Abdominal X-ray

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Learning Objectives

Indications

Technique

Normal Anatomy

Common questions accompanying requests for an abdominal X-ray (AXR): Indications

- Intraperitoneal free air?
- Widened intestinal loops?
- Kidney stones/ureteral stones/bladder stones?
- Foreign body?
- Position of gastric tube/duodenal tube?

Indications:

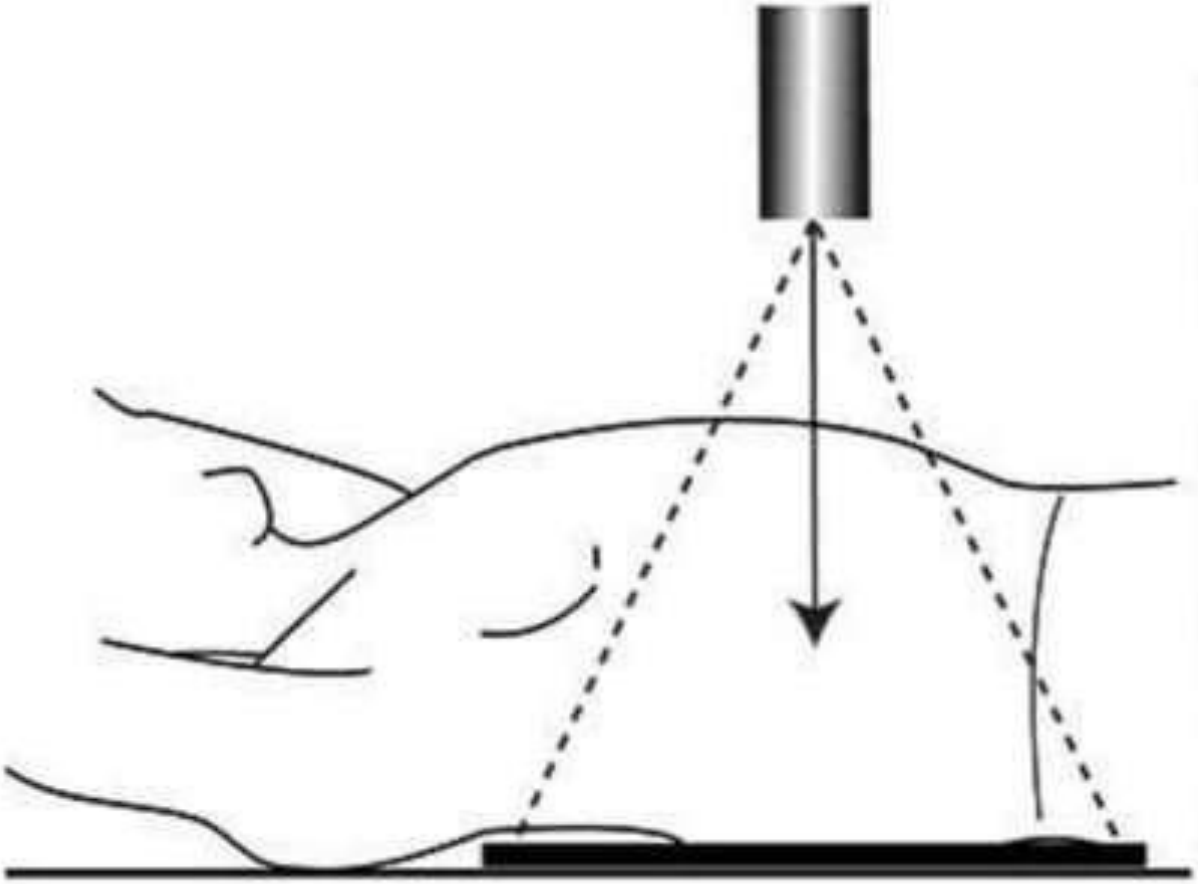
- Bowel obstruction
- Perforation
- Renal pathology
- Acute abdomen
- Foreign body localization
- Toxic megacolon
- Aortic aneurysm
- Control or preliminary films for contrast studies
- Detection of calcification or abnormal gas collection

Technique

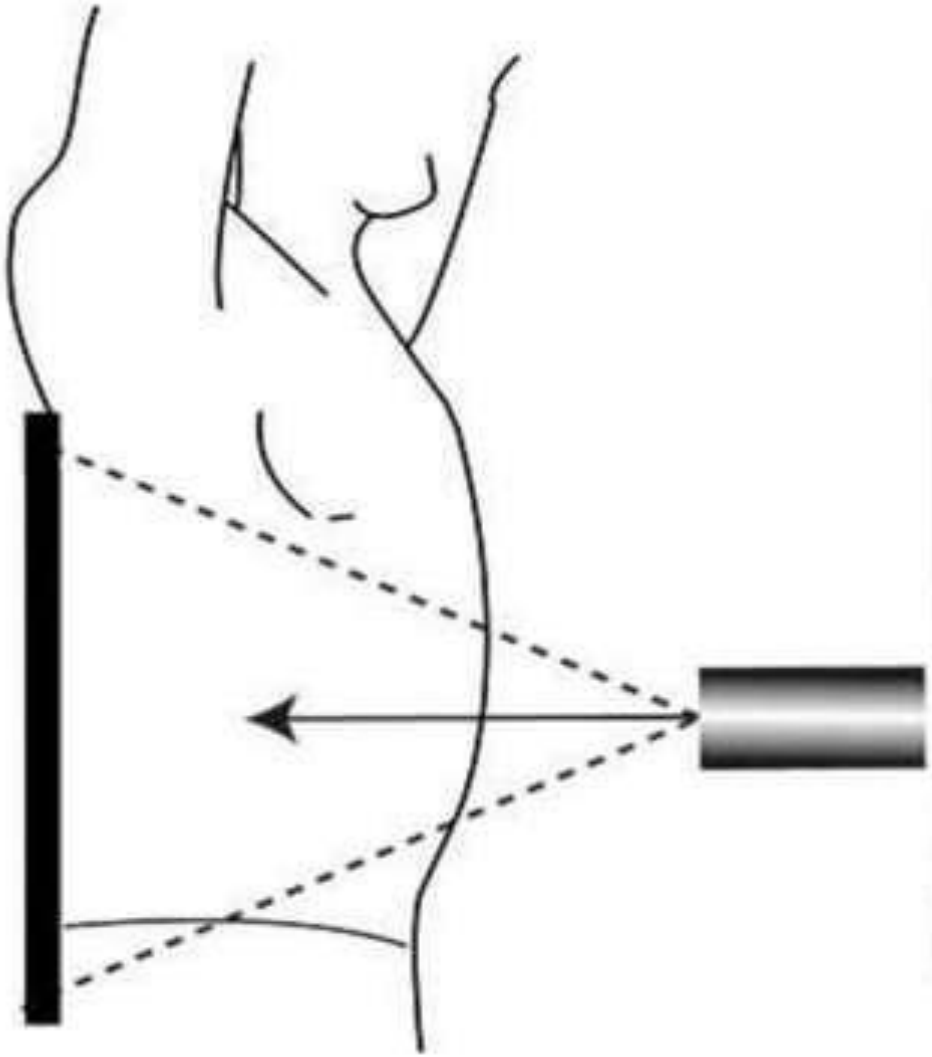
Positions:

- Standing
- Supine
- Lateral

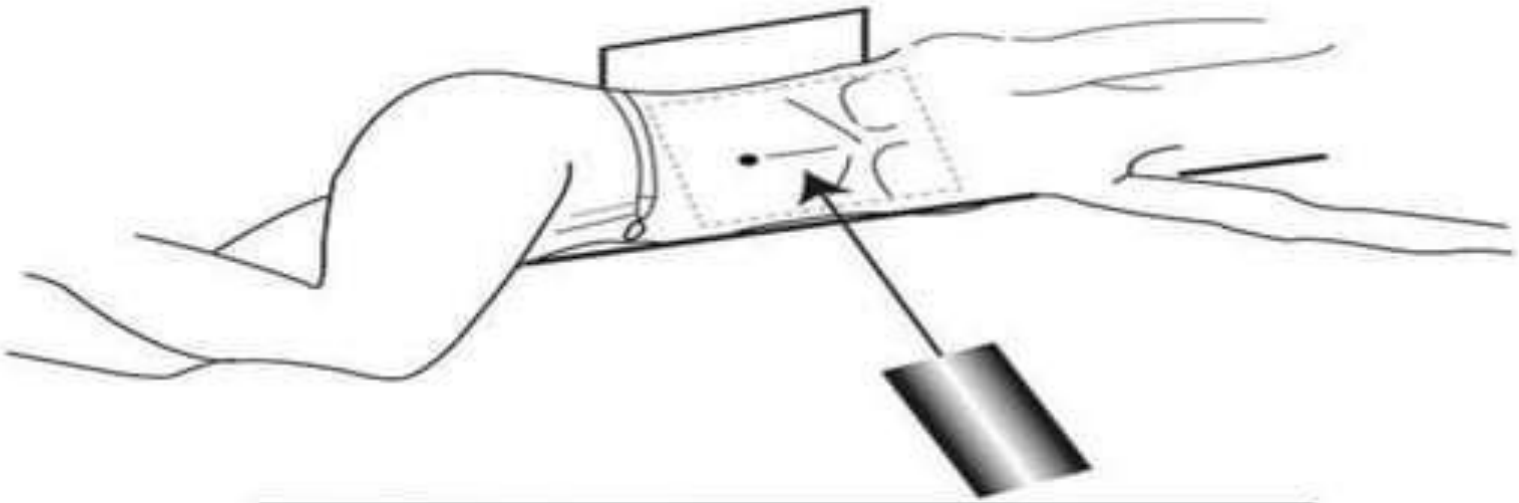
- *Technique for supine AP (anterior-posterior) image*



- *Technique for standing AP (anterior-posterior) image*



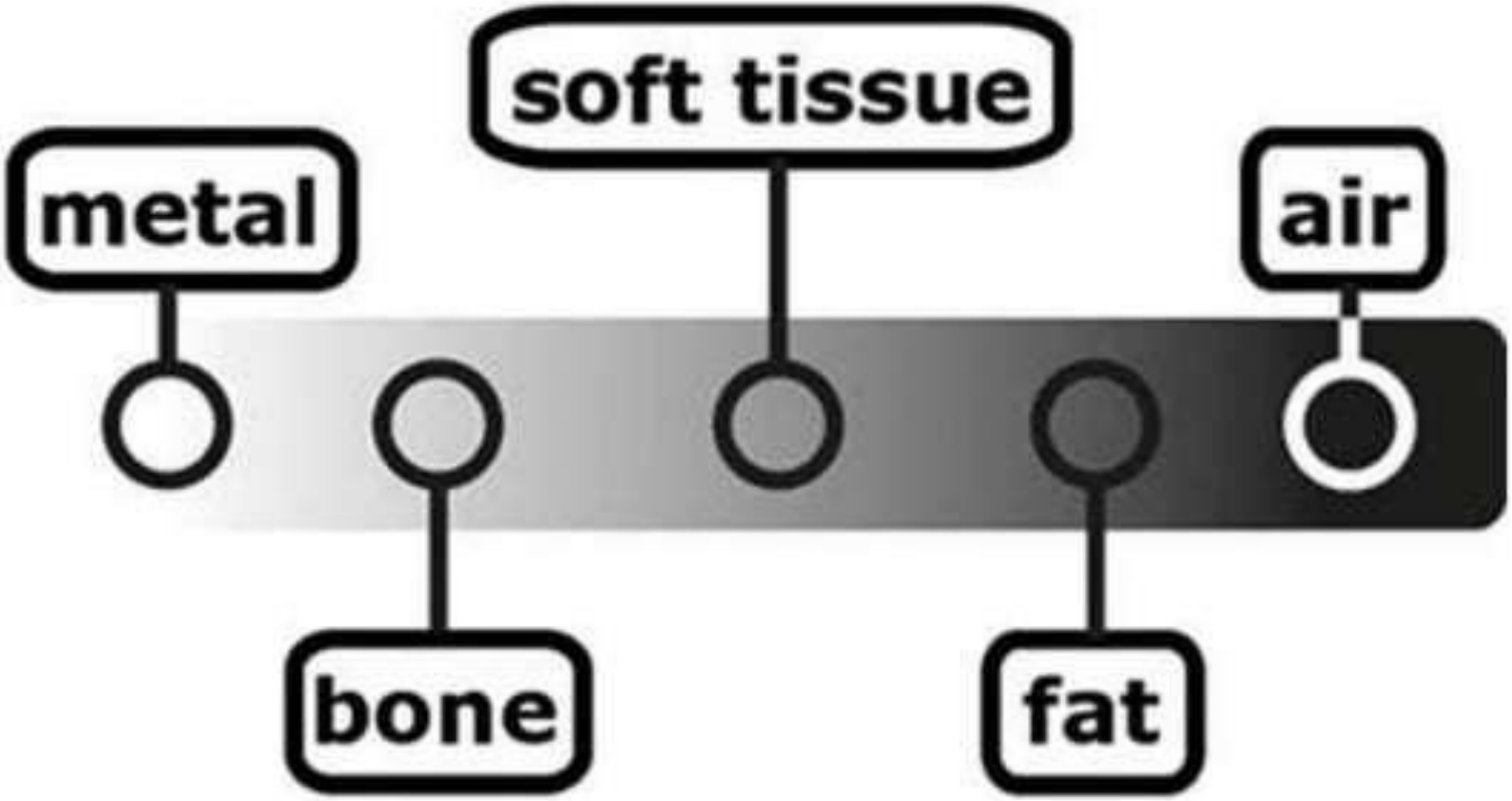
- *Technique for lateral image lying on the left side*



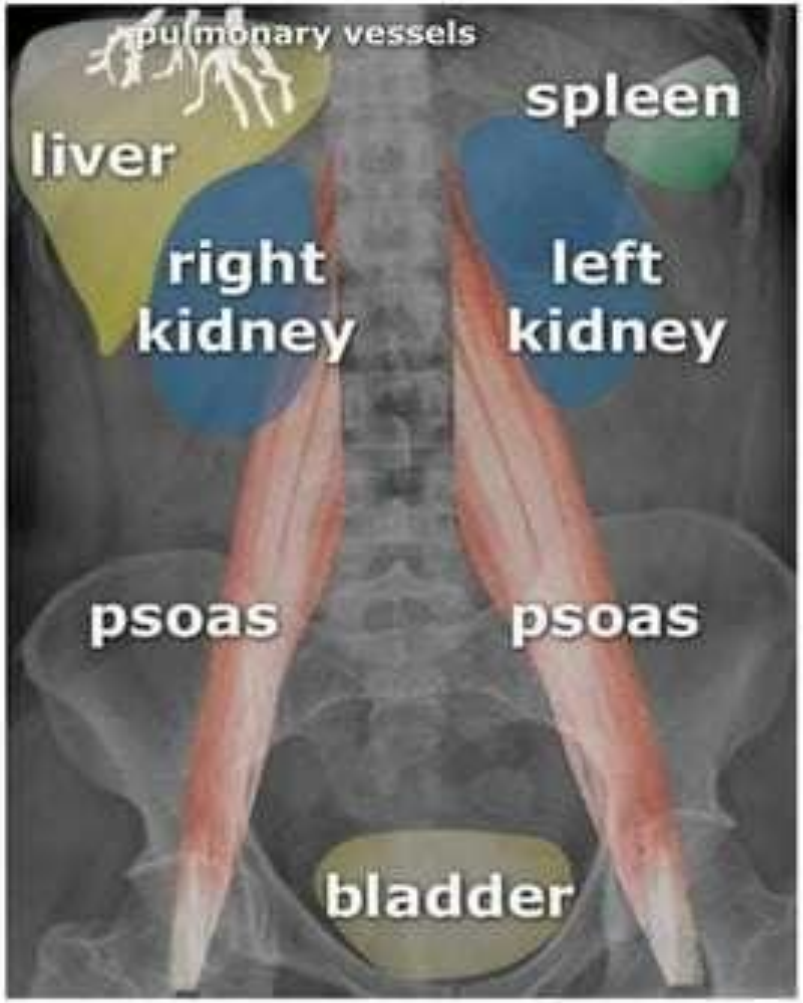
Basic densities on x rays:

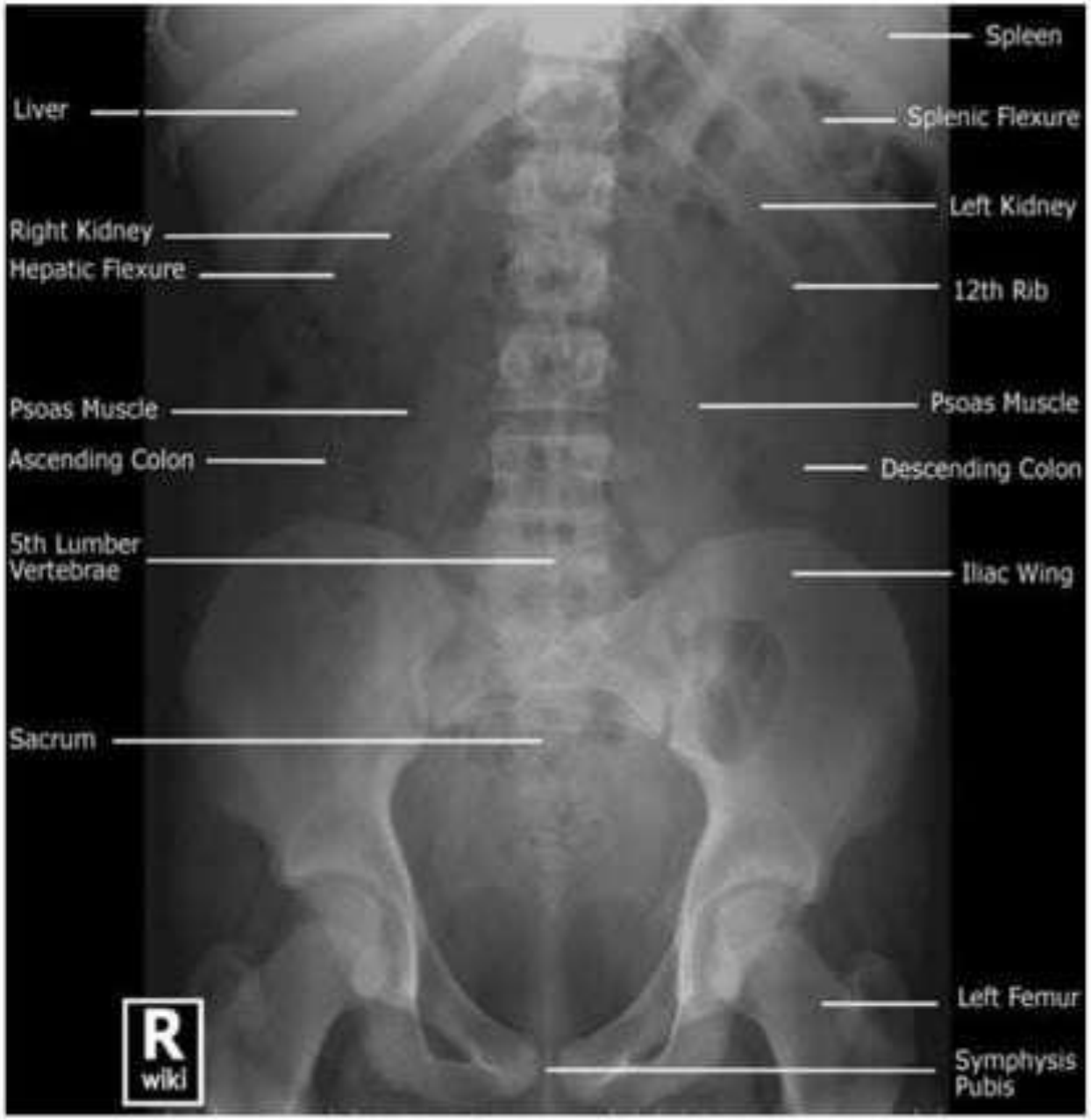
- Gas : Black
- Fat :Dark grey
- Soft tissue/fluid :Light grey
- Bone/calcification :White
- Metal :Intense white

- X-ray densities(whiteness)



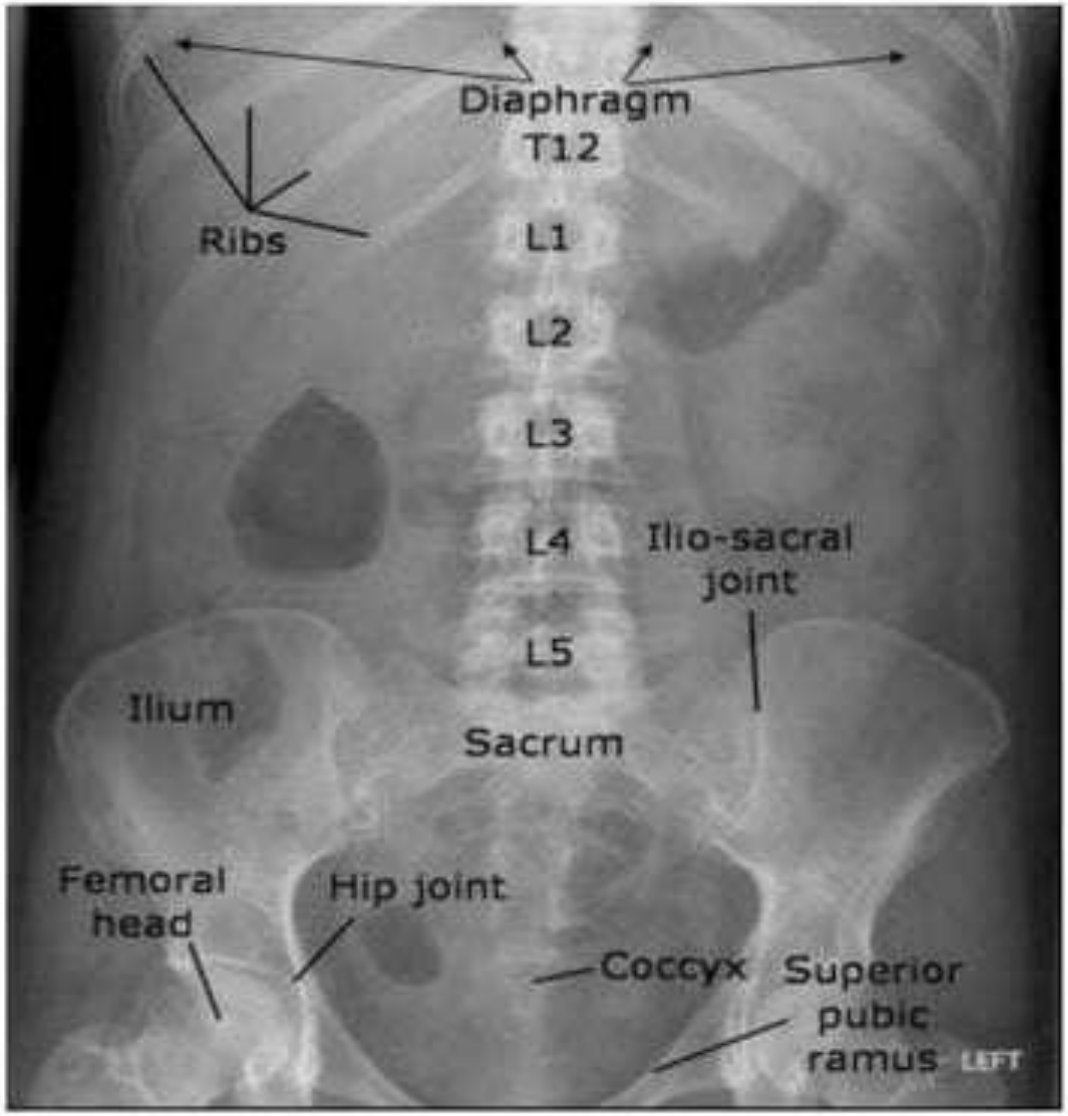
Normal Anatomy




Spleen
Liver
Splenic Flexure
Left Kidney
Right Kidney
Hepatic Flexure
12th Rib
Psoas Muscle
Psoas Muscle
Ascending Colon
Descending Colon
5th Lumber Vertebrae
Iliac Wing
Sacrum
Left Femur
Symphysis Pubis
R
wiki


LEFT


Liver
Spleen
Stomach
Right kidney
Left kidney
Psoas muscle
Small intestine
Ascending colon
Descending colon
Rectum
LEFT


Diaphragm
T12
Ribs
L1
L2
L3
L4
Ilio-sacral joint
L5
Ilium
Sacrum
Femoral head
Hip joint
Coccyx
Superior pubic ramus
LEFT

- 1, 11th rib.
  - 2, Vertebral body (TH 12).
- 3, Gas in stomach.
- 4, Gas in colon (splenic flexure).
- 5, Gas in transverse colon.
- 6, Gas in sigmoid.
- 7, Sacrum.
- 8, Sacroiliac joint.
- 9, Femoral head.
- 10, Gas in cecum
- 11, Iliac crest.
- 12, Gas in colon (hepatic flexure).
- 13, Psoas margin.

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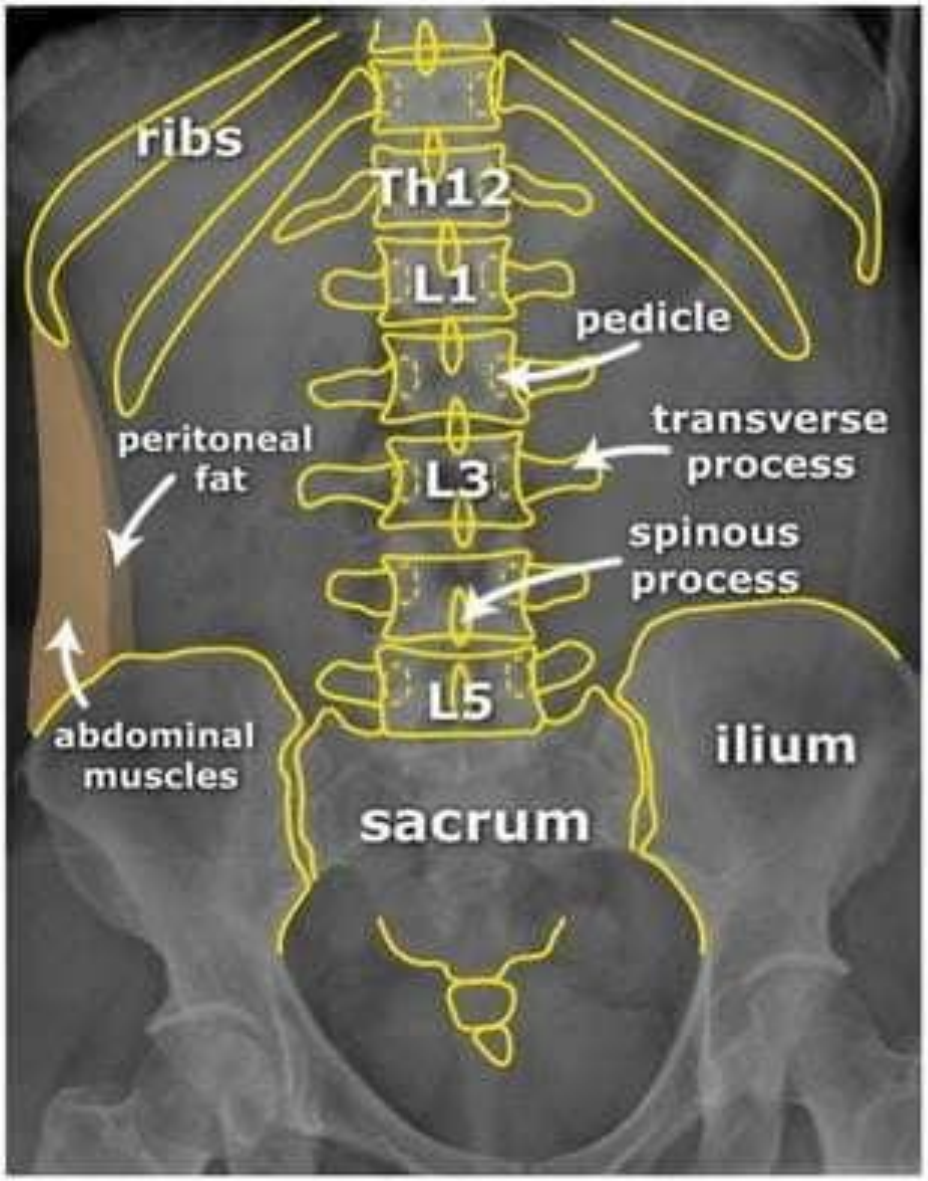
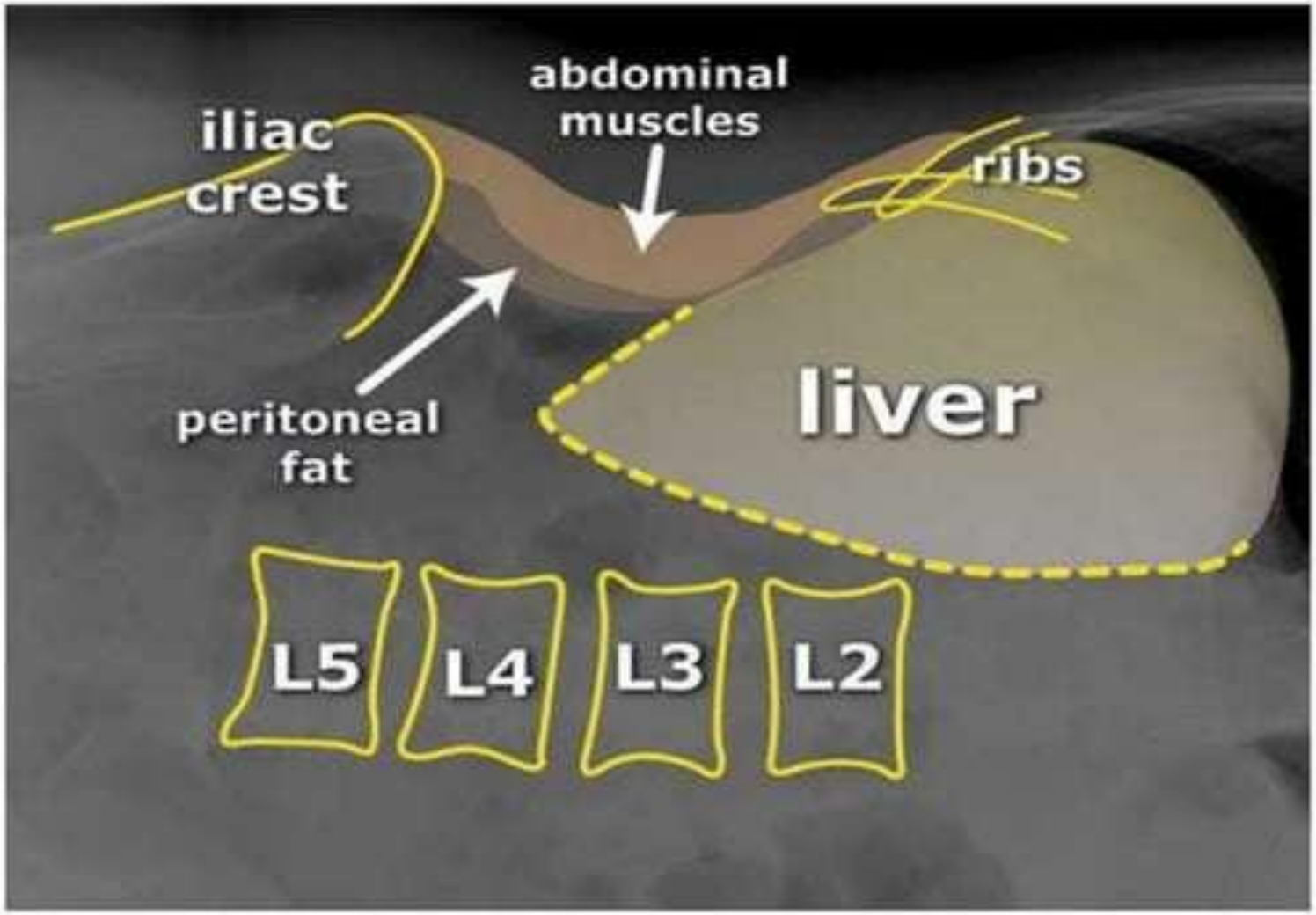
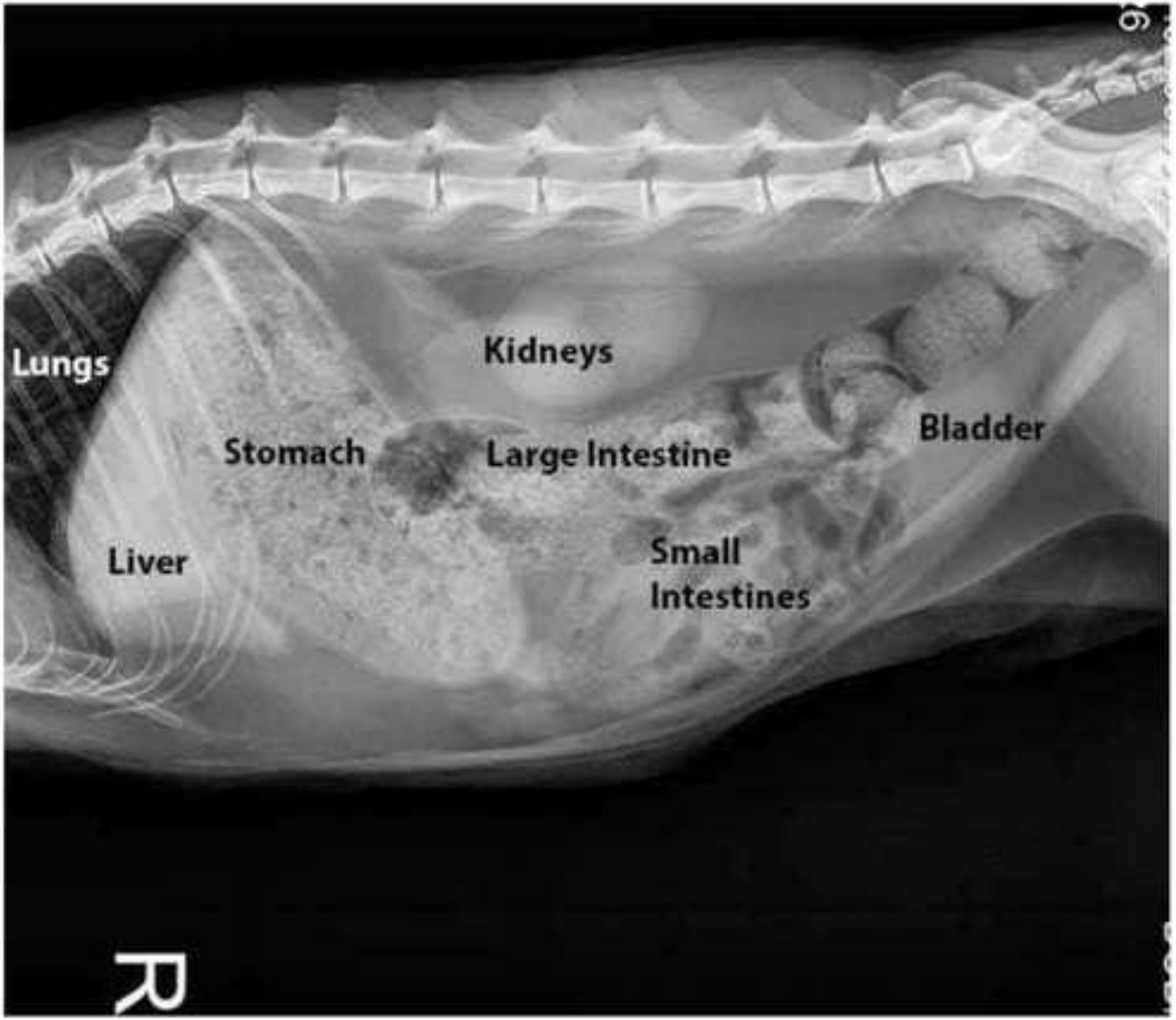
ARTEFACT

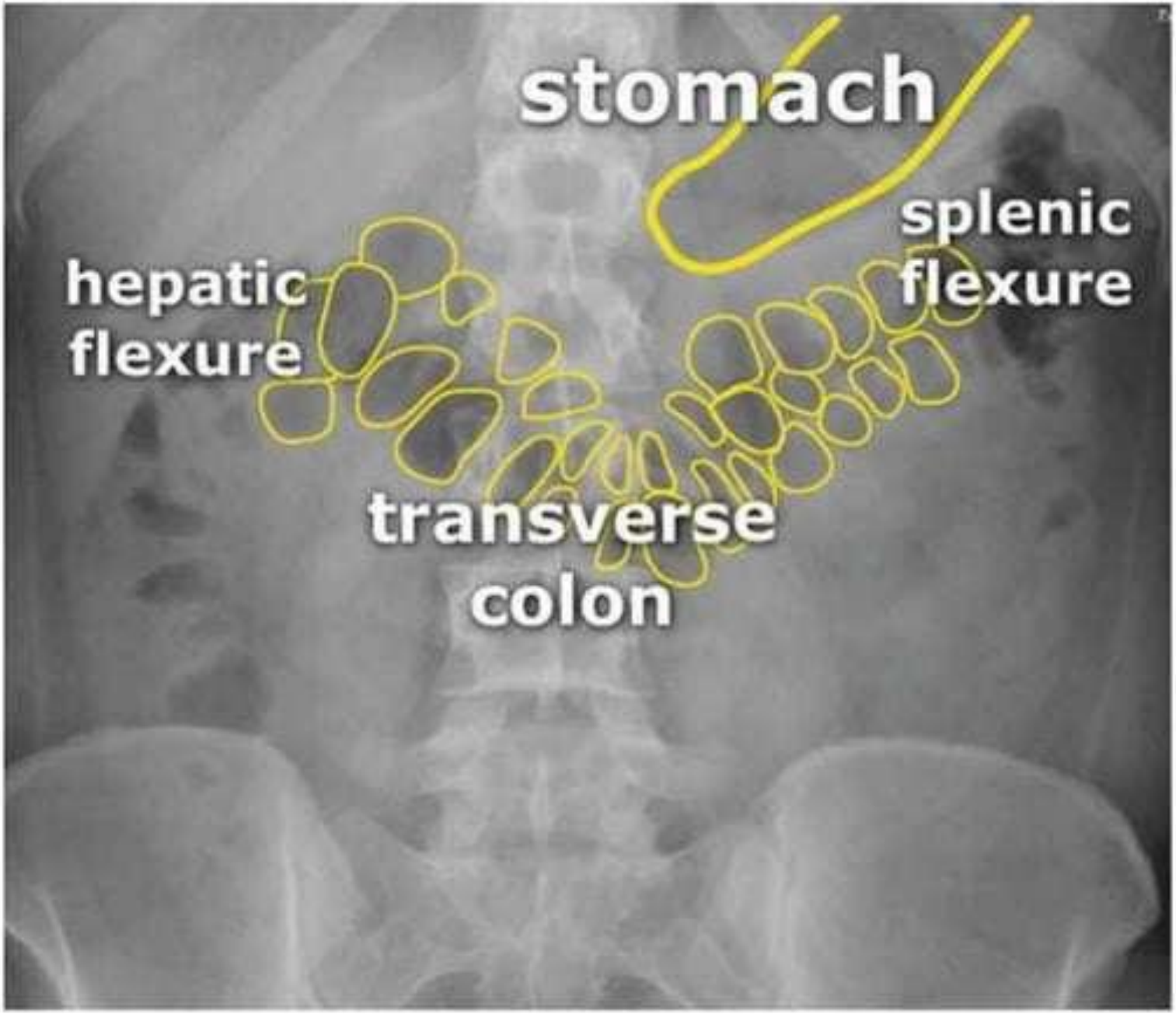
- *Normal ossal structures on a supine AP image.*

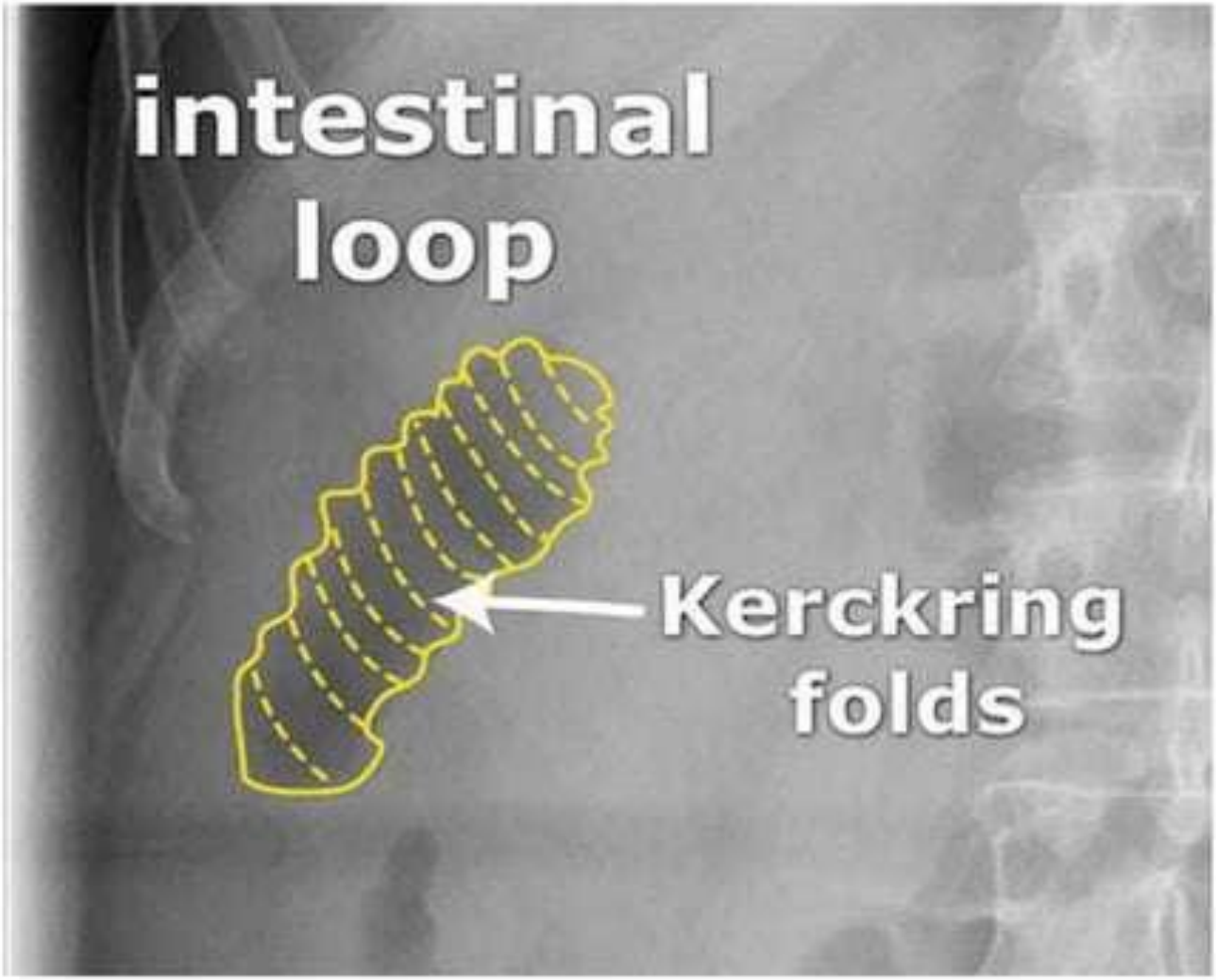


Left lateral image




Lungs
Kidneys
Stomach
Large Intestine
Bladder
Liver
Small
Intestines
R


stomach
splenic flexure
hepatic flexure
transverse colon


intestinal
loop
Kerckring
folds

Checklist:

- **The following points may be used as a guide to assess an AXR.**

1. Technique: is this a standing or supine image?
2. Are the psoas muscle contours visible? (If not, caution: pathology)
3. Try to trace the liver/kidney/spleen contours.
4. Are there calcifications or radio-opaque structures?

4. Determine the position of the stomach, small intestinal loops and colonic loops. Is the distribution of intestinal gas normal? Dilated intestinal loops?
5. Evidence of free air?
6. Examine the skeletal system. Are there fractures, cortex interruptions, ossal lesions?
7. Changes versus previous examinations?