

Gastrointestinal System

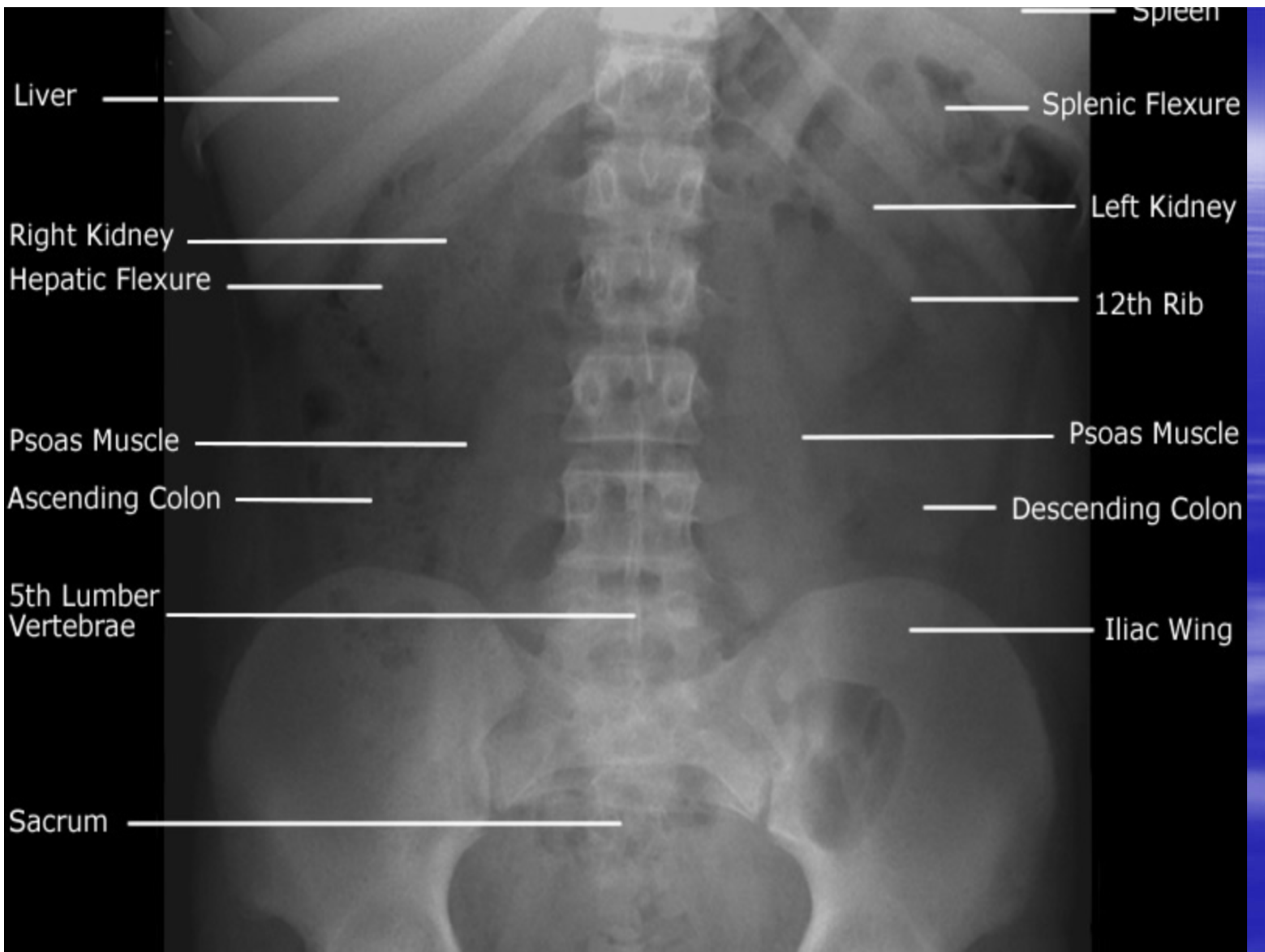
Department of Radiology & Imaging

. Projection

- ❖ (1) Supine AP film – routine
- ❖ (2) Erect AP film
 - obstruction – Air fluid level
 - perforation – GUD
- ❖ (3) Lateral decubitus film

Plain X-Ray Abdomen (Normal)





Liver

Right Kidney

Hepatic Flexure

Psoas Muscle

Ascending Colon

5th Lumbar
Vertebrae

Sacrum

Spleen

Splenic Flexure

Left Kidney

12th Rib

Psoas Muscle

Descending Colon

Iliac Wing

Approach to Film

Five basic densities are normally present on X rays.

- Gas – Black
- Fat – Dark gray
- Soft tissue / Fluid – Light gray
- Bone / Calcification – White
- Metal – Intense white

Abnormal Findings

I. Bowel gas pattern

Gas – stomach, Small and Large bowels – some gas
(+) – NL

Alteration in bowel gas pattern

- SB Obstruction
- LB obstruction
- Paralytic ileus
- Sigmoid volvulus
- Caecal volvulus
- Toxic megacolon

Distinction between SB & LB

Obst:

	SB	LB
1.valvulae conniventes	(+) in Jejunum	(-)
2.No. of loops	many	few
3.Distribution of loops	central	peripheral
4.Haustra	(-)	(+)
5.Diameter	3 – 5cm	5cm(+)
6.Radius of curvature	small	large
7.Solid faeces	(-)	(+)



Small bowel obstruction

Dilated Small Bowel

- Proximal jejunum - $>3.5\text{cm}$
- Mid-small bowel - $>3.0\text{cm}$
- Ileum - $>2.5\text{cm}$



Large bowel obstruction

Causes of Large Bowel Obstruction

- **Luminal** : faecal impaction

- **Bowel wall**

 - neoplastic: carcinoma

 - inflammatory: Crohn's d/s, Ulcerative colitis,
diverticular d/s

- **Extrinsic**

 - malignant mass, bladder or pelvic malignancy

 - hernia

II. Calcification

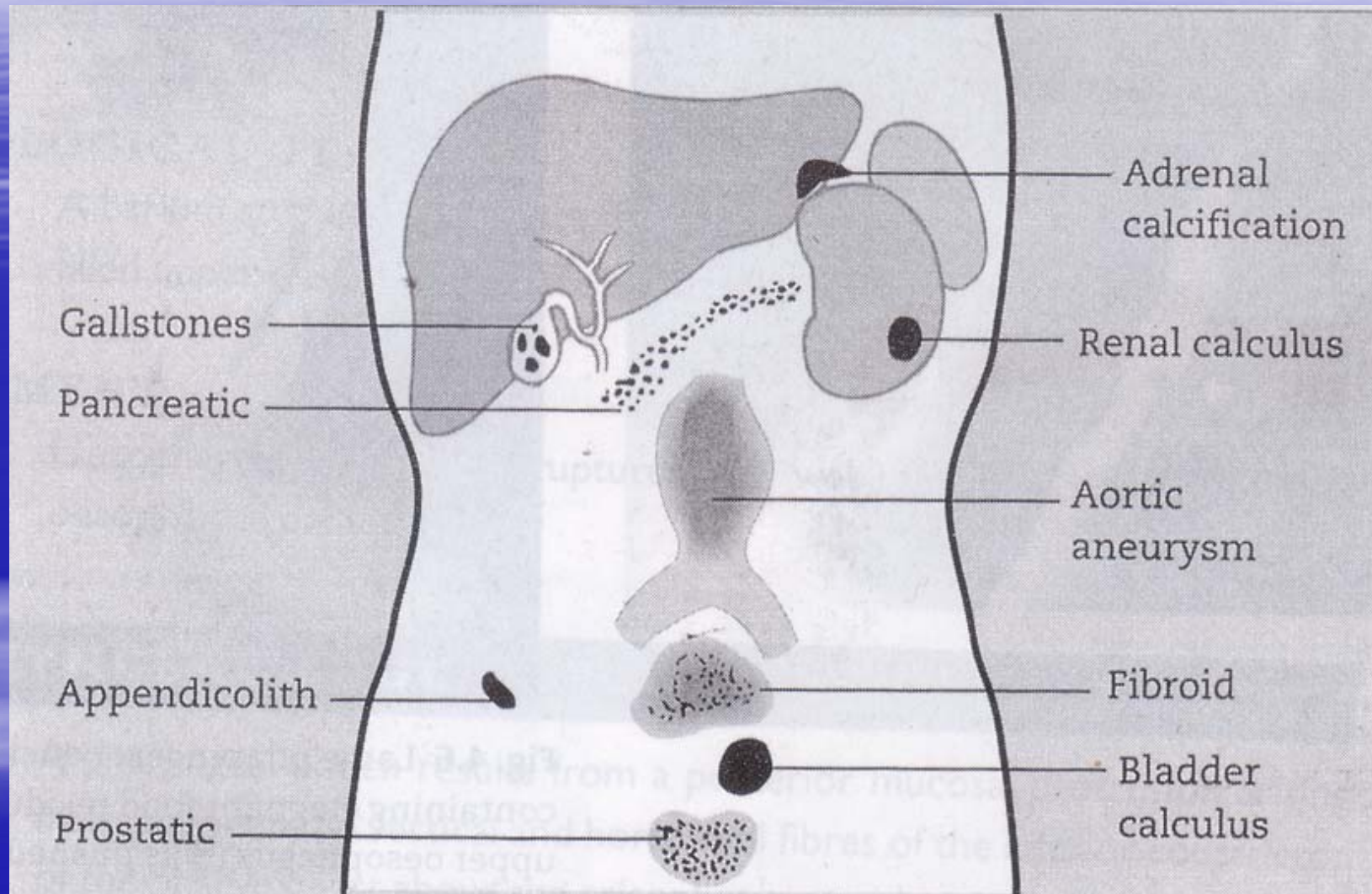
No real clinical significance

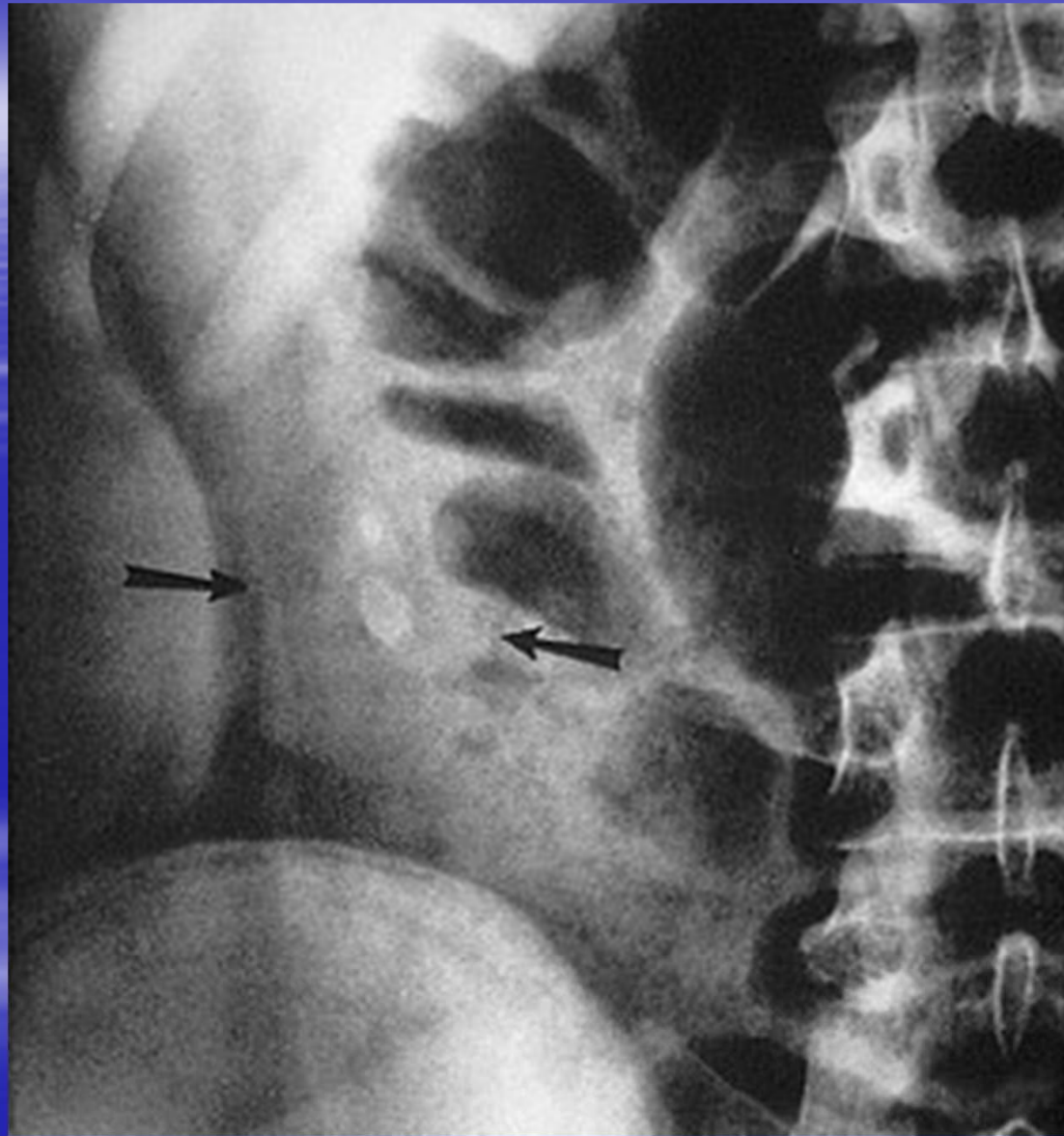
- ✓ Costal Cartilage Calcification
- ✓ Pelvic vein phleboliths
- ✓ Mesenteric lymph node Calcification
- ✓ Vascular Calcification

Pathological Calcification

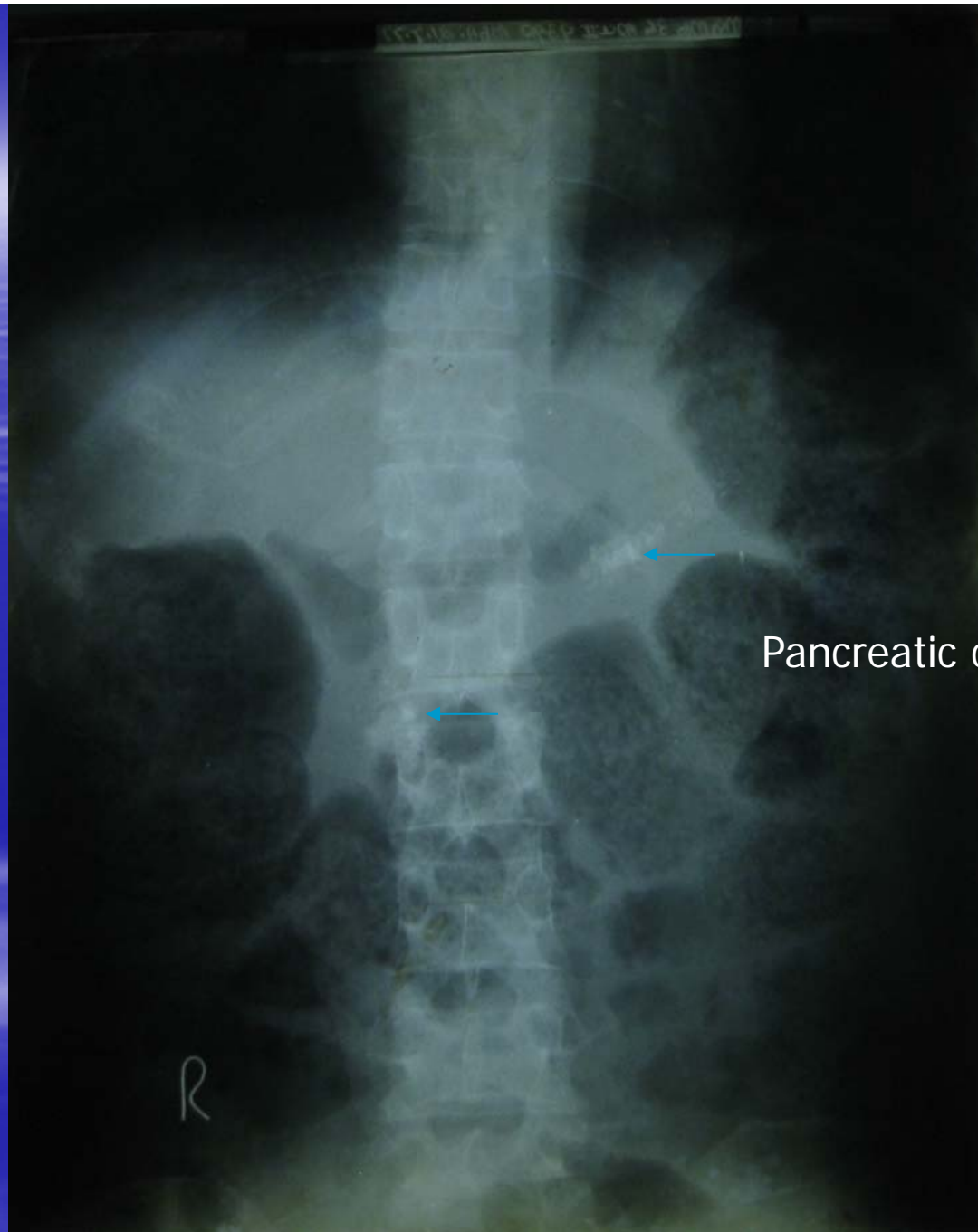
- ✓ Gall Stone
- ✓ Renal Stone
- ✓ Bladder Stone
- ✓ Pancreatic Calcification
- ✓ Adrenal Calcification
- ✓ Prostatic Calcification
- ✓ Appendicolith
- ✓ Fibroid

Pathological calcification in the abdomen





Appendicitis Fecolith



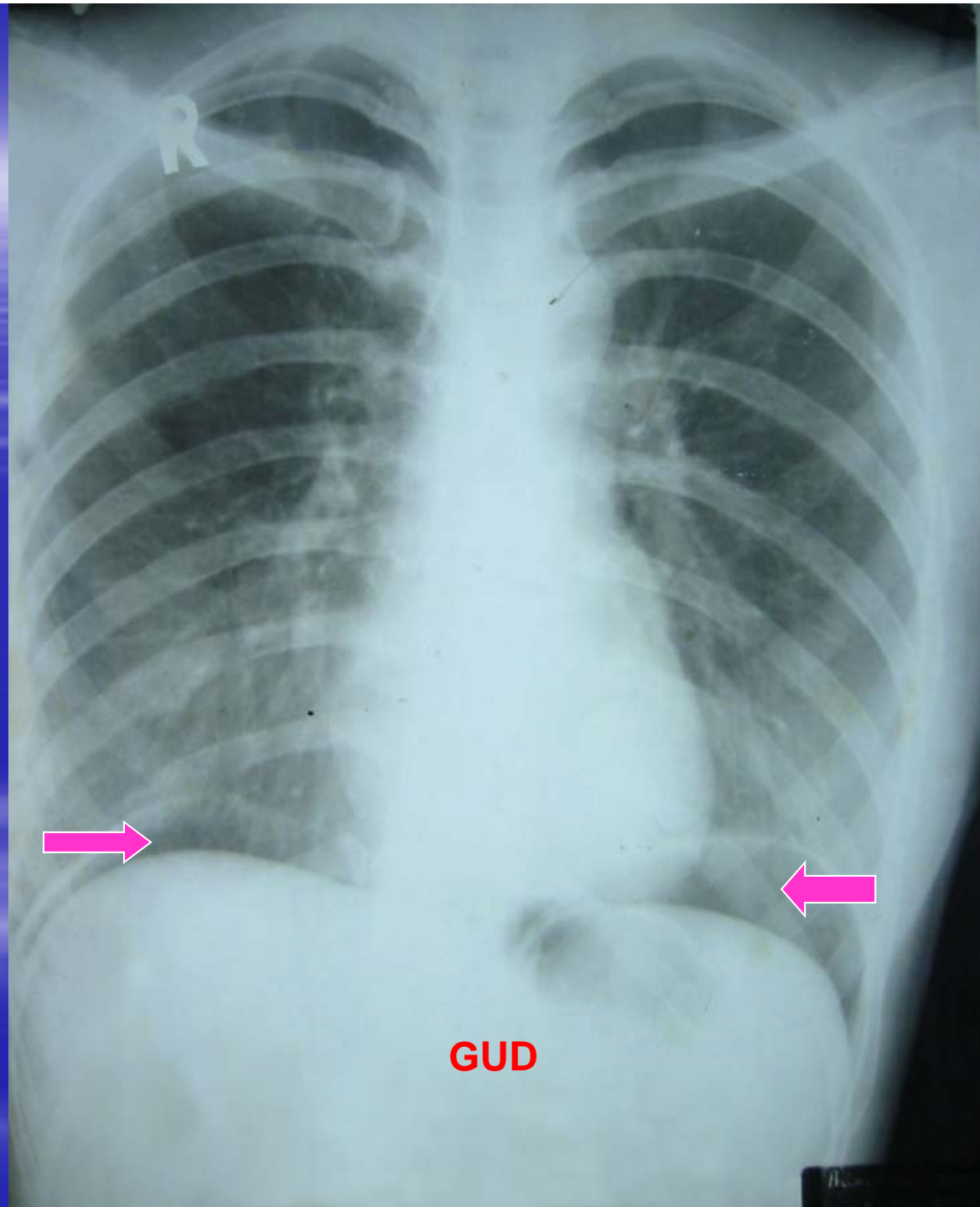
Pancreatic calcification



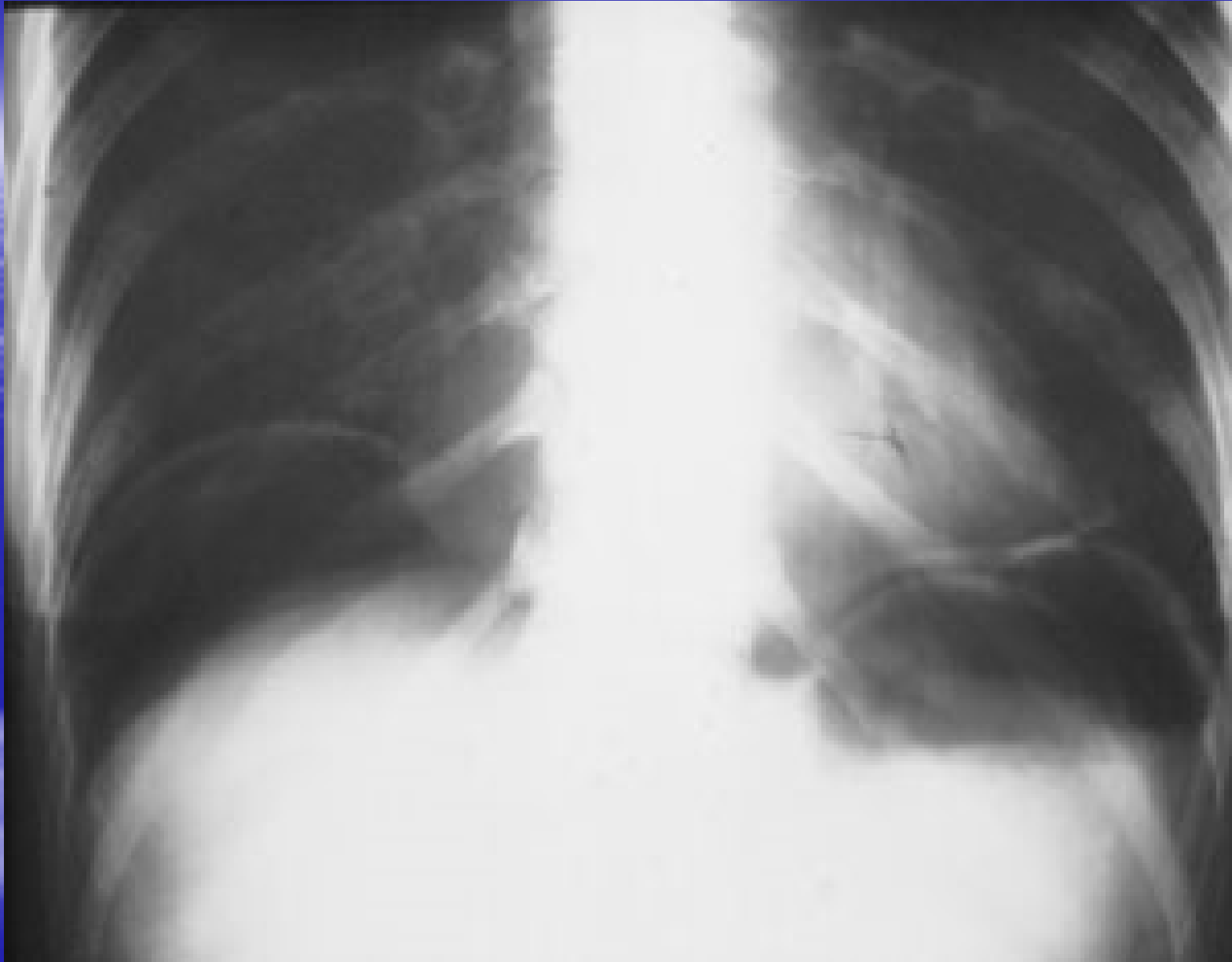
Pancreatic calcification



Leiomyoma or Uterine Fibroid



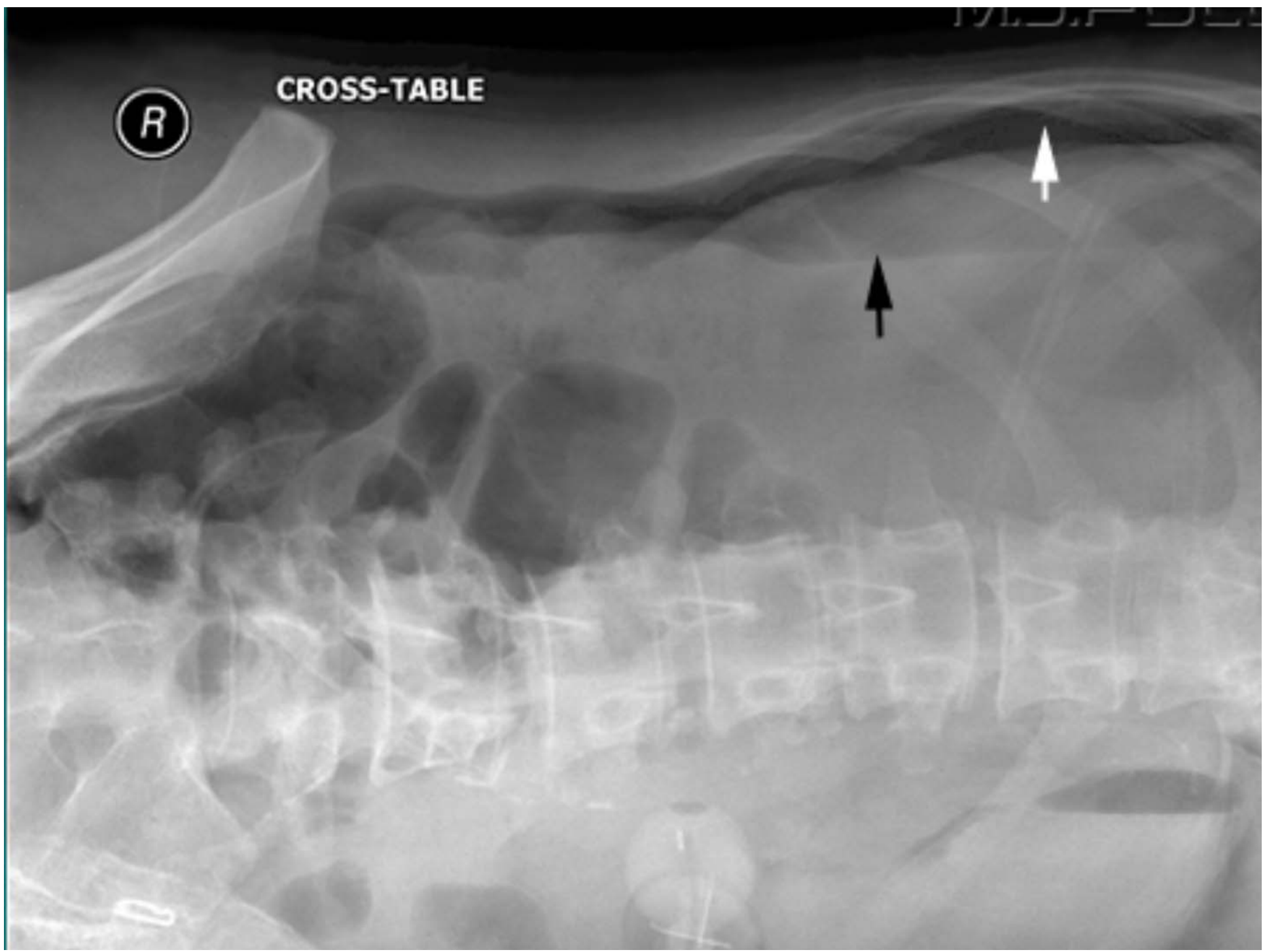
GUD



GUD

(R)

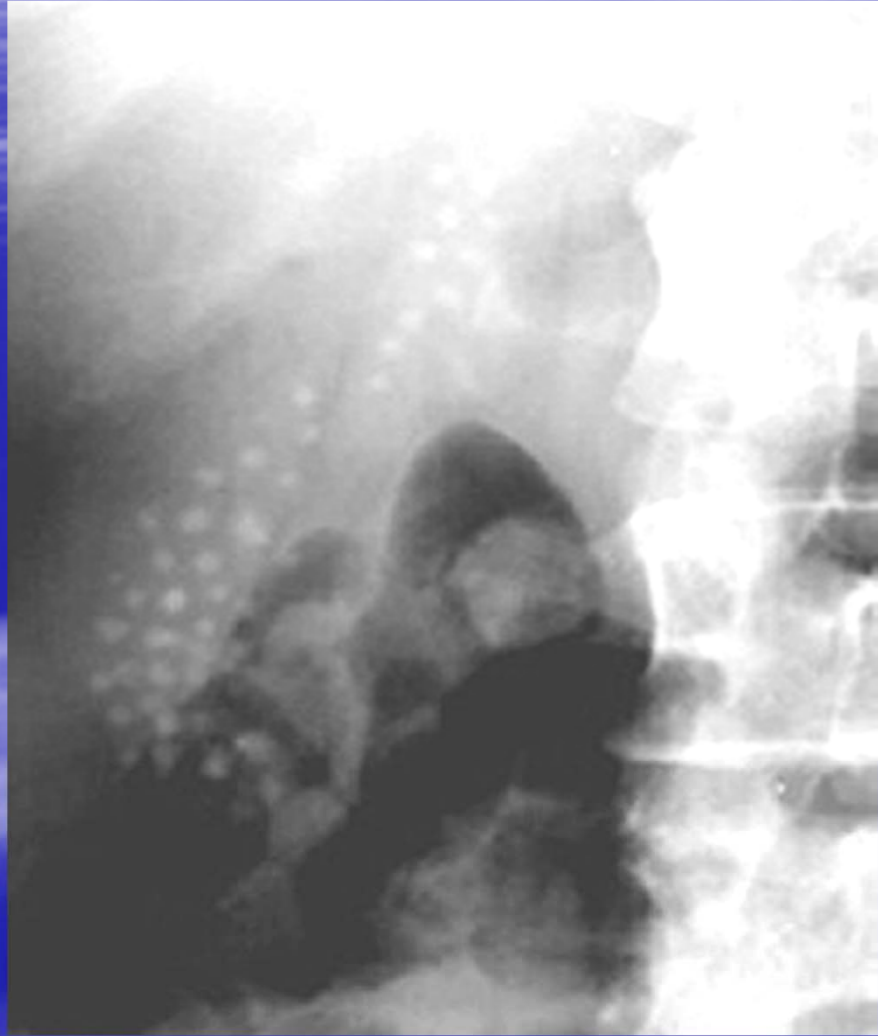
CROSS-TABLE



GUD

Pneumoperitonium / Gas Under Diaphragm / Free Abdominal Air

- Seen in Erect Film
- 10 ml of air
- 10 minutes wait
- R/F – crescentic area of lucency between right diaphragm and liver or left diaphragm and spleen
- Lt lat decubitus film – free air bet Rt lat margin of liver & peritoneal surface





Subphrenic abscess