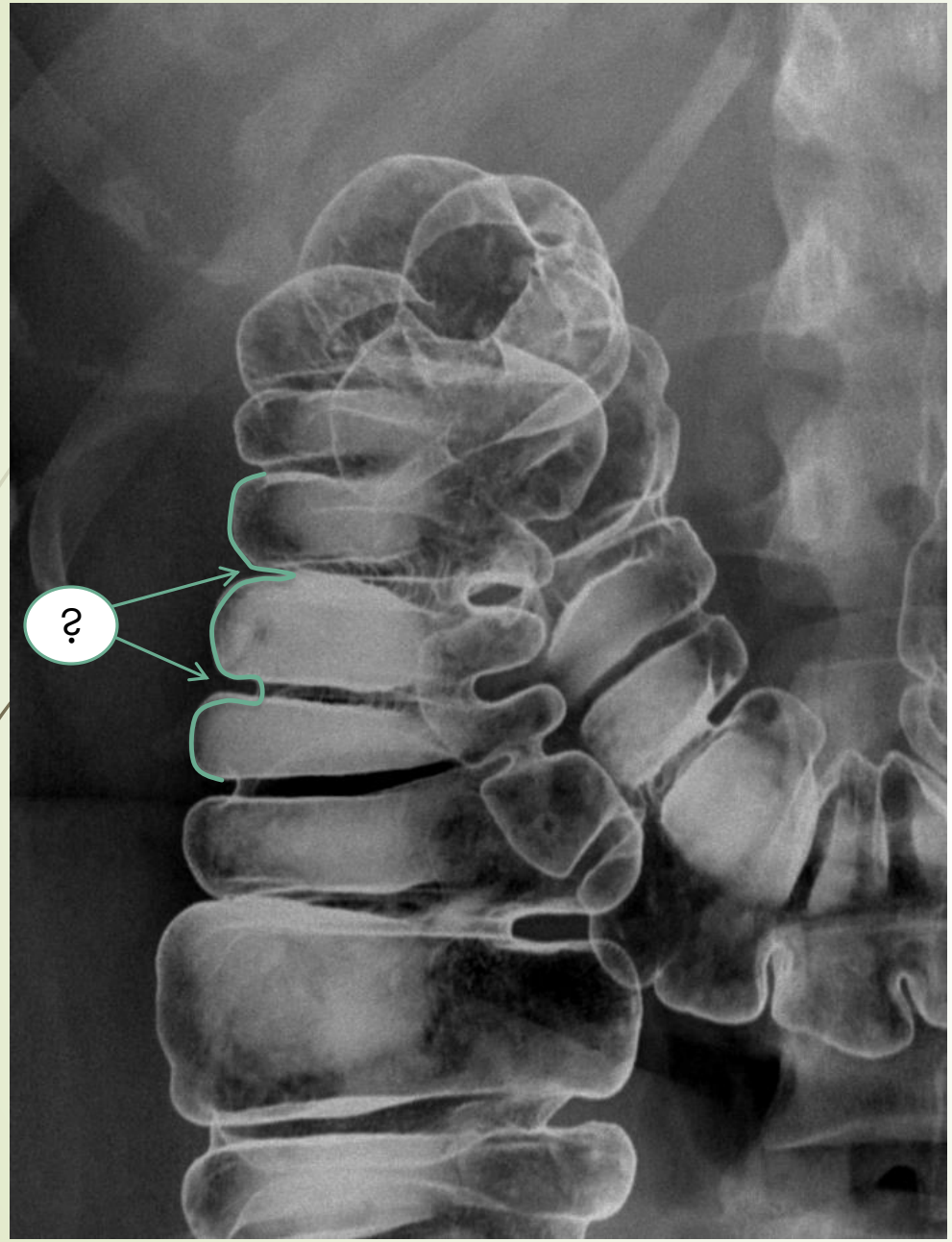
1. Rectum
2. Sigmoid colon
3. Descending colon
4. Splenic flexure
5. Transverse colon
6. Hepatic flexure
7. Ascending colon
8. cecum

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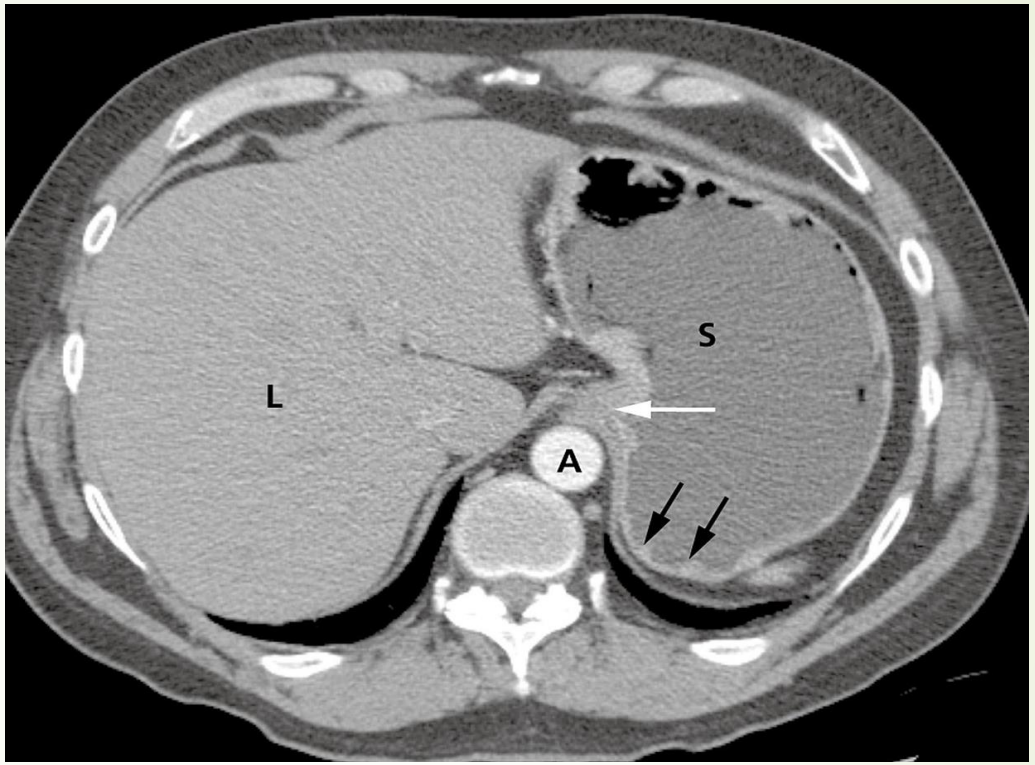
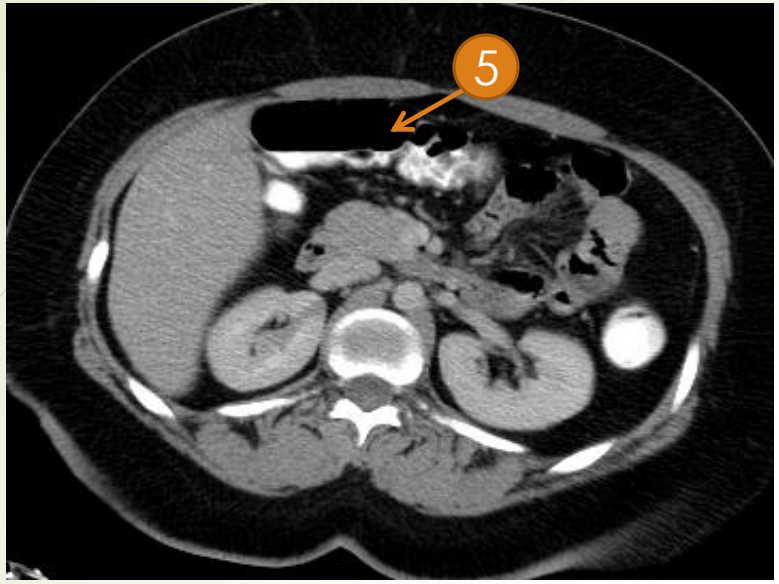


S stomach.
L liver.
A aorta.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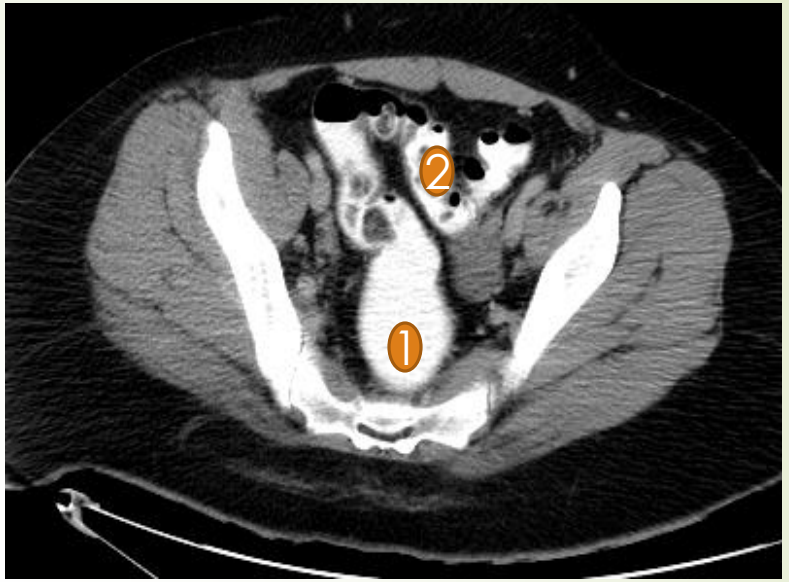
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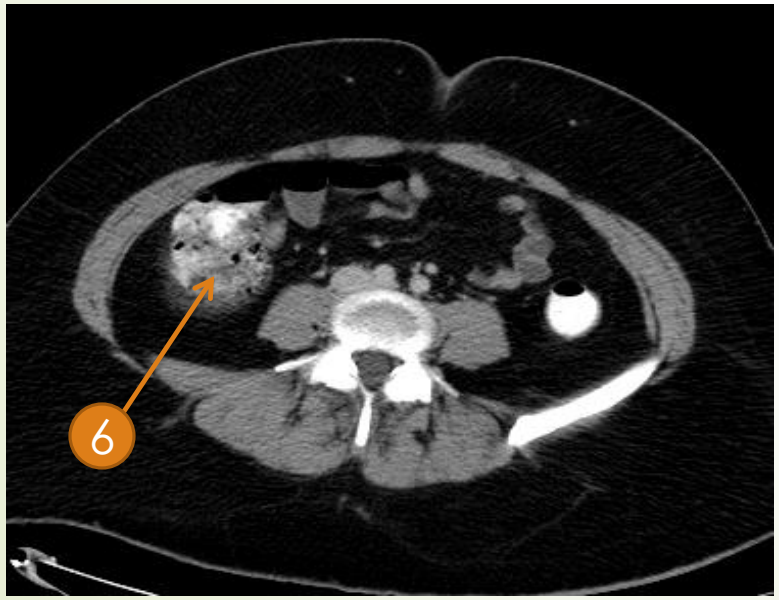
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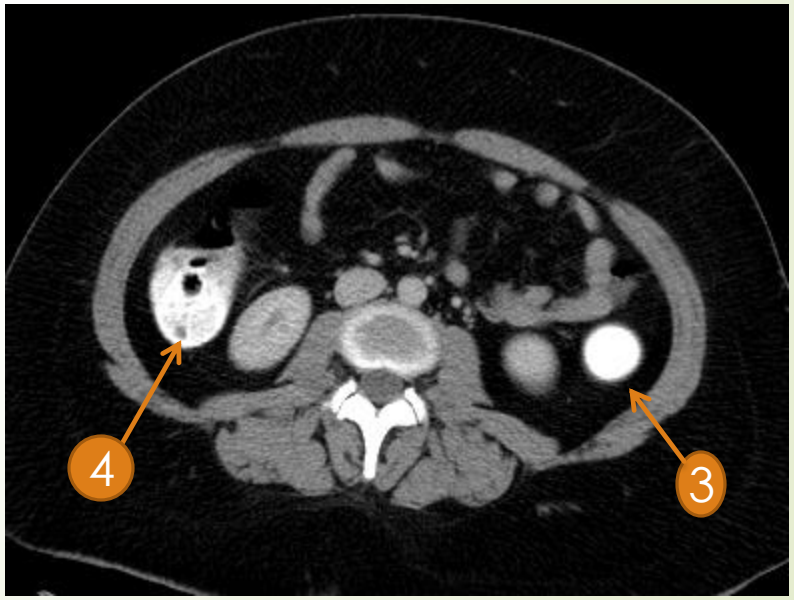
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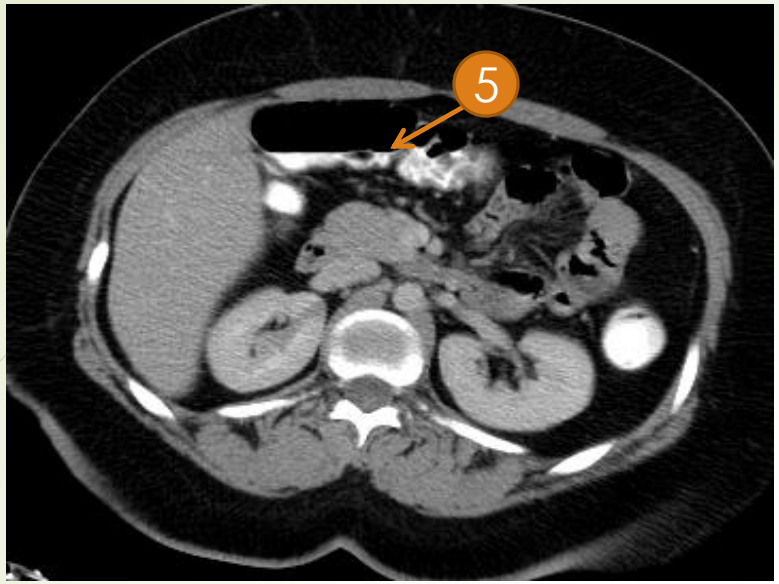
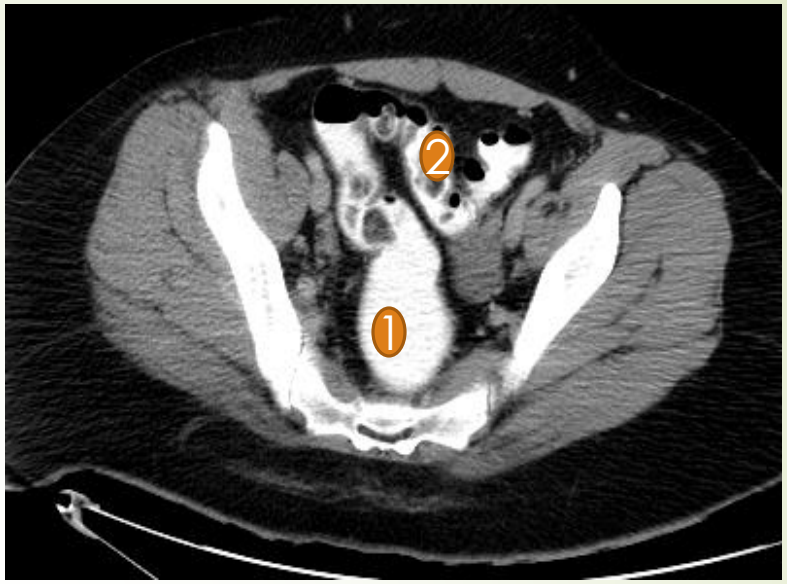
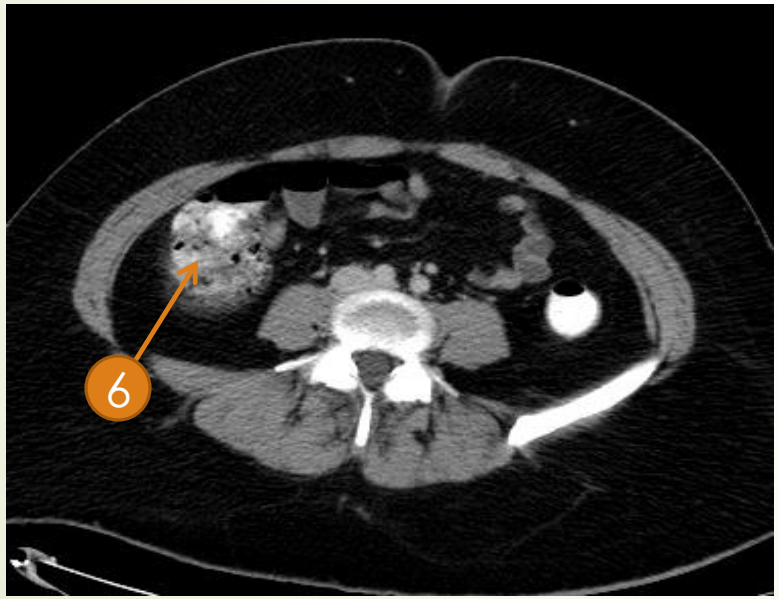
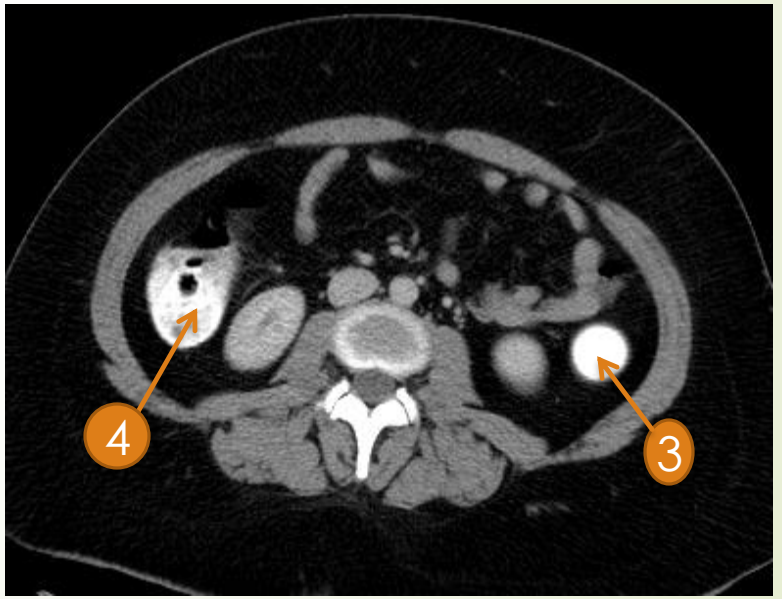








4-Ascending colon

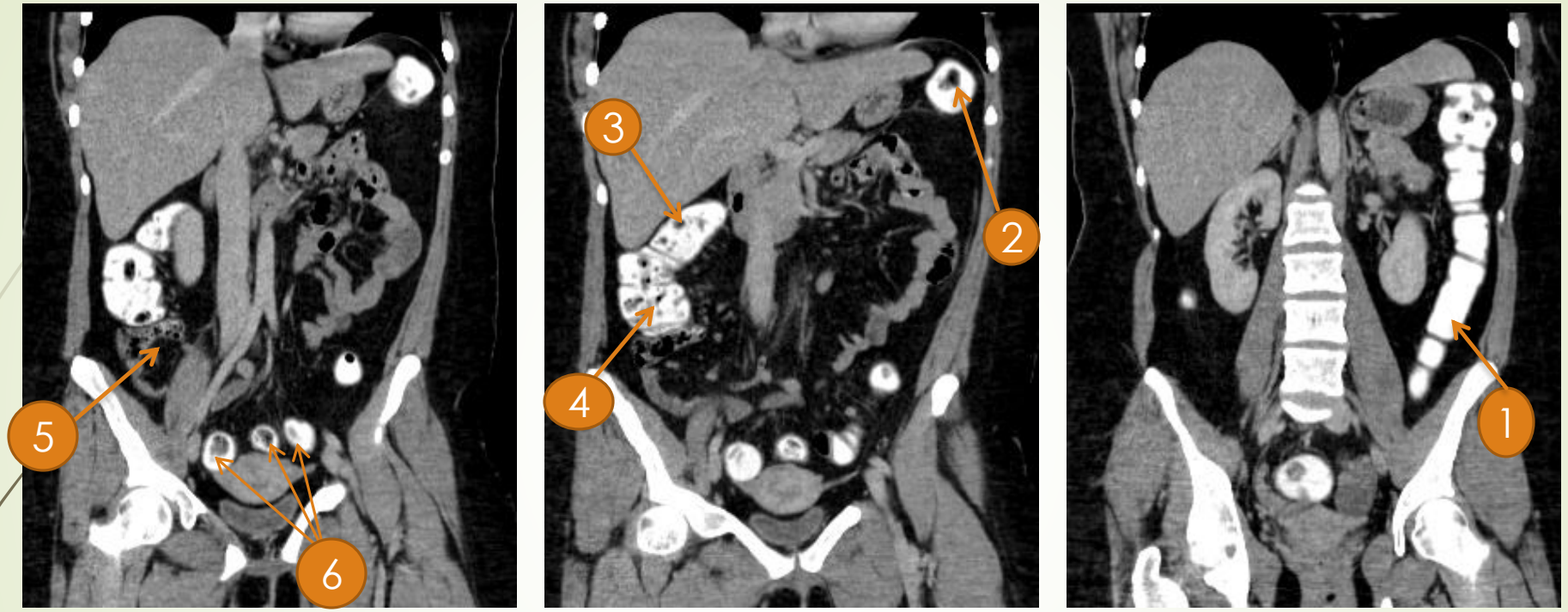
3-Descending colon

2-Sigmoid colon

1- Rectum

6-Cecum

5-Transverse colon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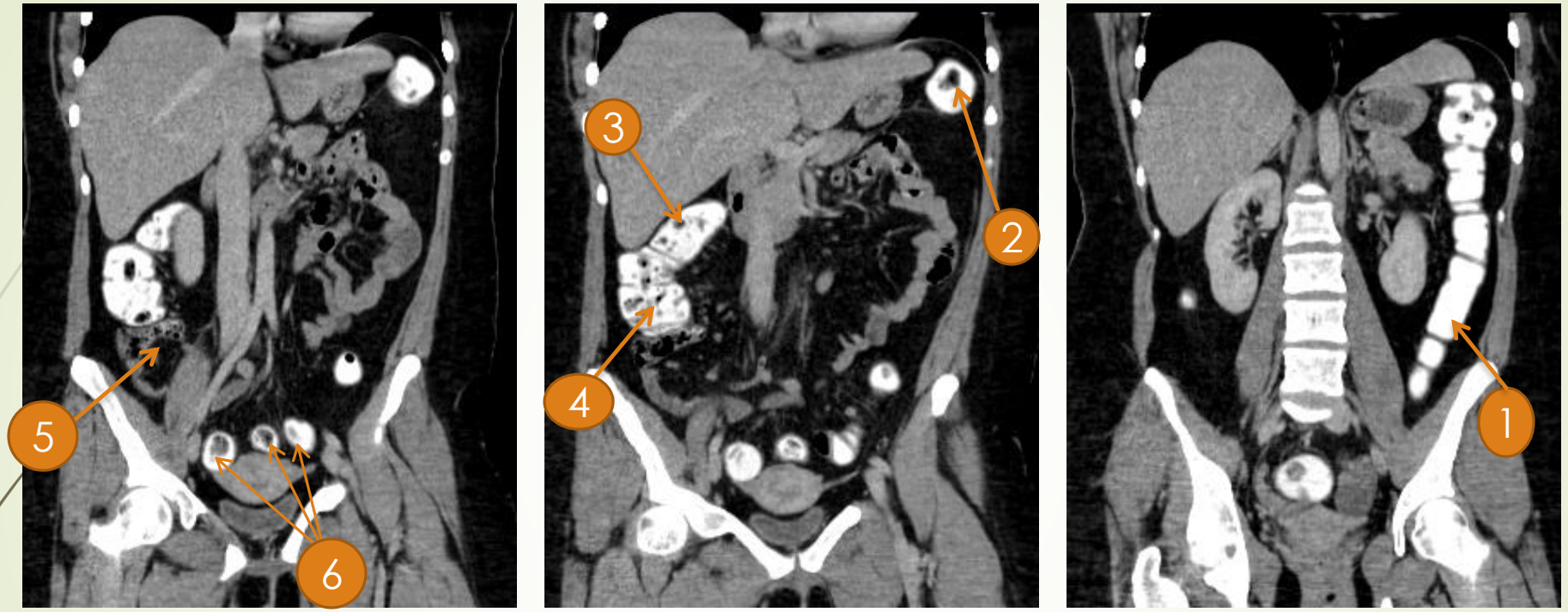
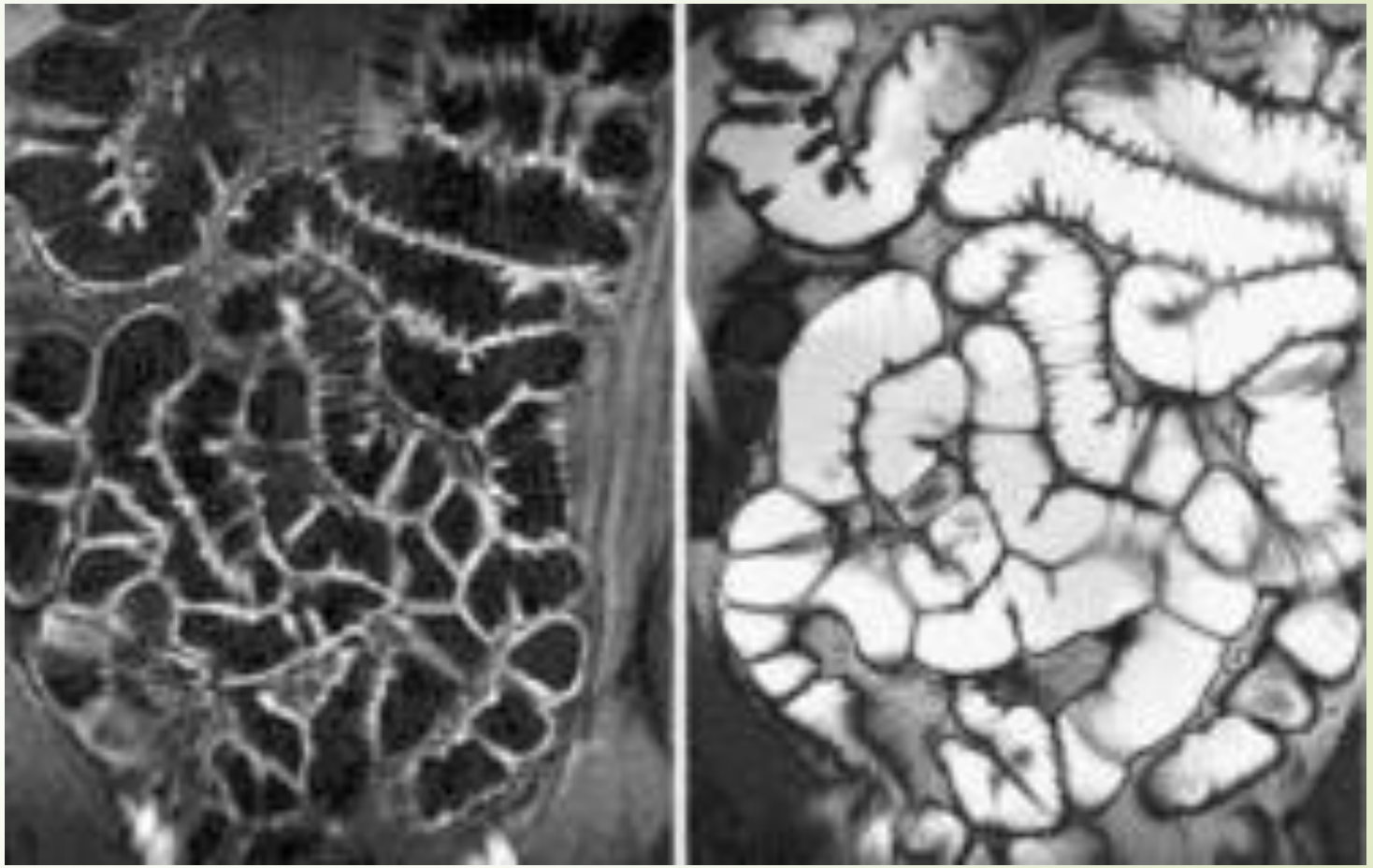
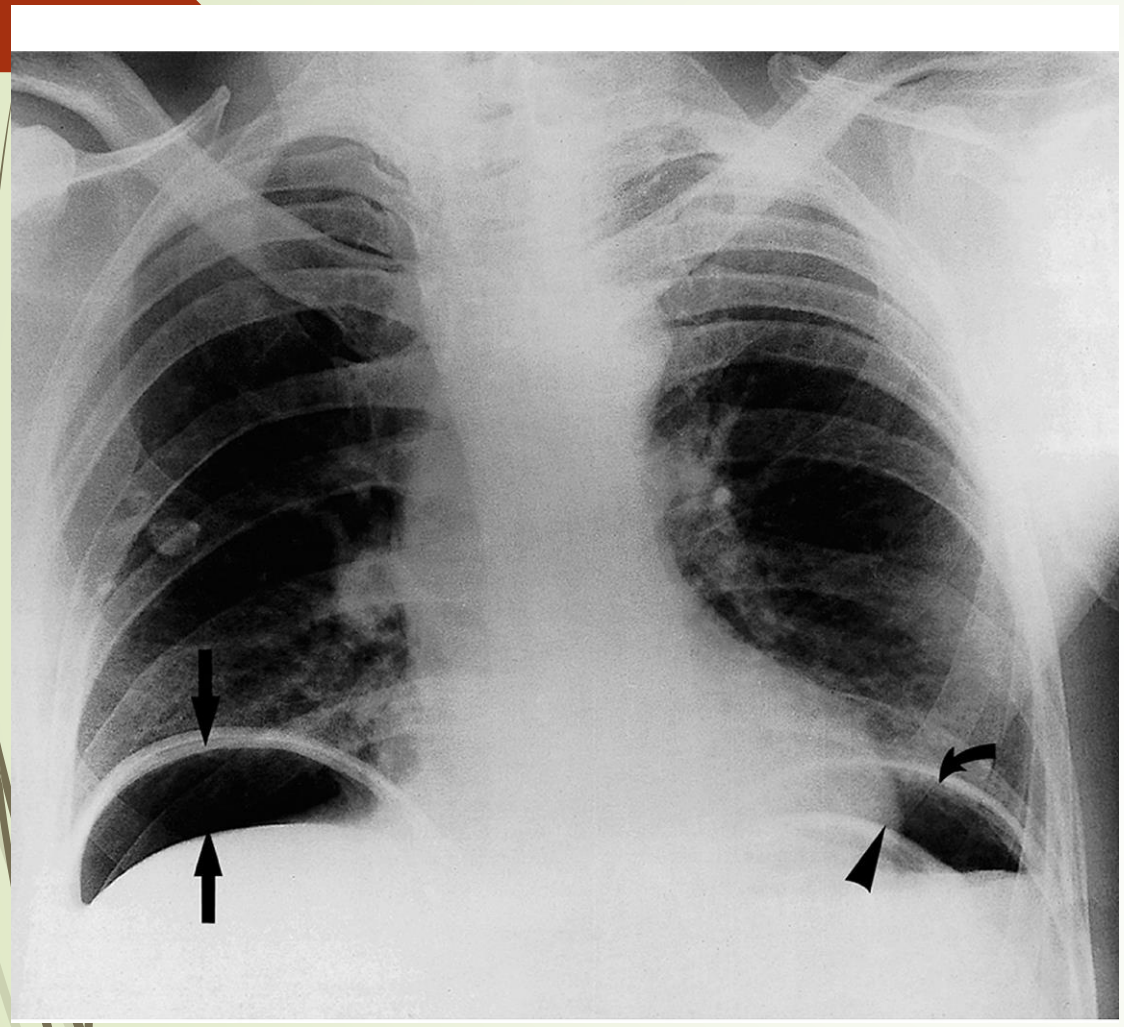


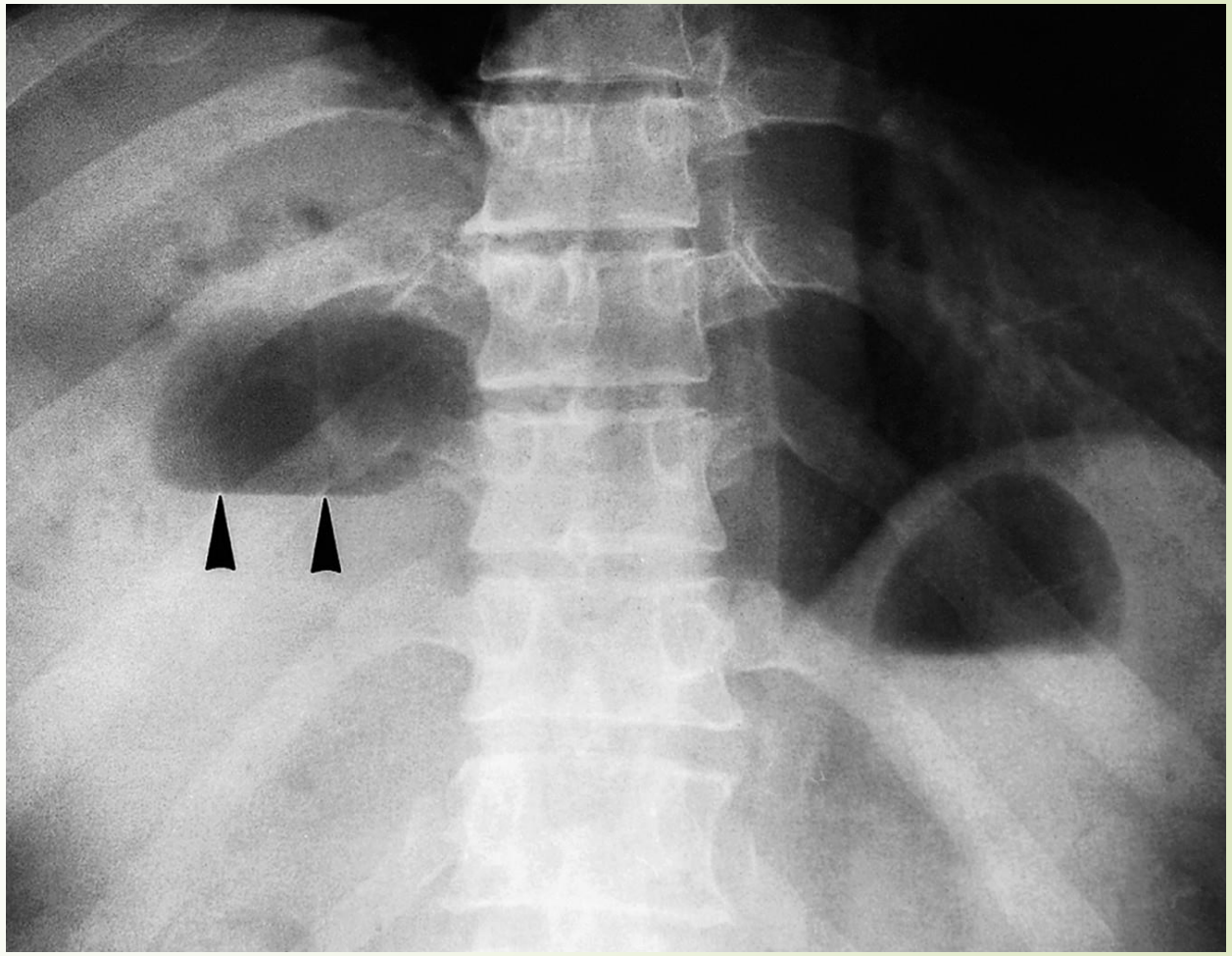
1. Descending colon
2. Splenic flexure
3. Hepatic flexure
4. Ascending colon
5. cecum
6. Sigmoid colon

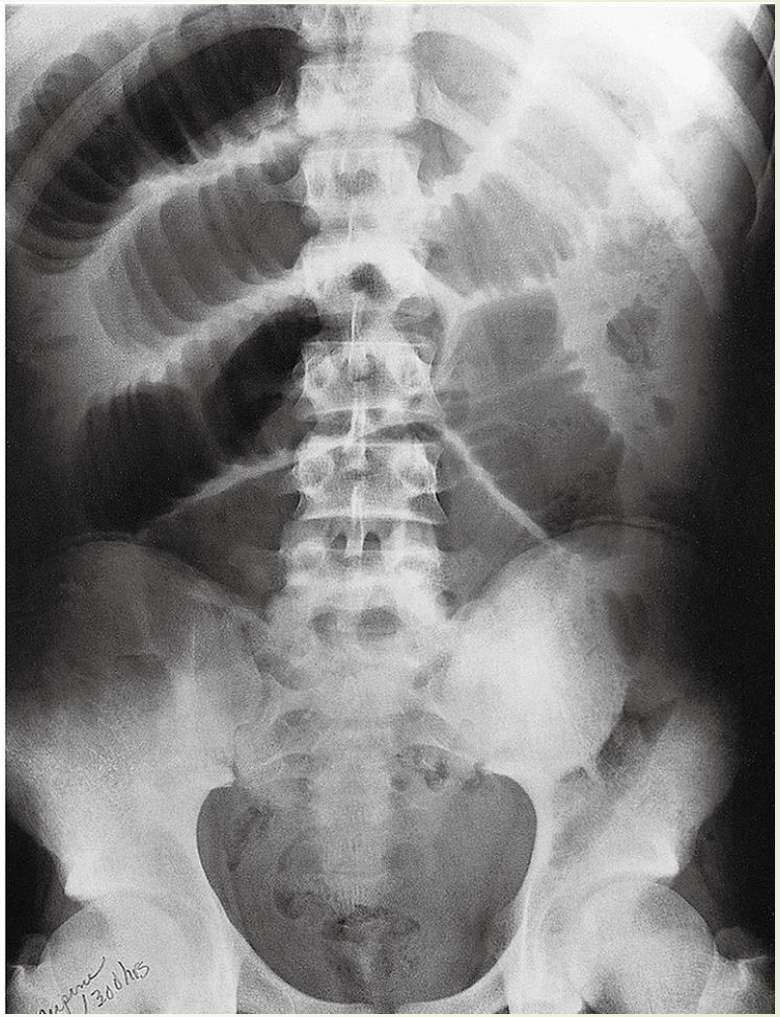


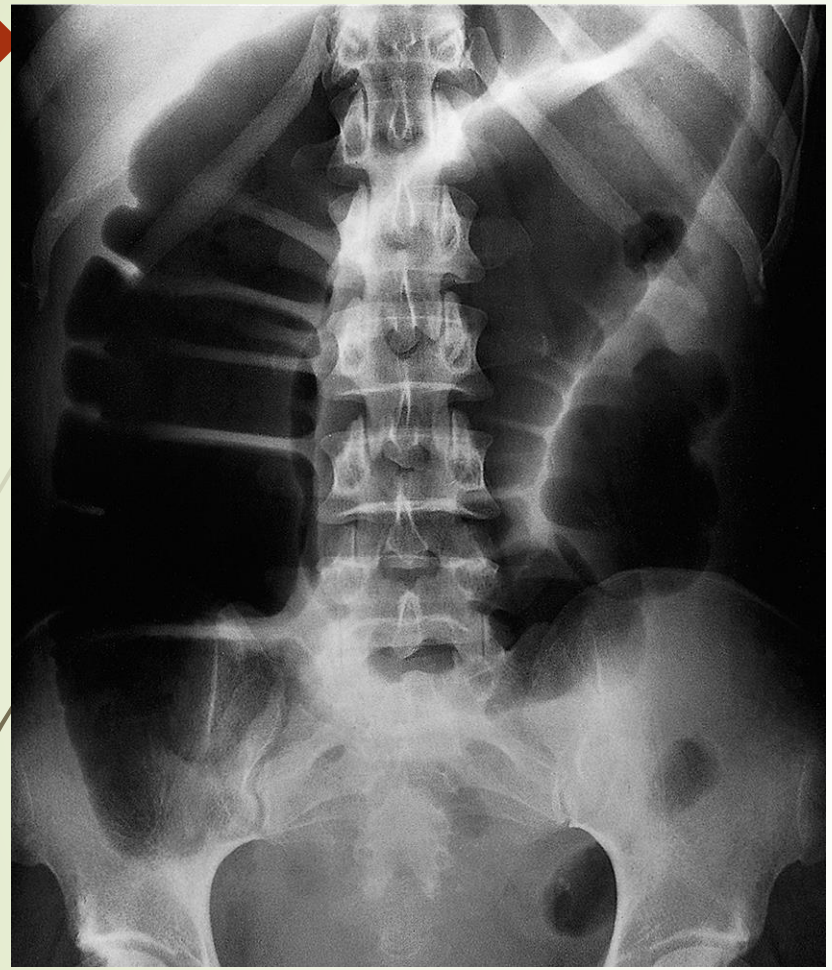
MRI enterography

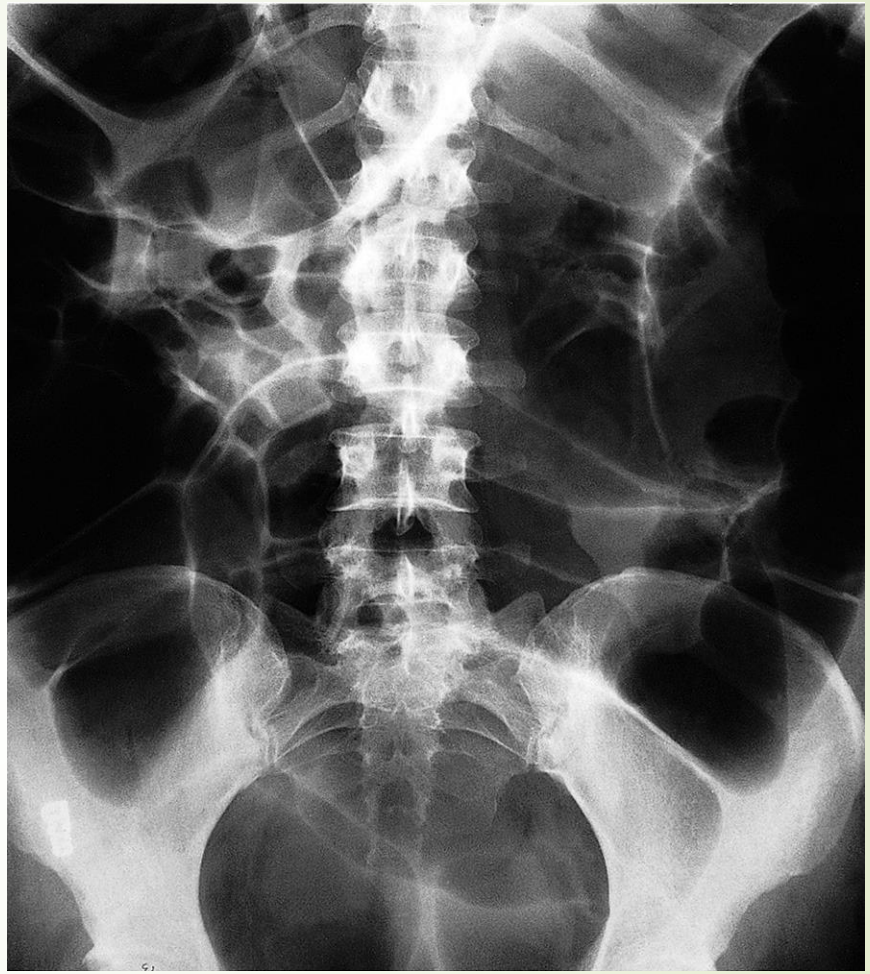
Common plain x-ray abdomen radiograph findings

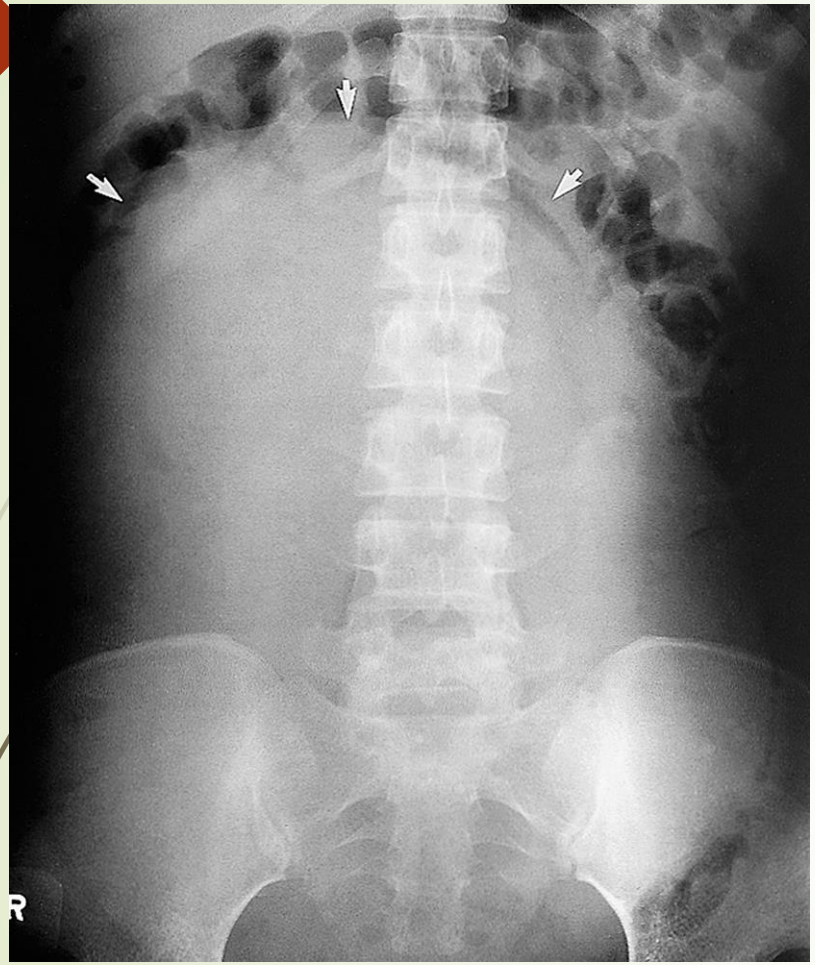








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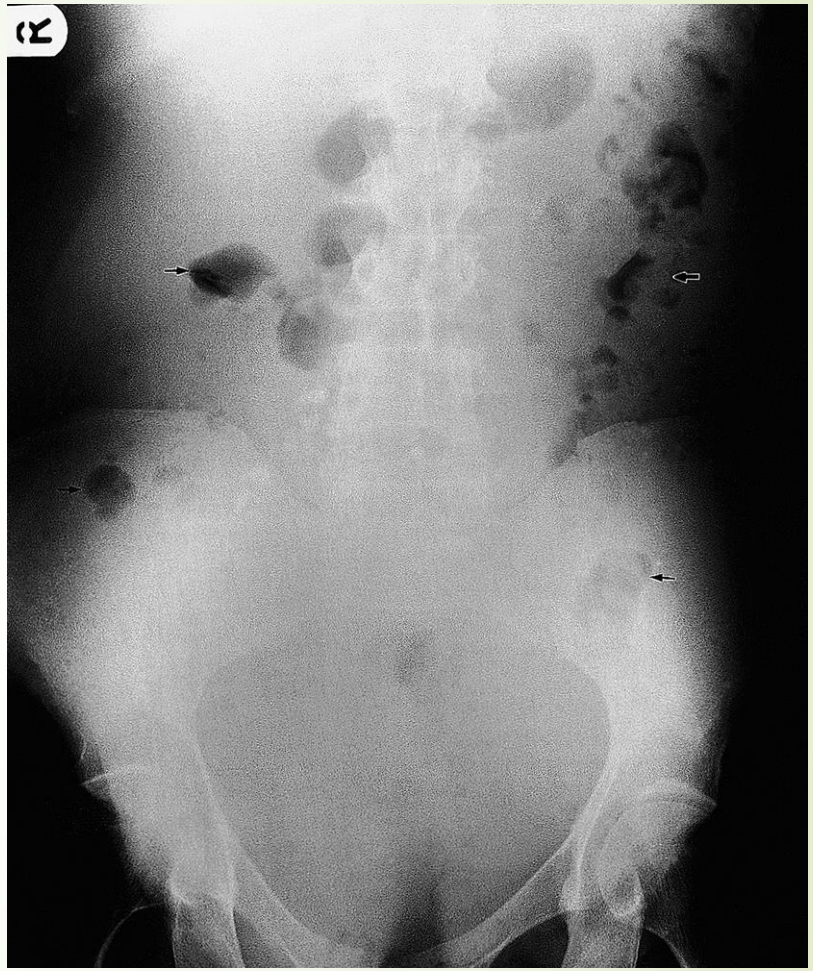

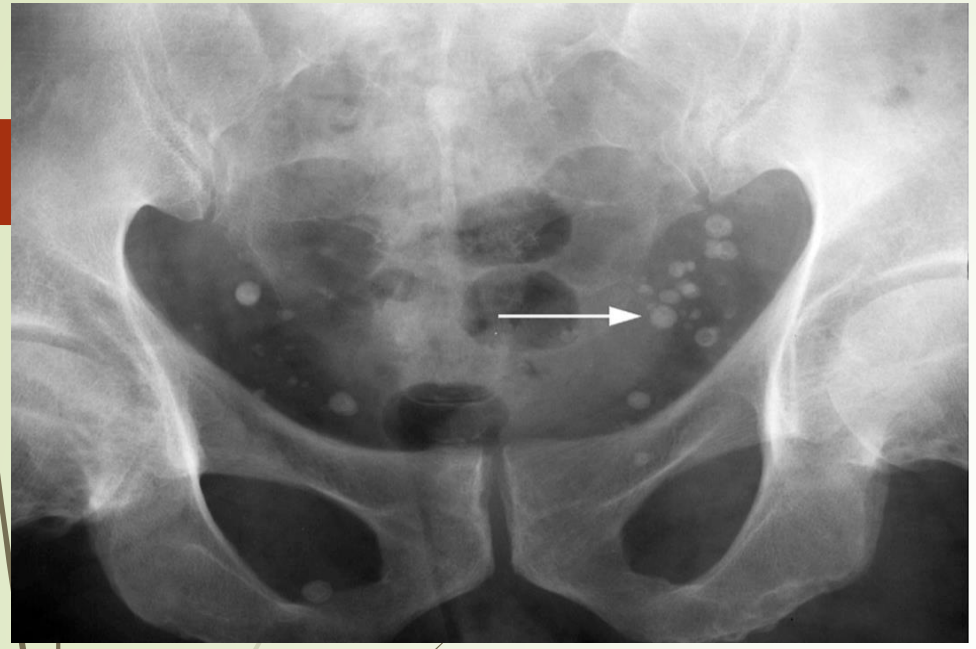

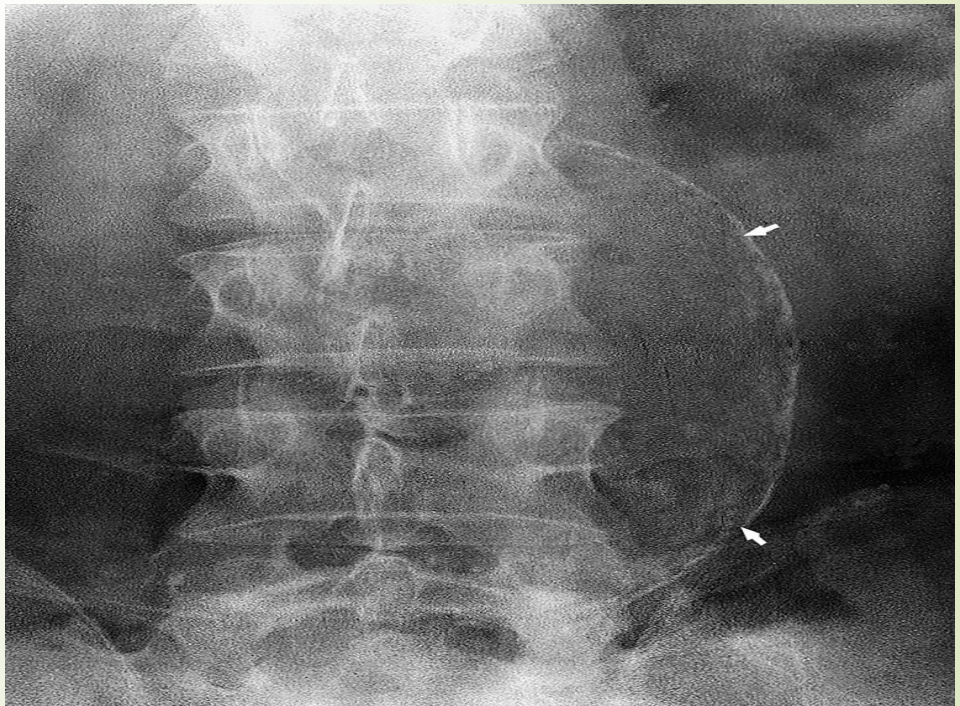

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THANK YOU