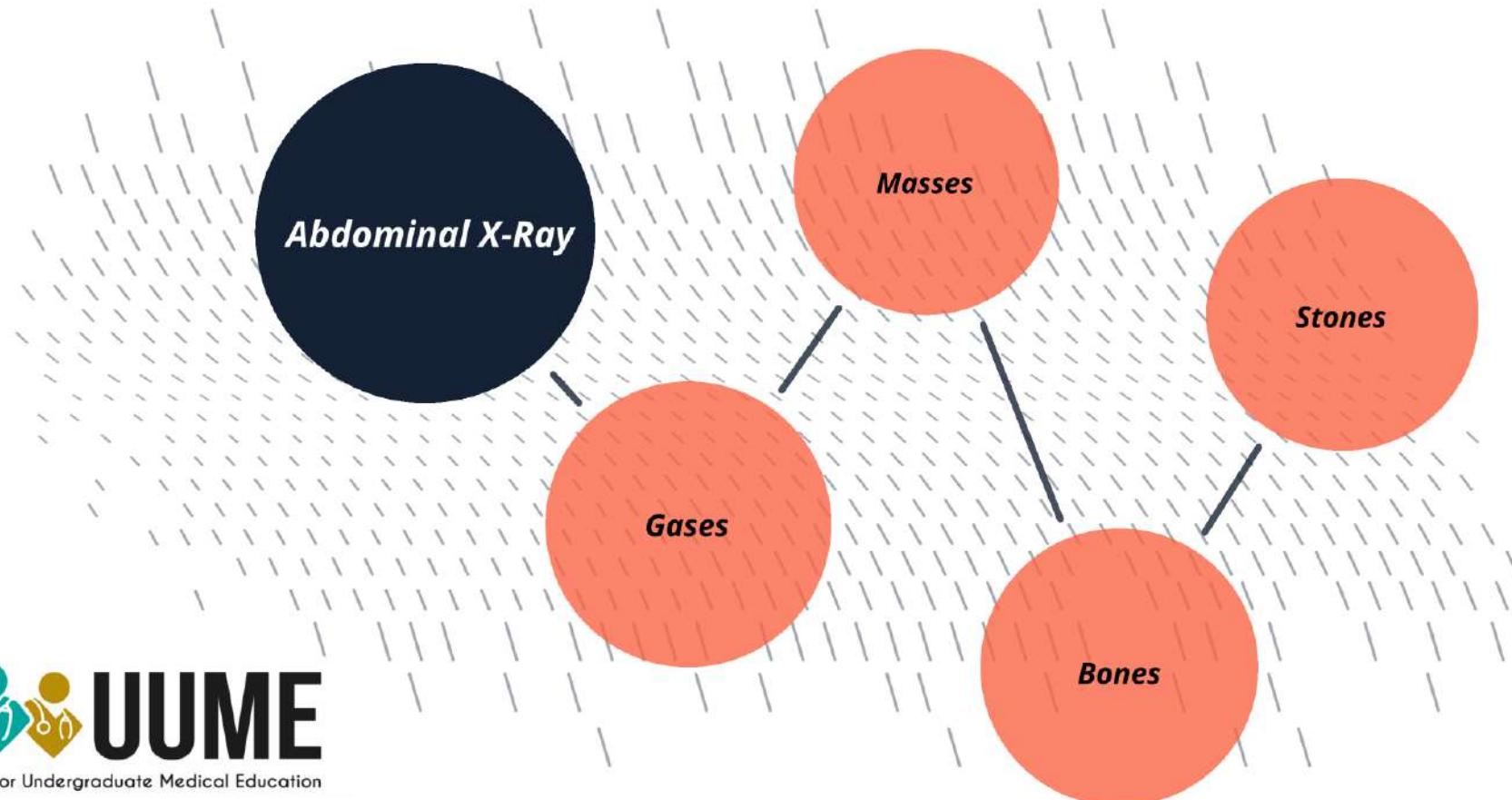


Interpreting abdominal X-Rays



Unit for Undergraduate Medical Education

Dr Carl Pieterse MBChB (Pret) DA (SA)

Patient and X-Ray Details

- 1) Identification (Name, DOB, Hospital number)
- 2) Date and location of X-Ray
- 3) Orientation (L vs. R)
- 4) Position of patient
- 5) Projection of X-Ray
- 6) Penetration of X-Ray

Patient

X-Ray

Anatomy

Ms. Abigail Venter
D.O.B: 17/01/1974
Hospital #: 77893

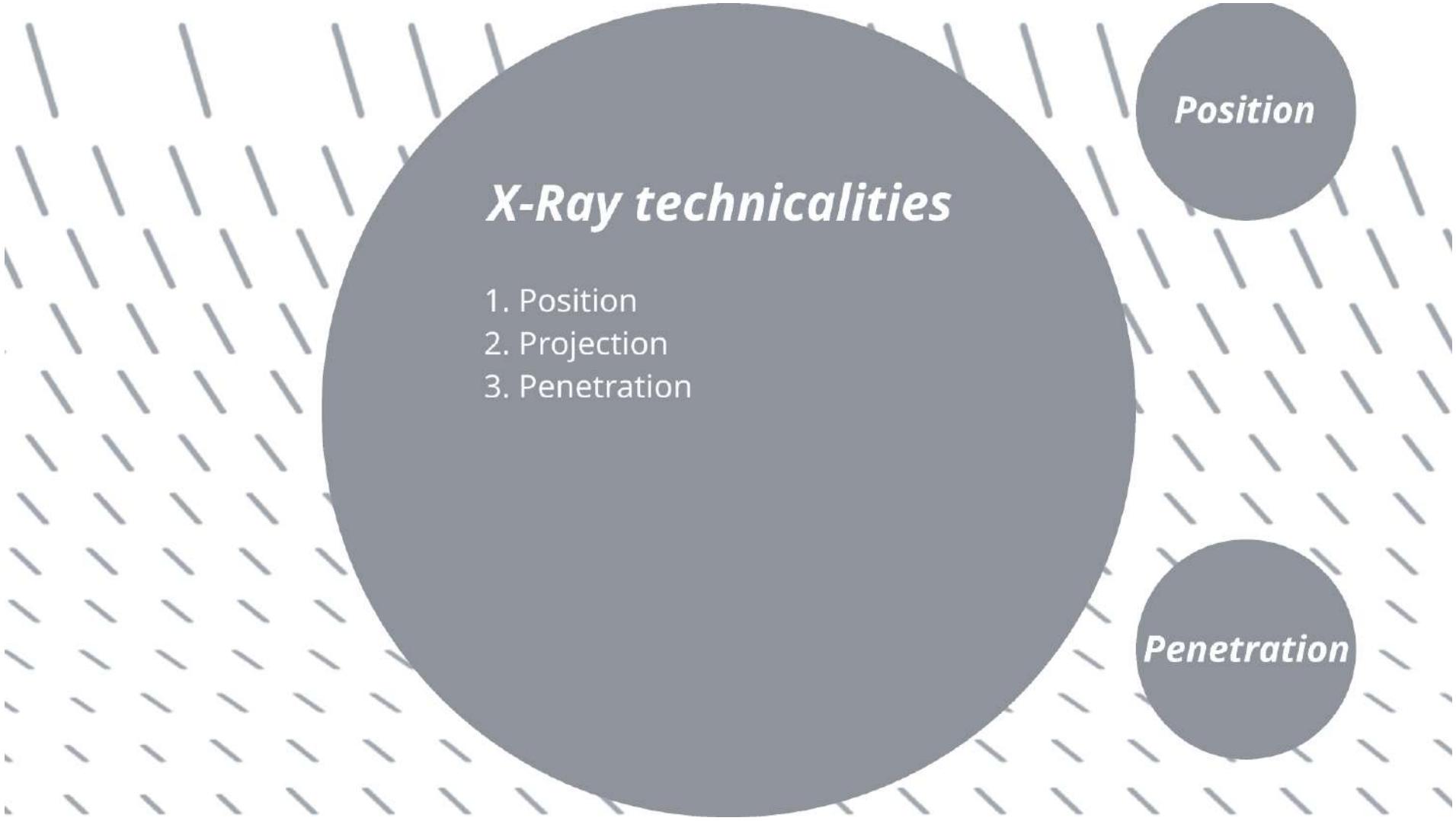
Supine



23/11/2019

Lusikisiki Hospital

L

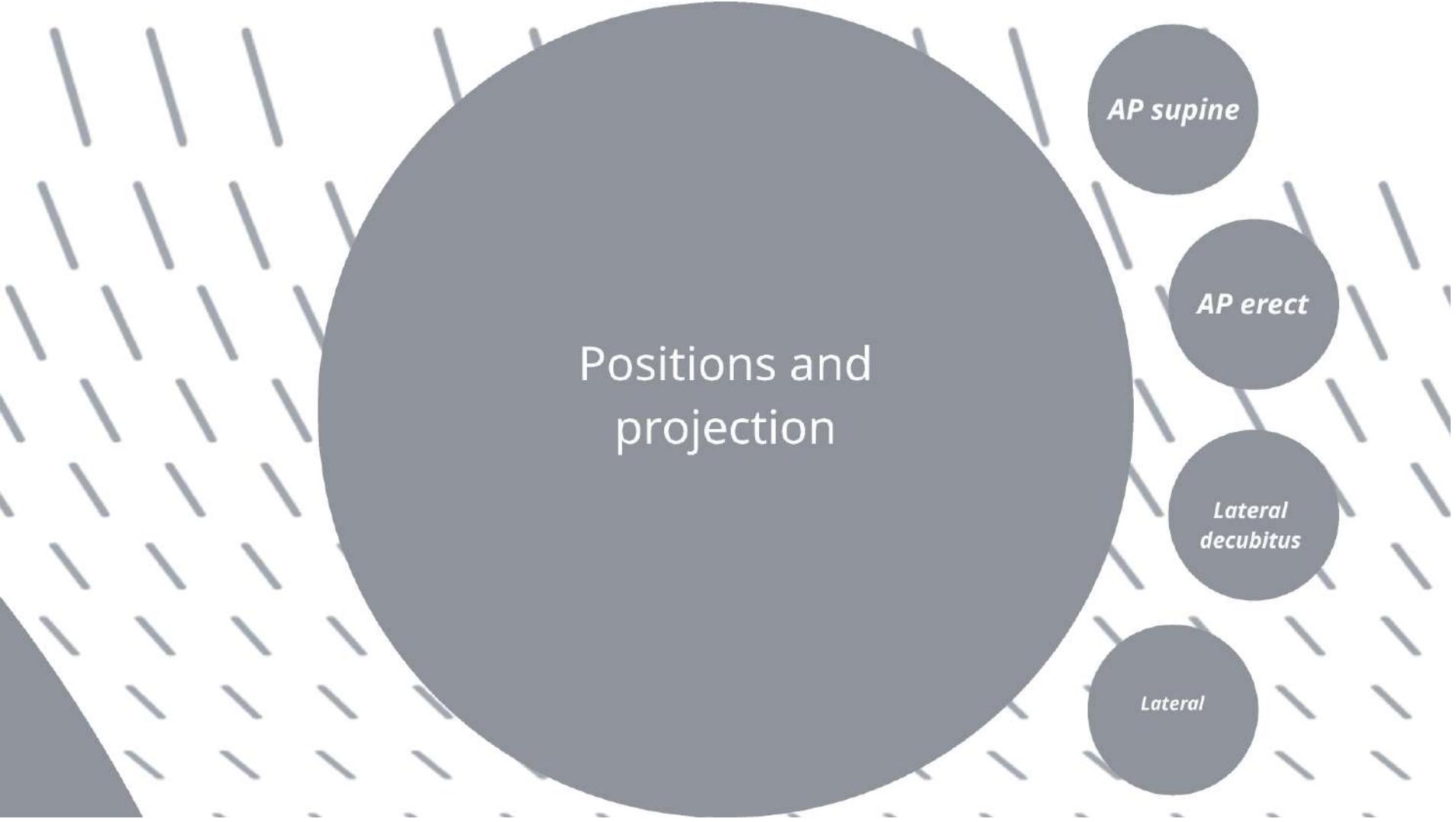


X-Ray technicalities

1. Position
2. Projection
3. Penetration

Position

Penetration



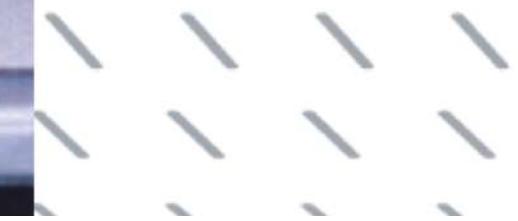
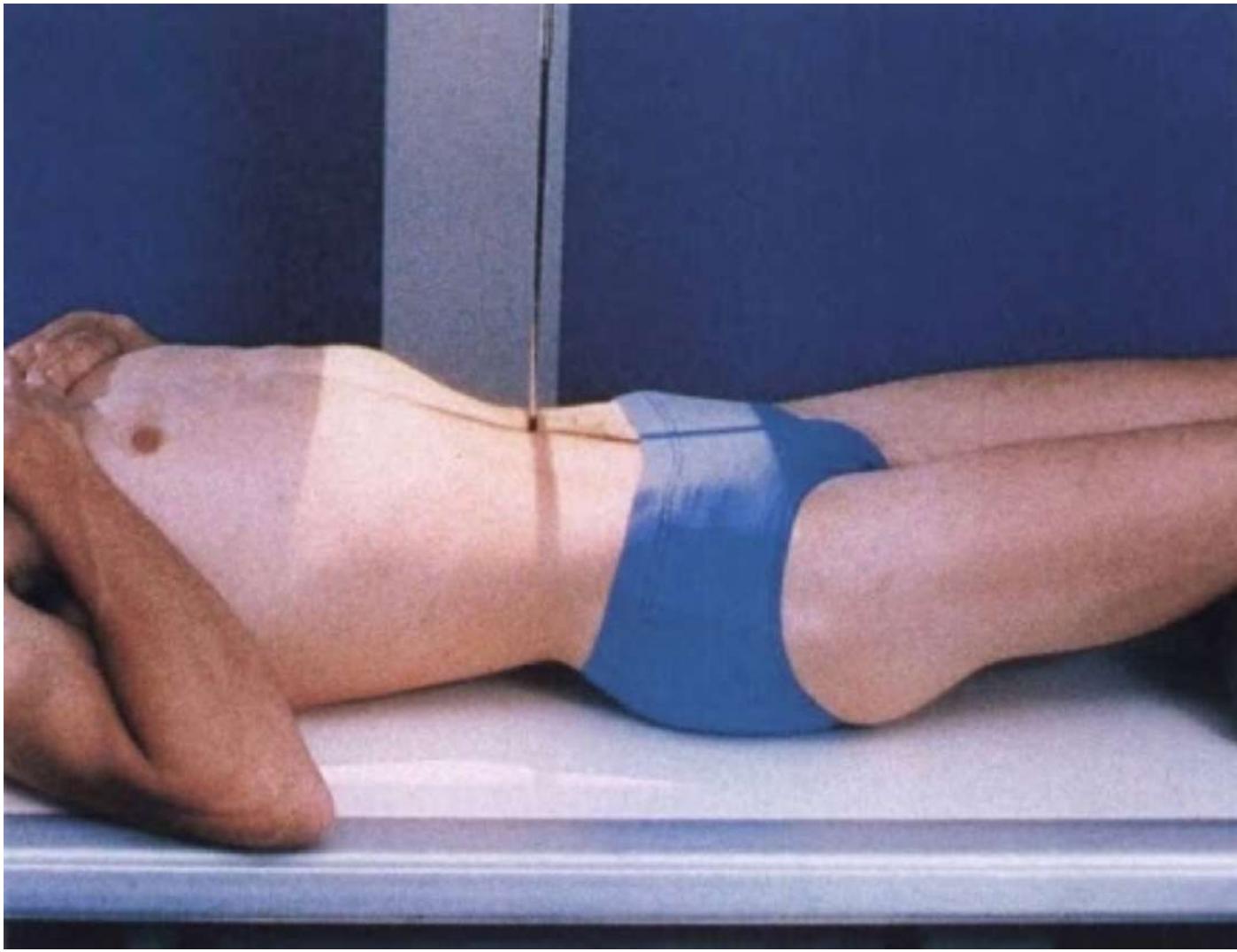
Positions and projection

AP supine

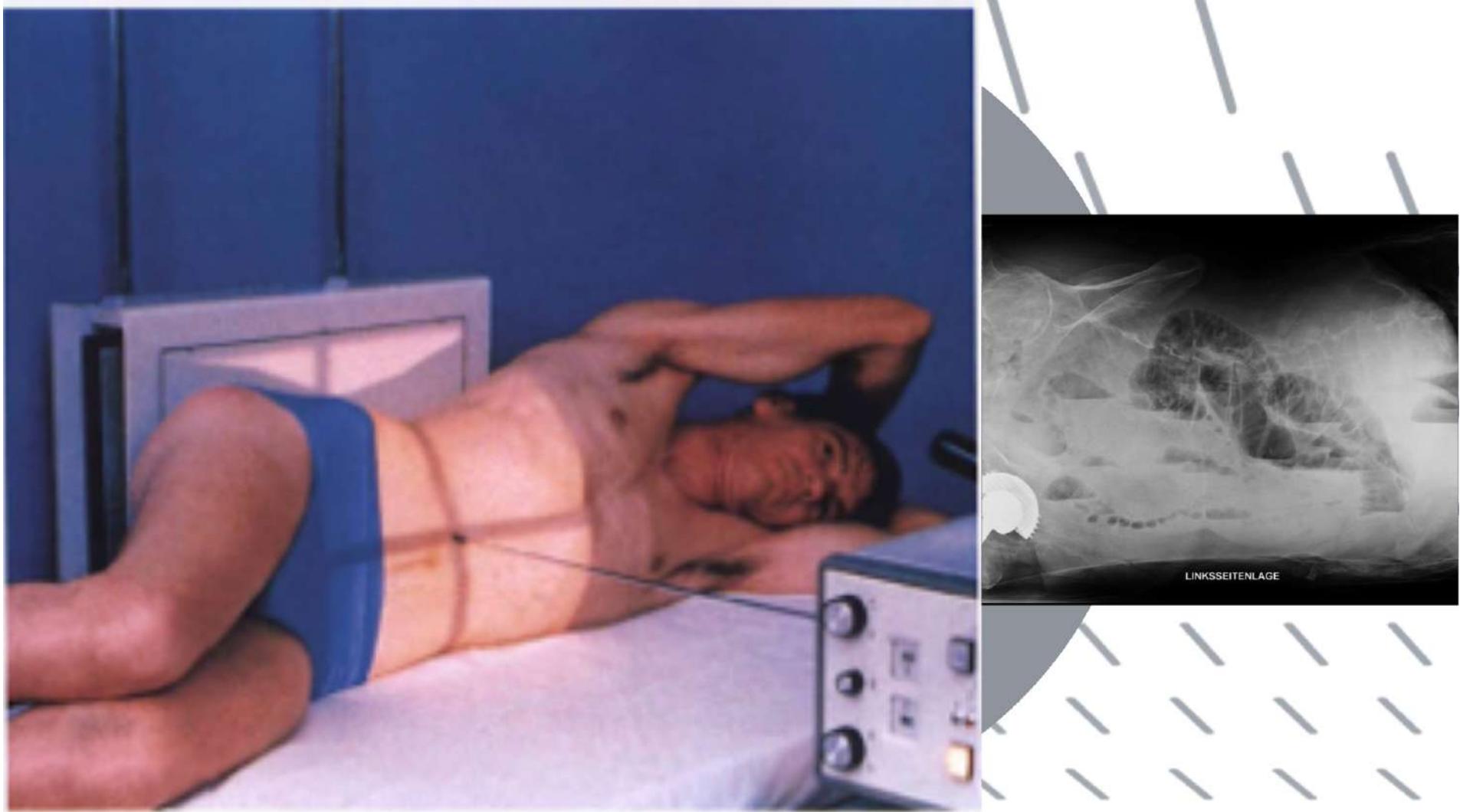
AP erect

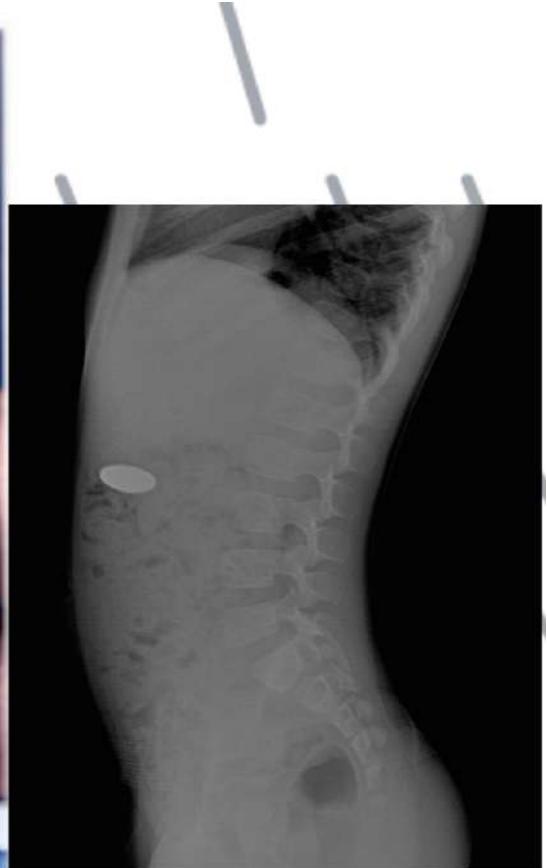
*Lateral
decubitus*

Lateral





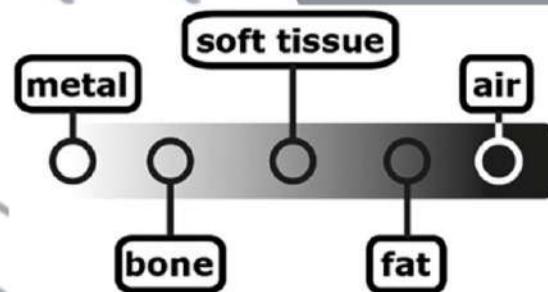


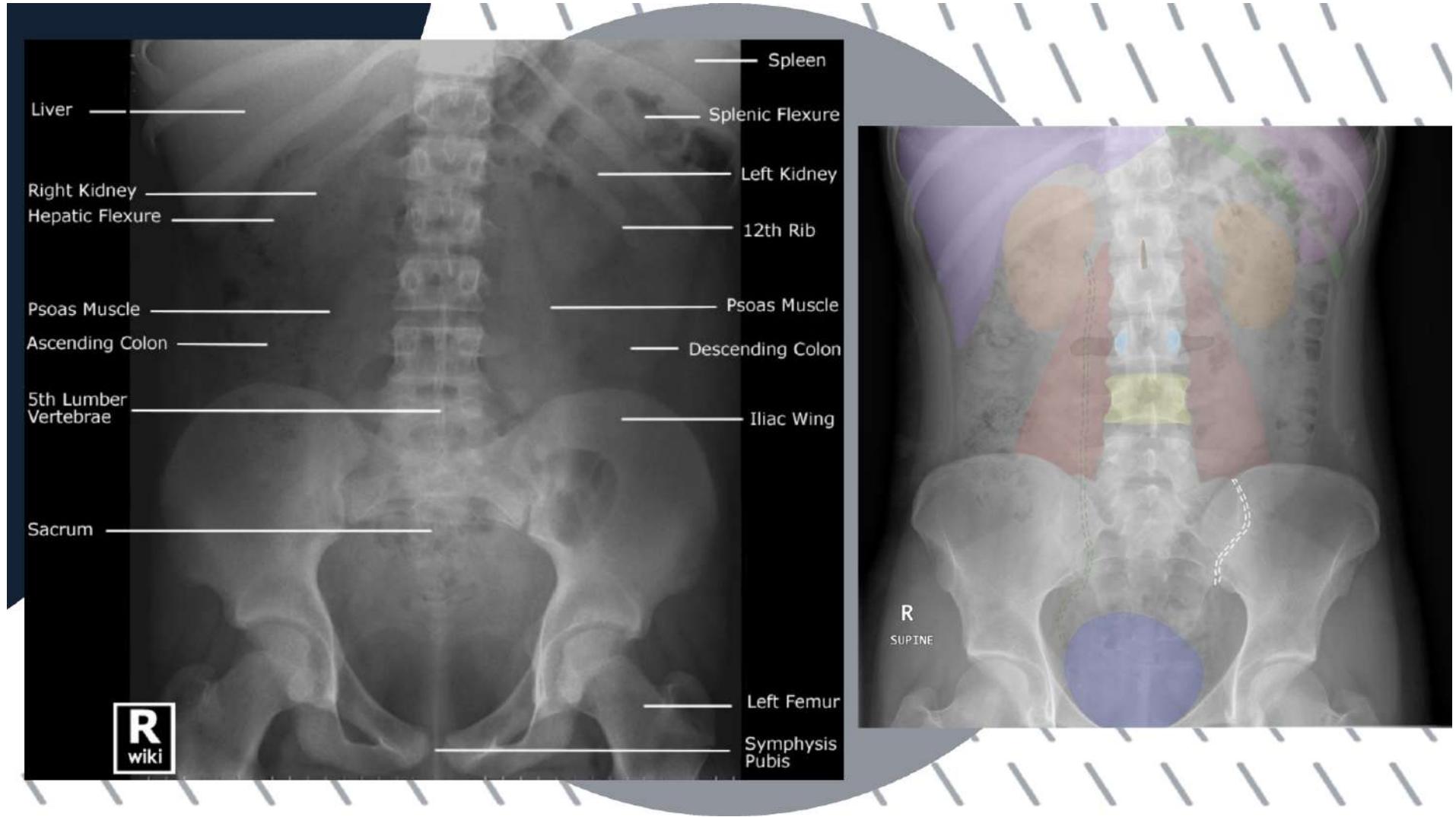


Underpenetrated

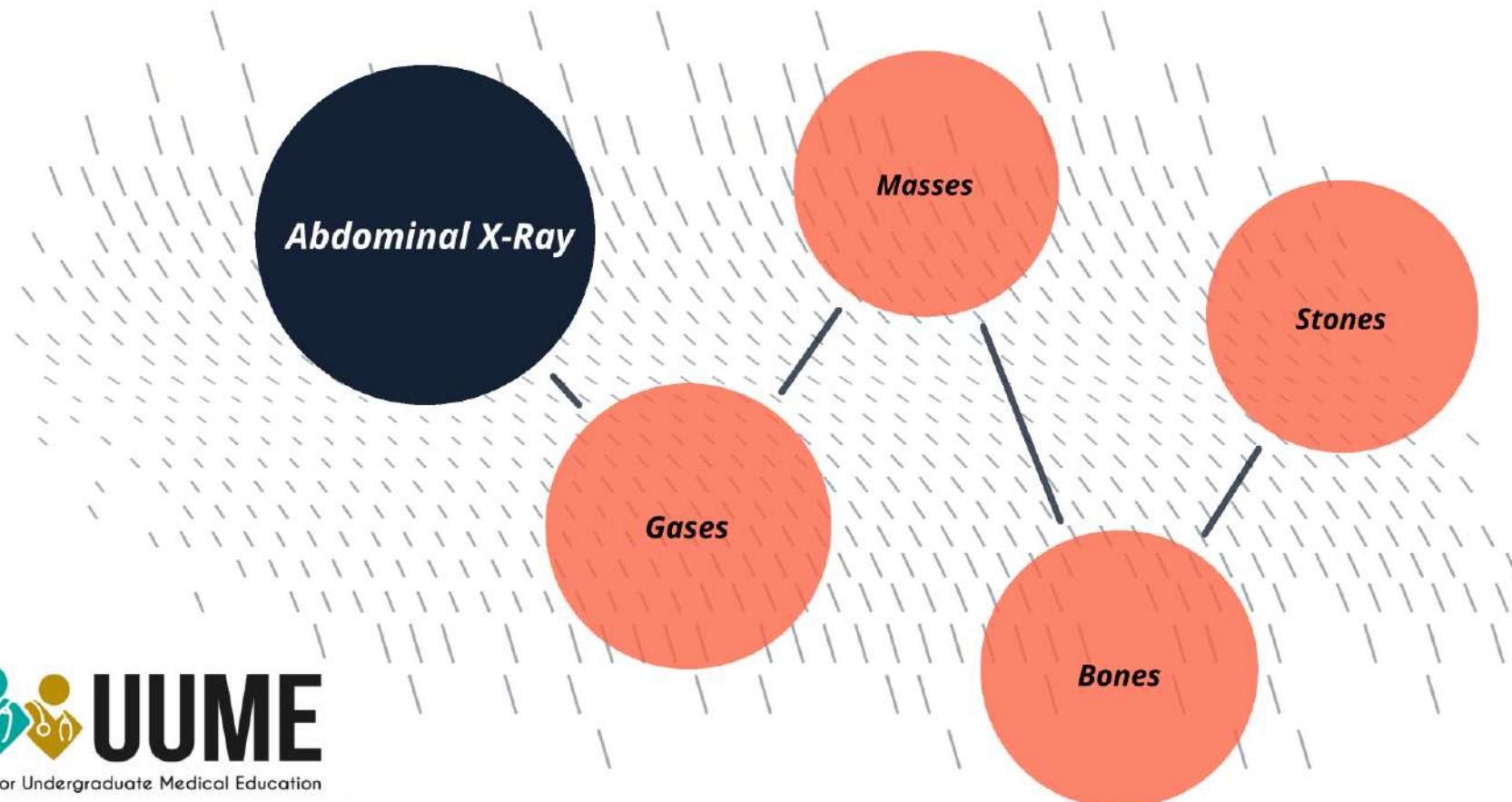


Over penetrated





Interpreting abdominal X-Rays



Unit for Undergraduate Medical Education

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Intestinal Gas Patterns

- 1) Intraluminal (Stomach, SB, LB)
- 2) Extraluminal (intraperitoneal, retroperitoneal, biliary)

Intraluminal

Extraluminal

Intraluminal Gas Patterns

- Stomach
- Small bowel
- Large bowel

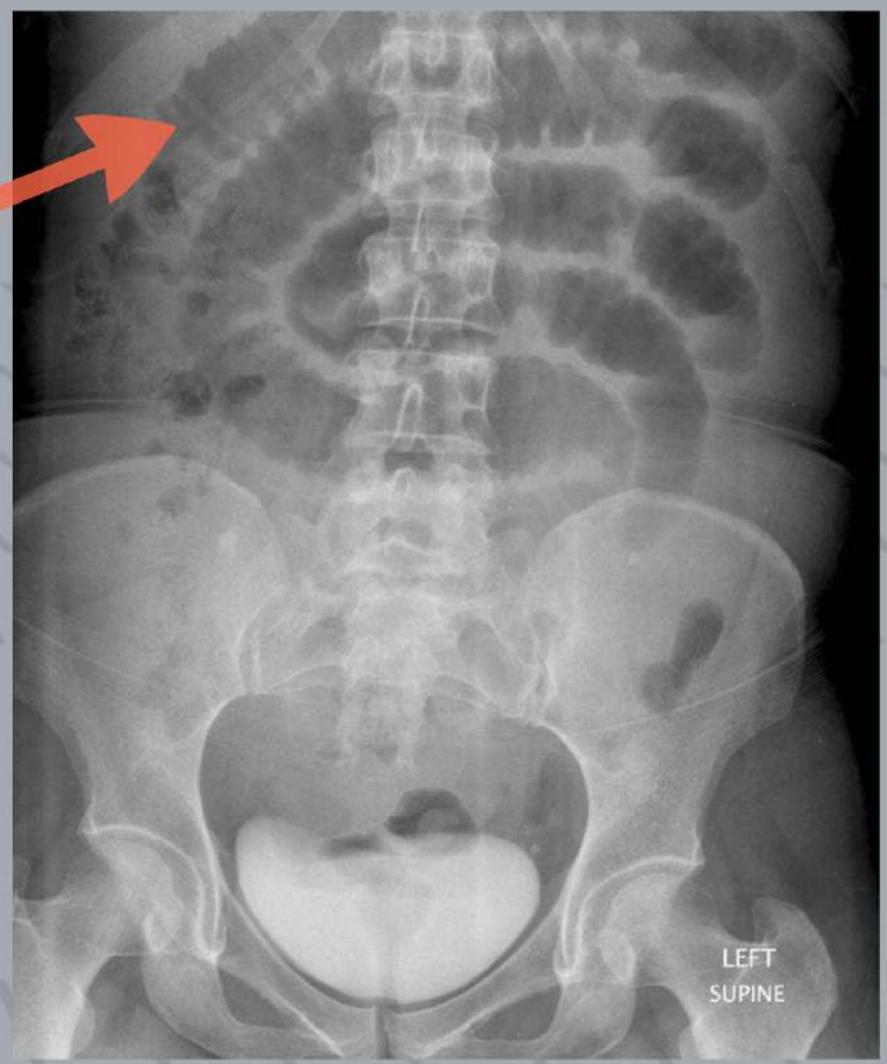
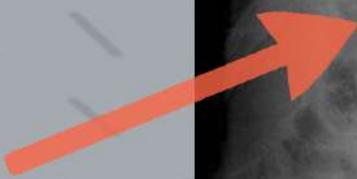
Stomach

Left upper quadrant



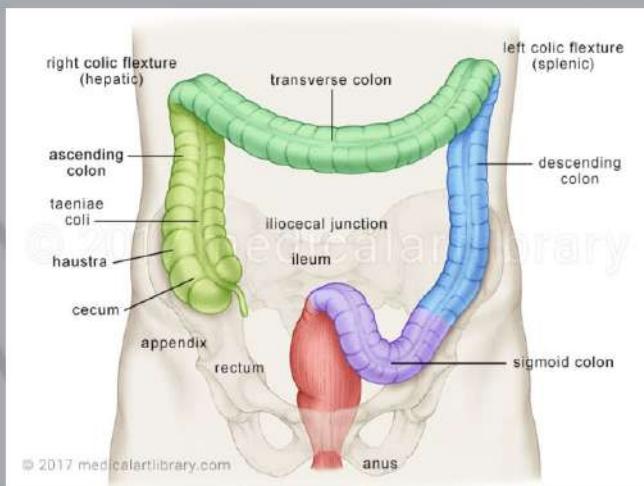
Small bowel

- Valvulae conniventes
- Central
- Small diameter
- 2.5-3.5cm



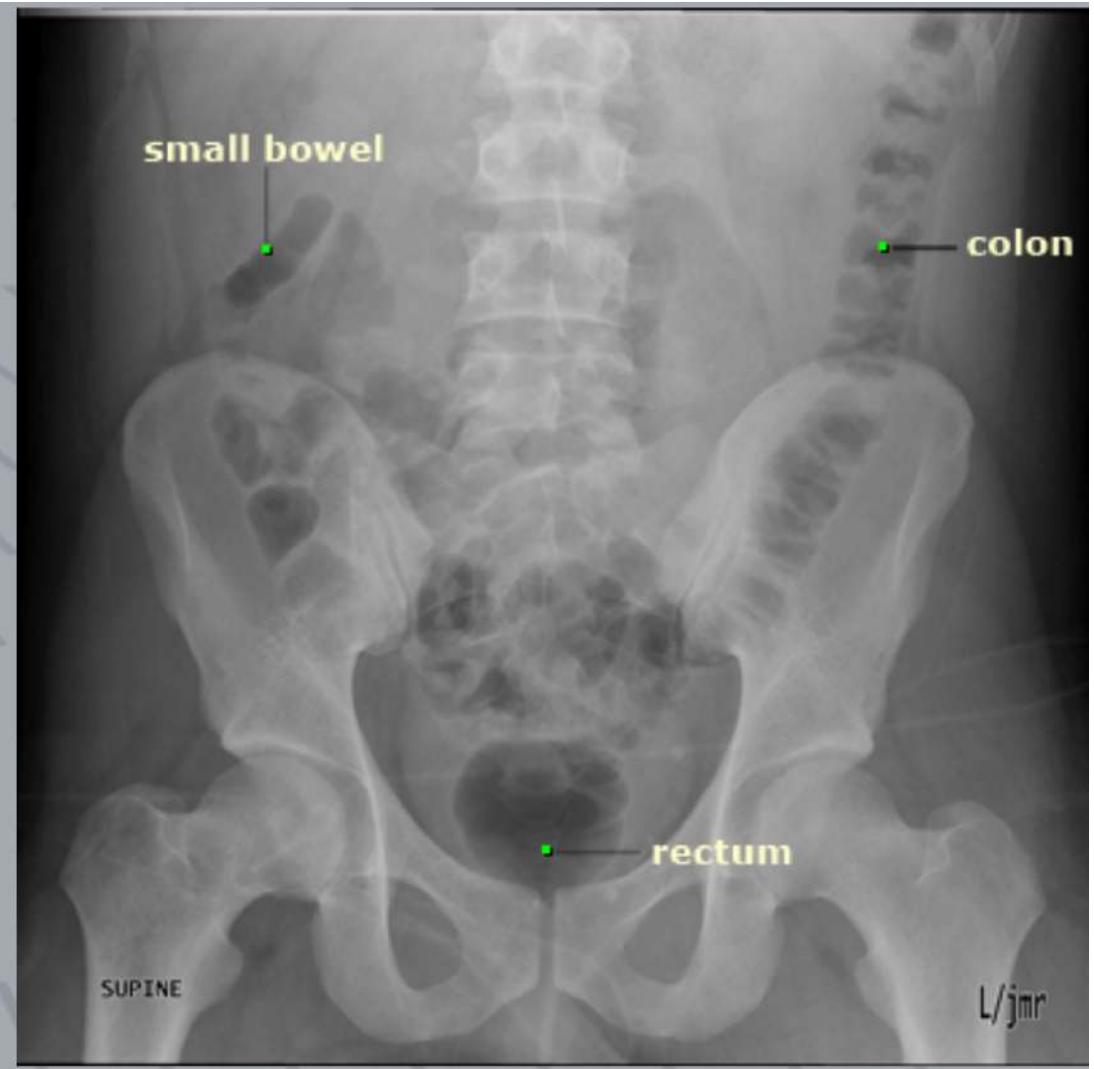
Large bowel

- Peripherally located
- Haustra
- <6cm
- Caecum and rectum <9cm



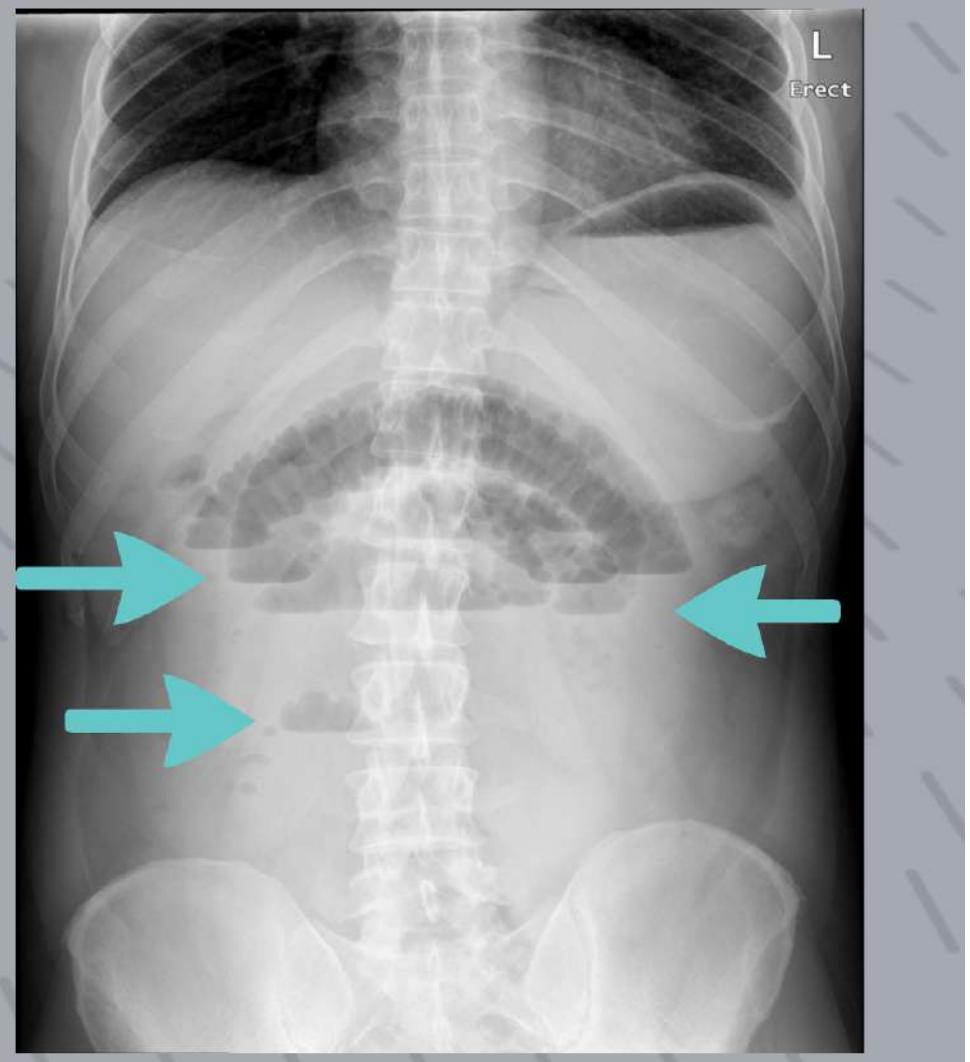
Used with permission from Michelle McNamara, MD

Rectum



Dilated loops of small bowel +/- Air fluid levels

- Ileus
- Inflammation
- Obstruction
- +/- Air fluid levels

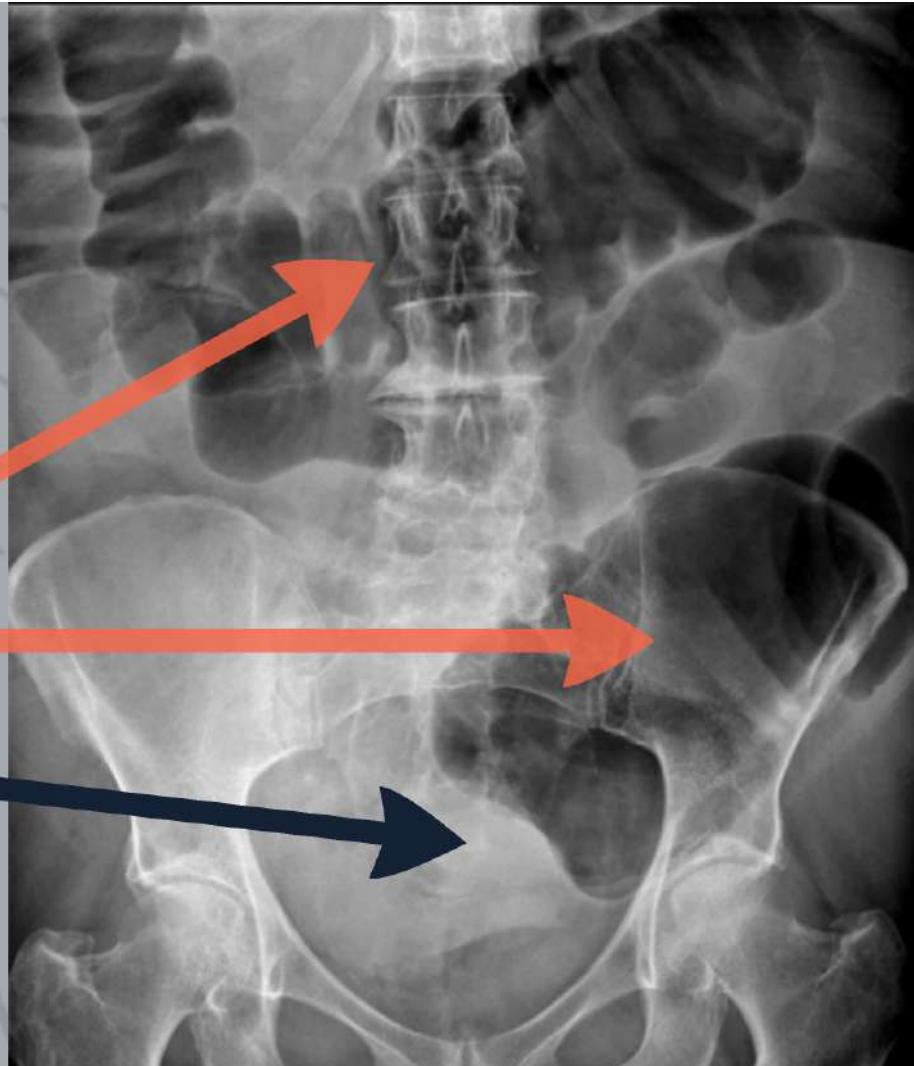


Postoperative ileus

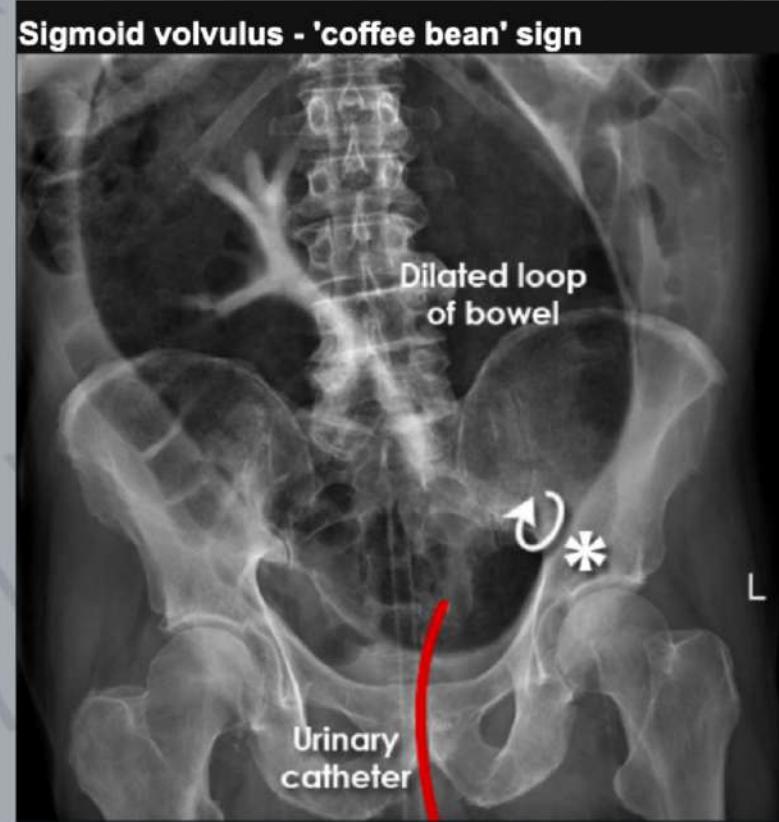


Large bowel obstruction

- Transverse colon
- Sigmoid colon
- Obstruction



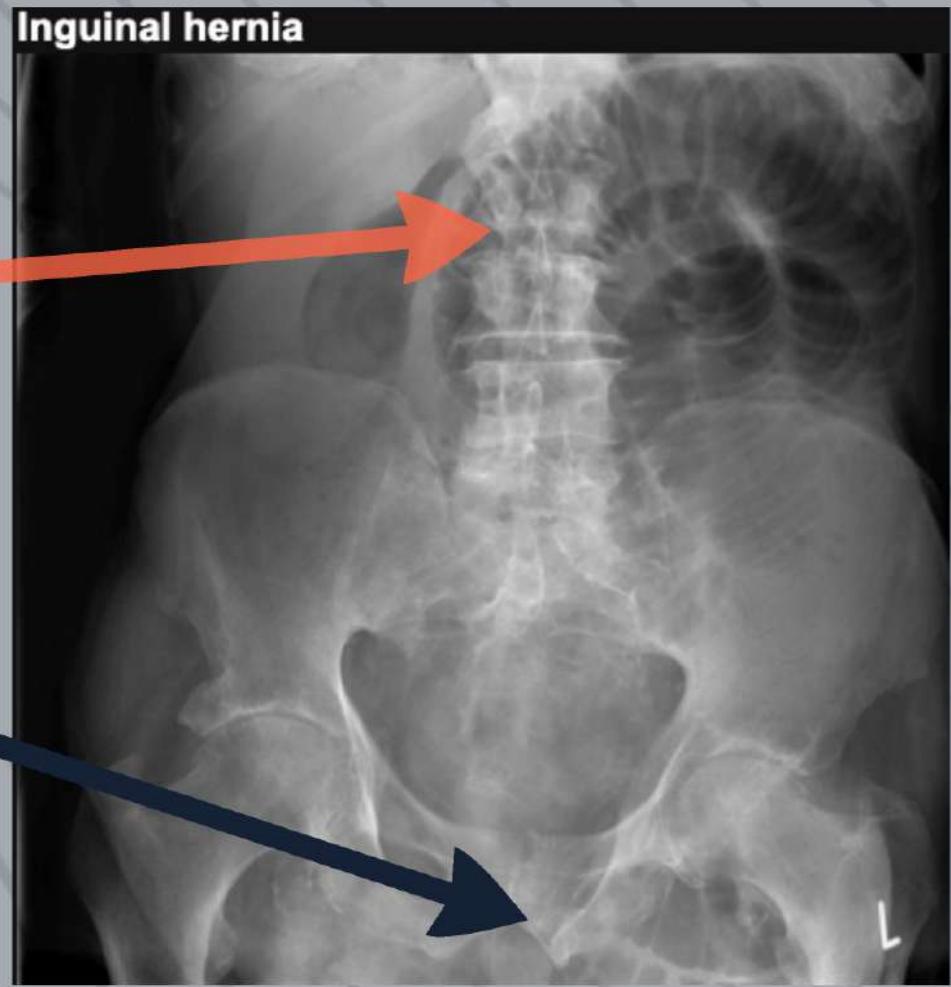
Sigmoid volvulus

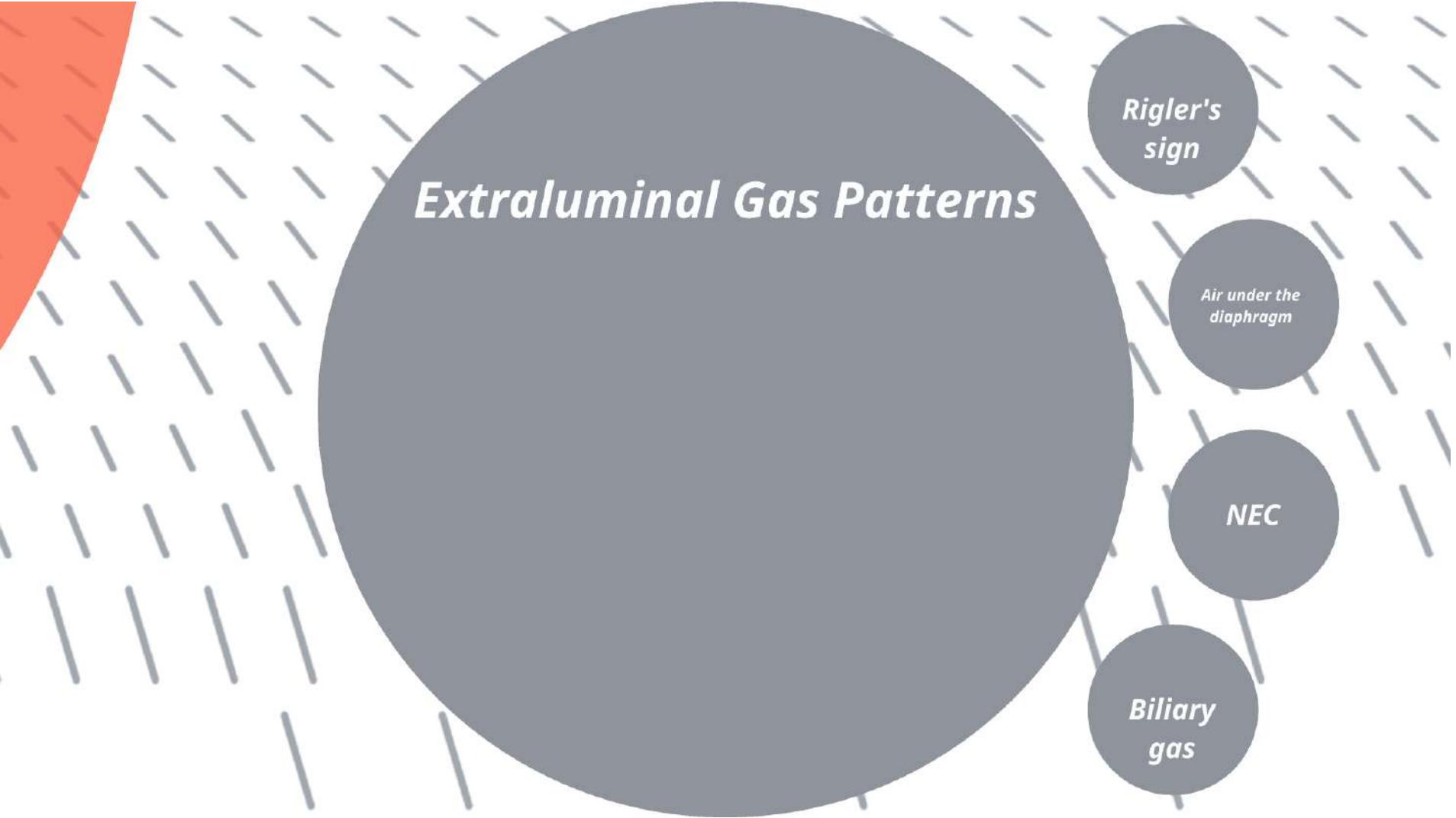


Inguinal hernia

Small bowel

Large bowel





Extraluminal Gas Patterns

*Rigler's
sign*

*Air under
the
diaphragm*

NEC

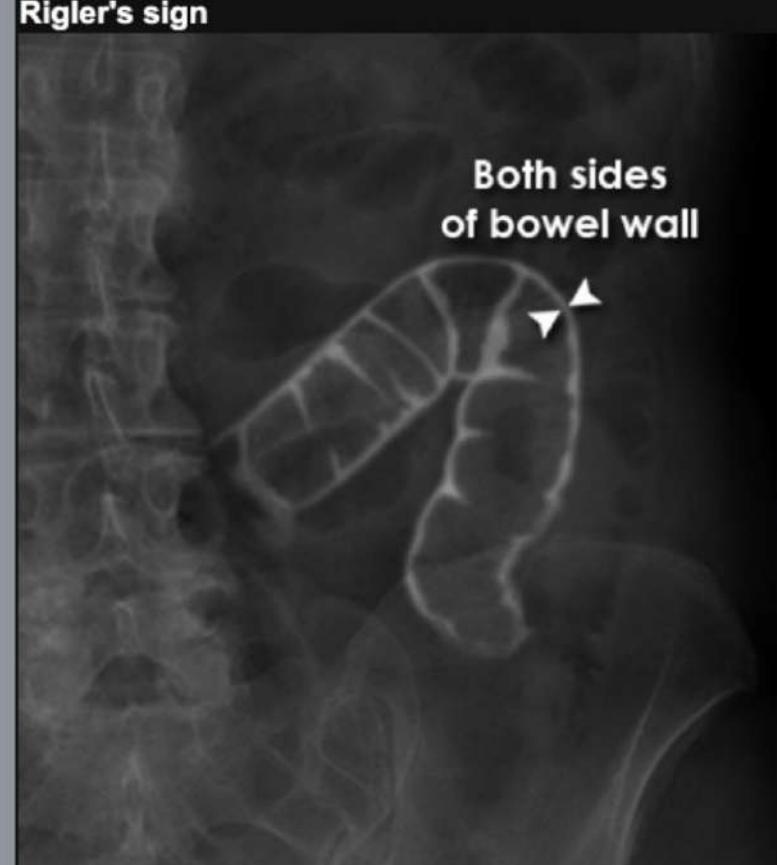
*Biliary
gas*

Rigler's sign

Rigler's sign



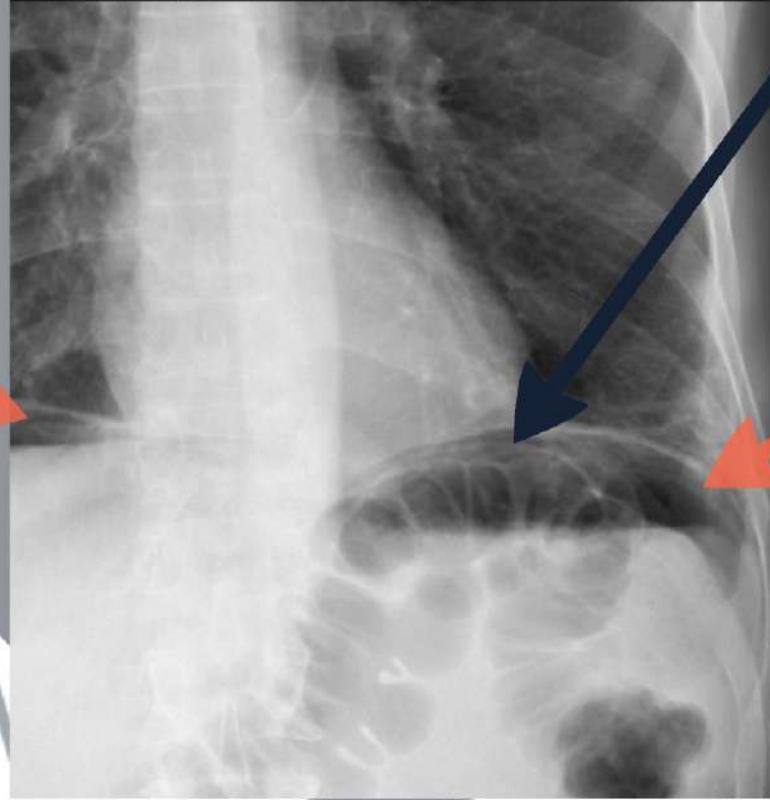
Rigler's sign



Rigler's

Air under the diaphragm

Rigler's sign - Chest X-ray



Necrotising enterocolitis

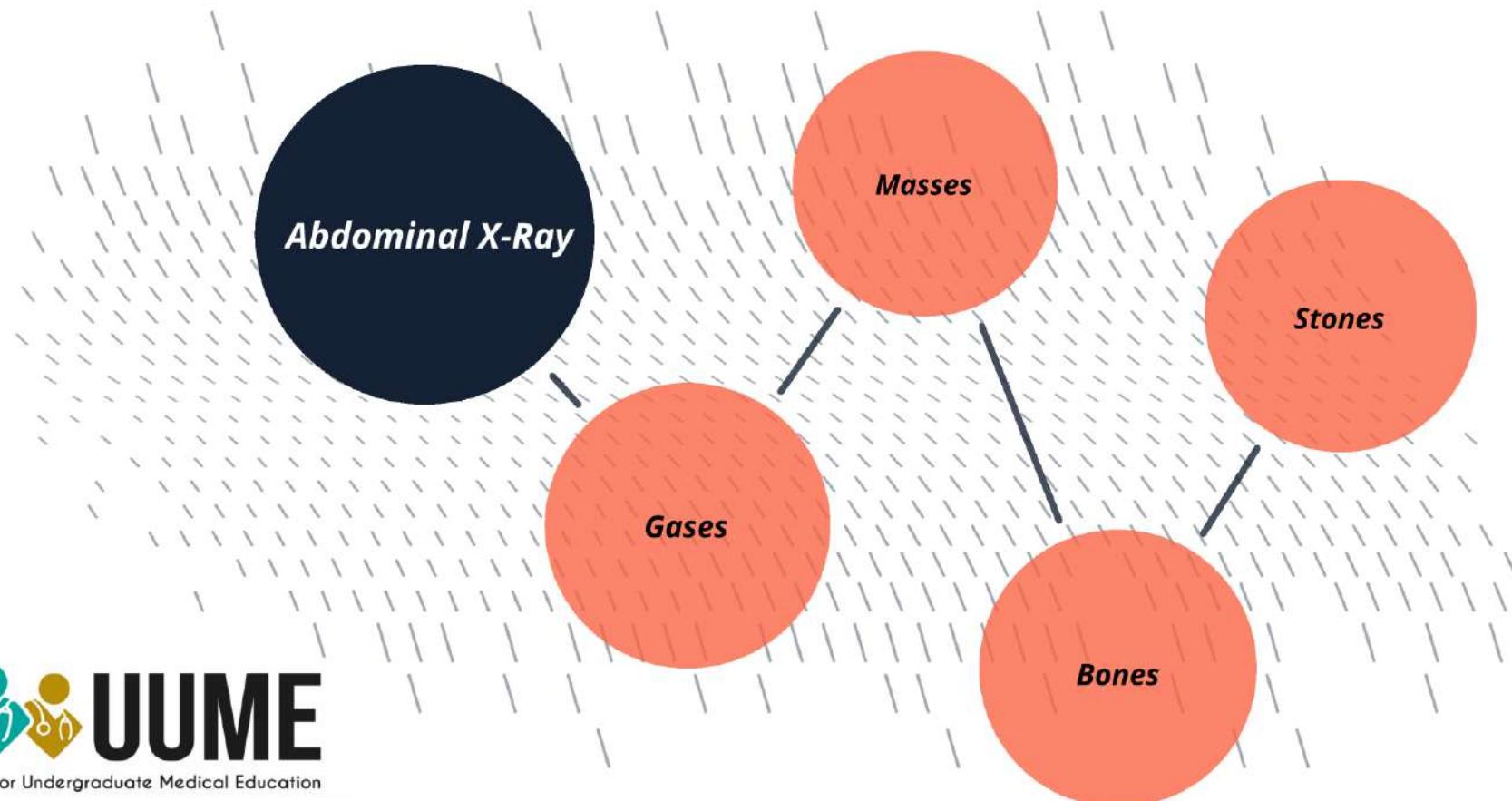
- Neonatal disease. Necrosis of bowel
- Abnormal gas distribution
- Dilated bowel
- Free air
- Pneumatosis intestinalis
- Portal venous gas



Biliary gas

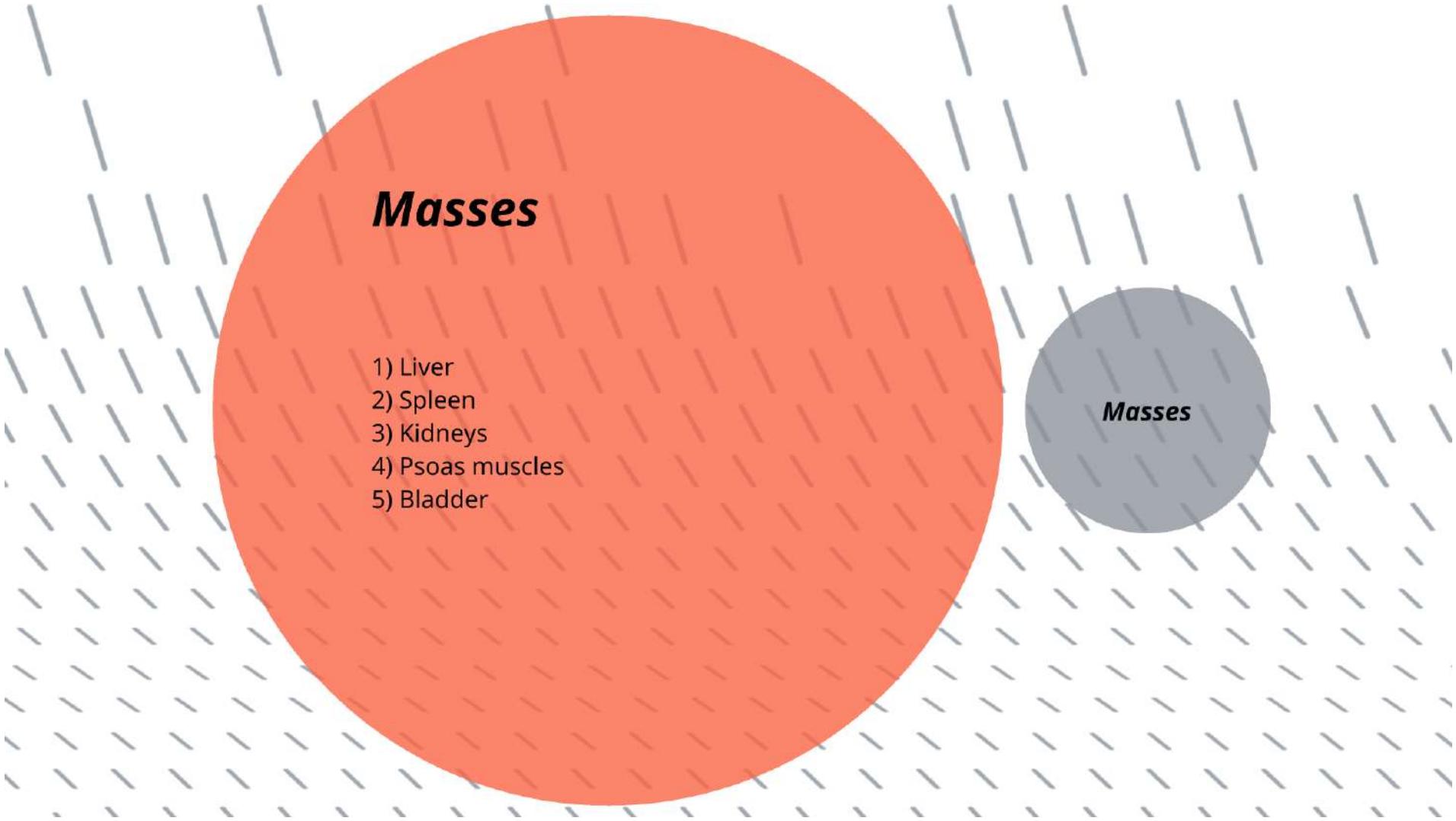


Interpreting abdominal X-Rays



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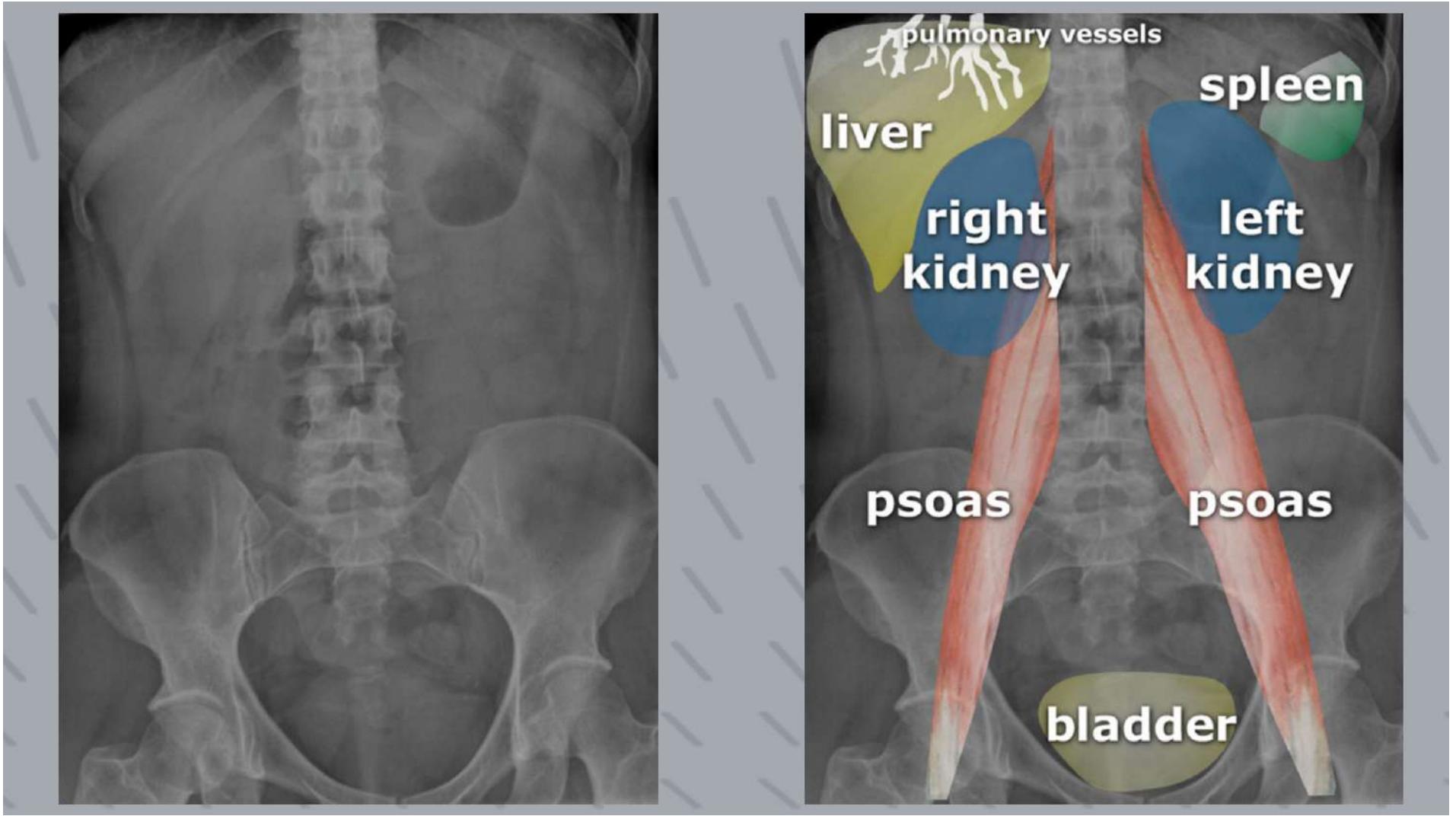
Dr Carl Pieterse MBChB (Pret) DA (SA)



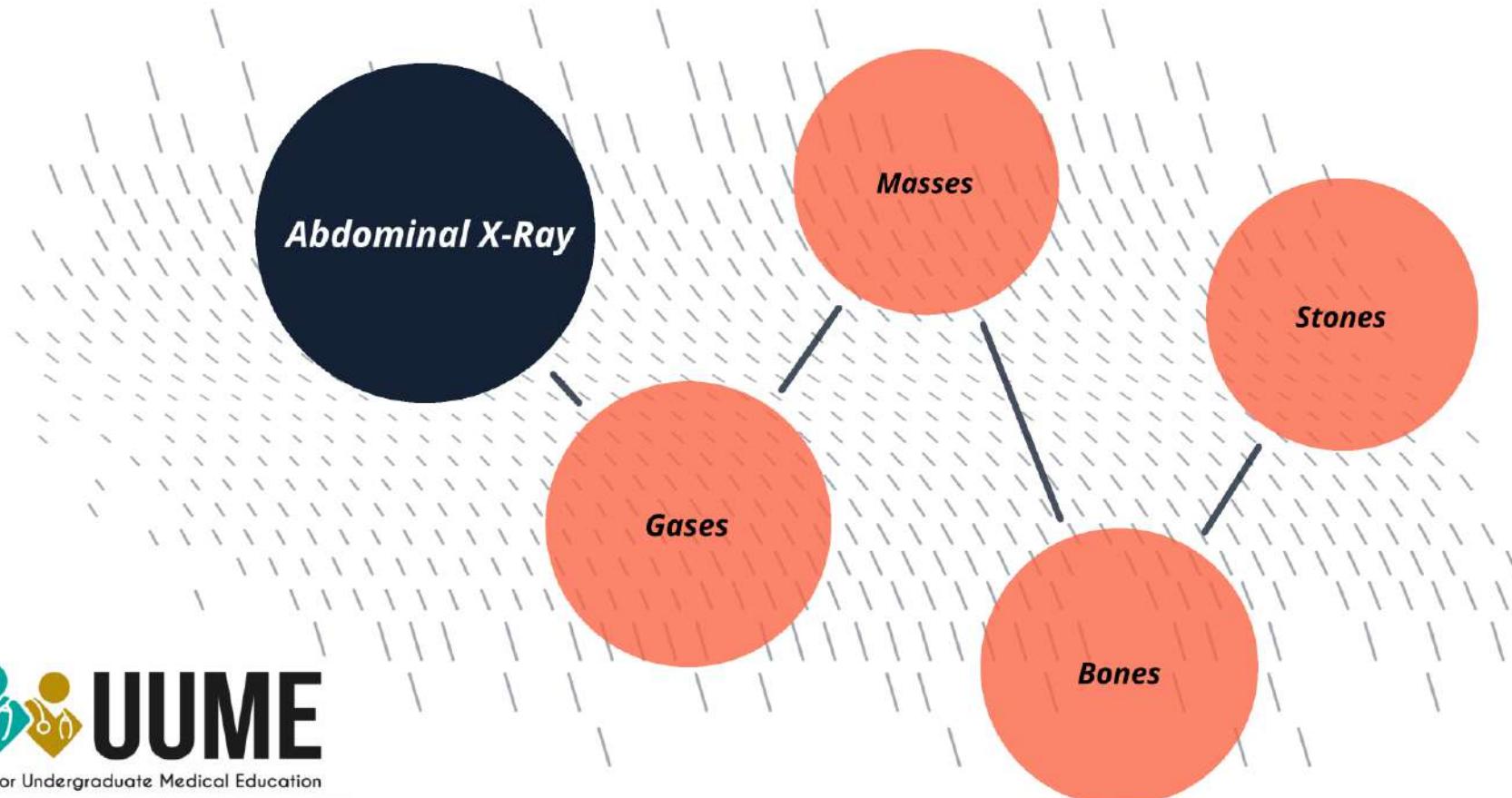
Masses

- 1) Liver
- 2) Spleen
- 3) Kidneys
- 4) Psoas muscles
- 5) Bladder

Masses



Interpreting abdominal X-Rays



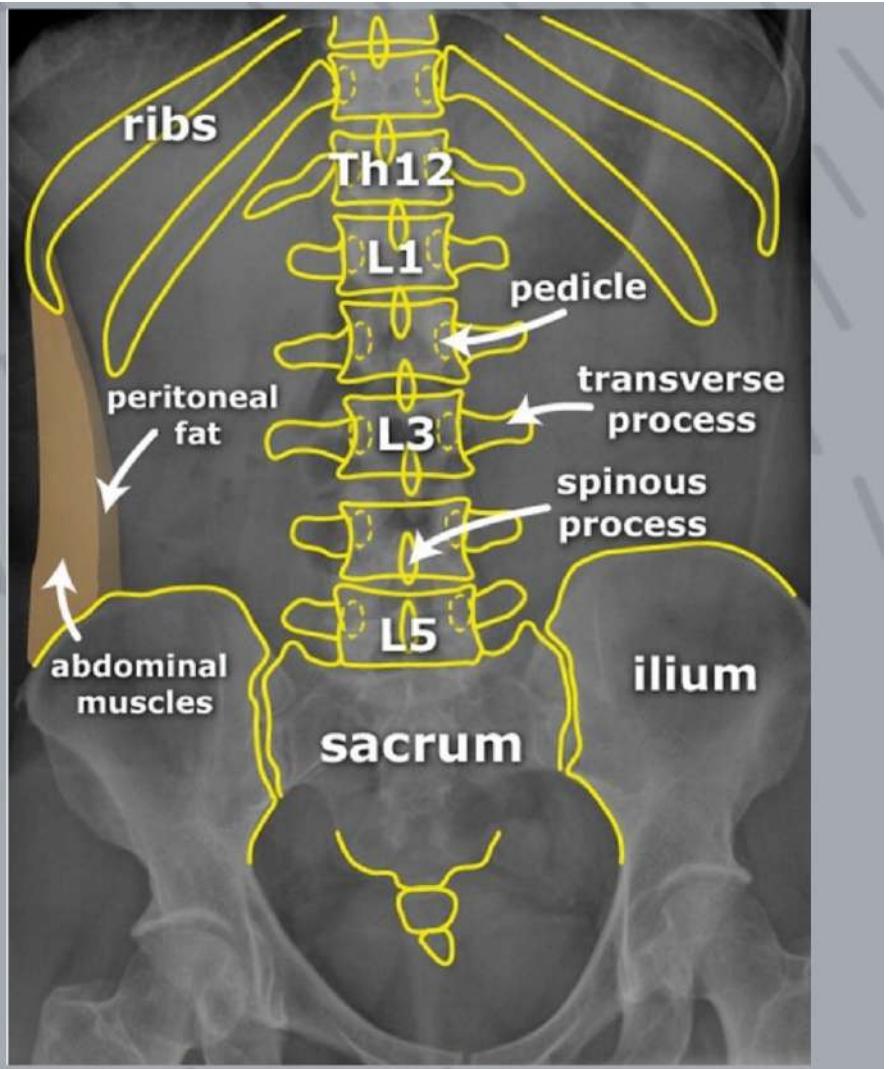
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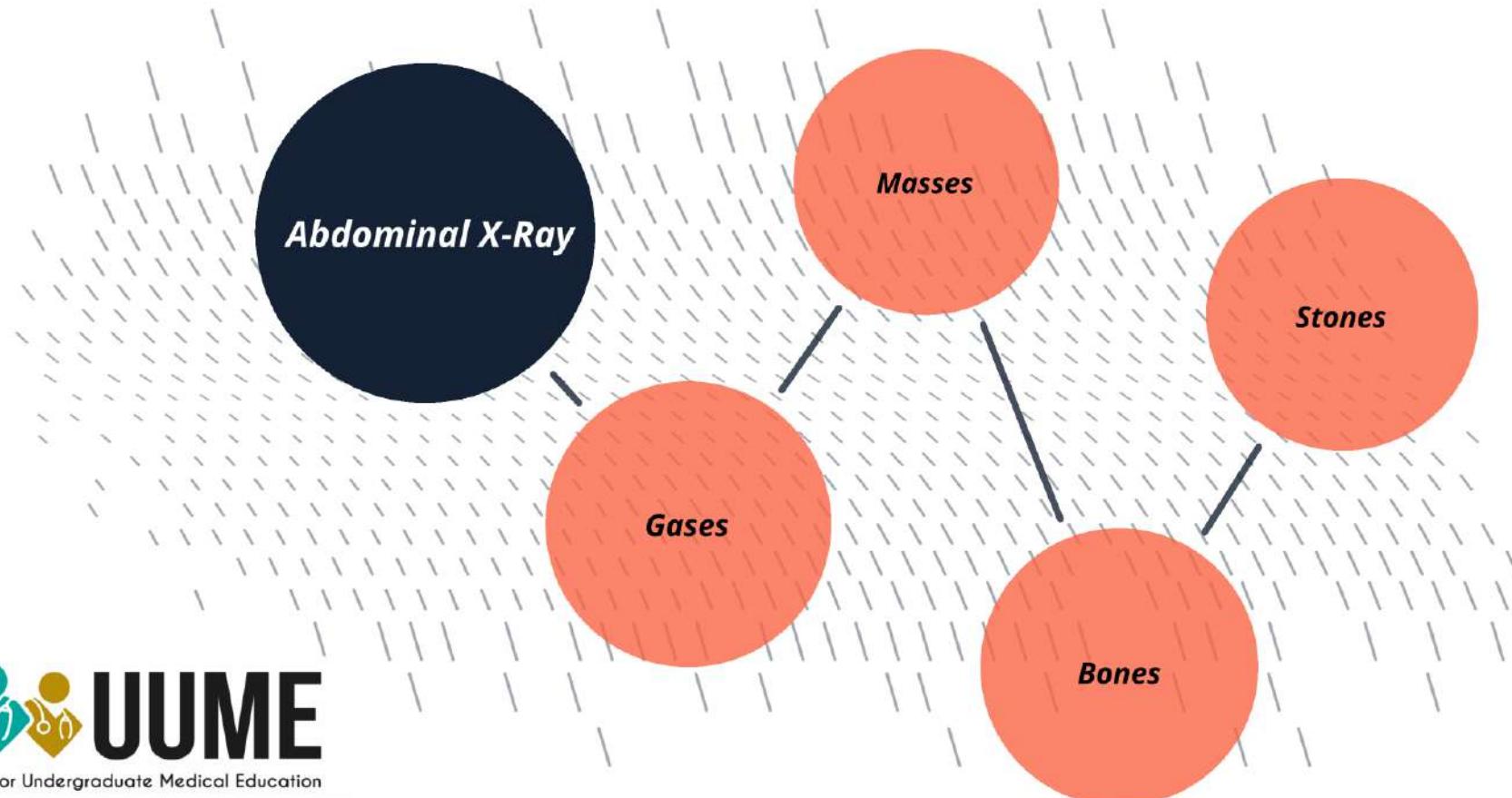
Skeletal structures

- 1) Spine
- 2) Ribs
- 3) Pelvis
- 4) Femurs

Bones



Interpreting abdominal X-Rays



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Calculi and artifacts

- 1) Ureters
- 2) Urogenital tones
- 3) Gall stones and pancreatic calcification
- 4) Foreign bodies
- 5) Calcified lymph nodes
- 6) **Leads and Lines**

Ureters

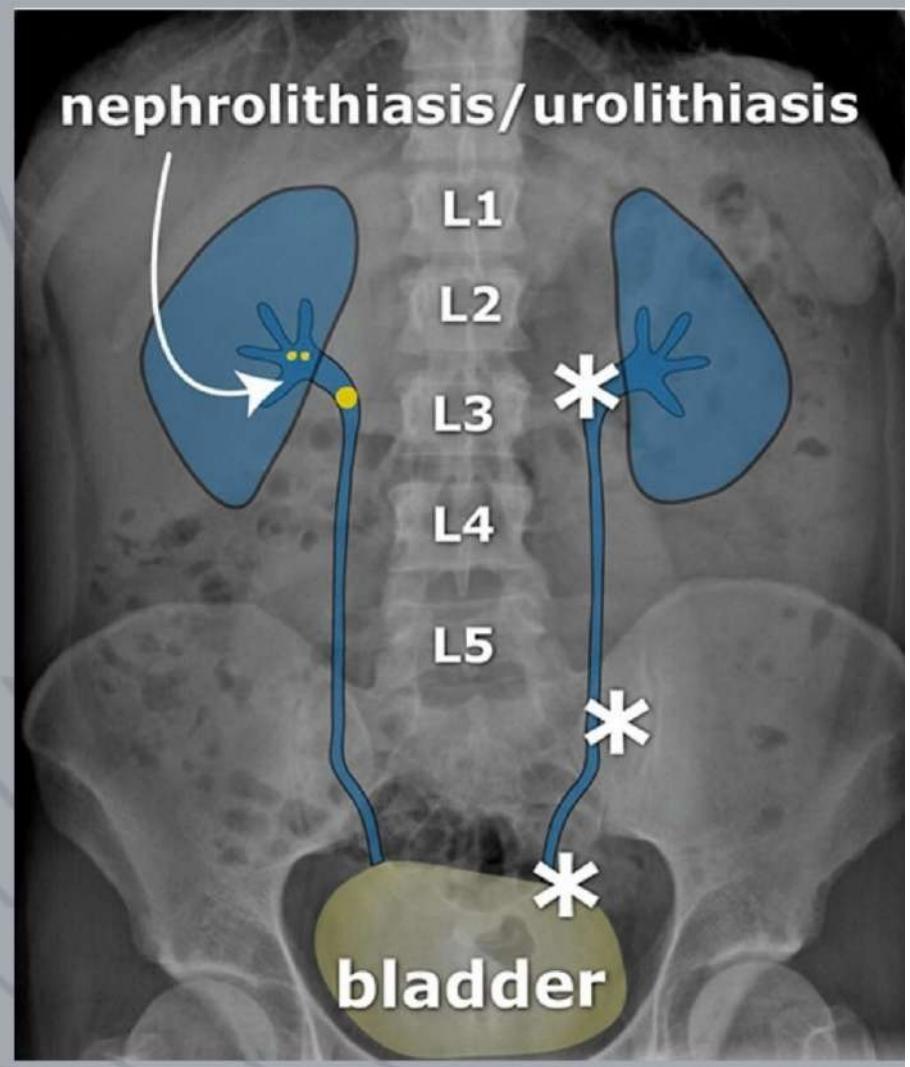
*Urogenital
Stones*

Biliary

*Foreign
Objects*

*Leads
and
Lines*

*Lymph
Nodes*





Calcified gallstones



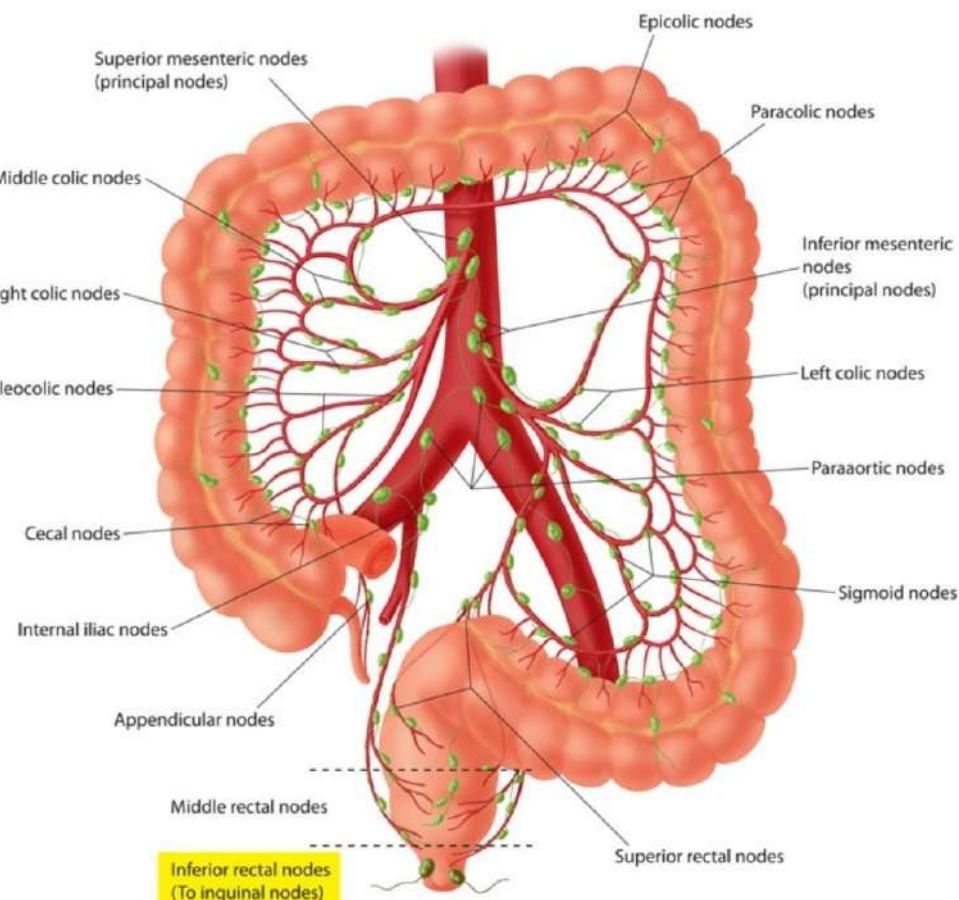
Pancreatic calcification



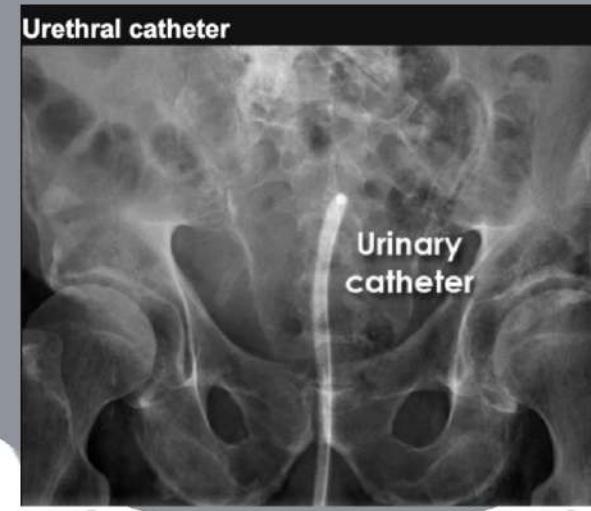
Ureteric stent



Lymph nodes & vessels of large intestine



Example

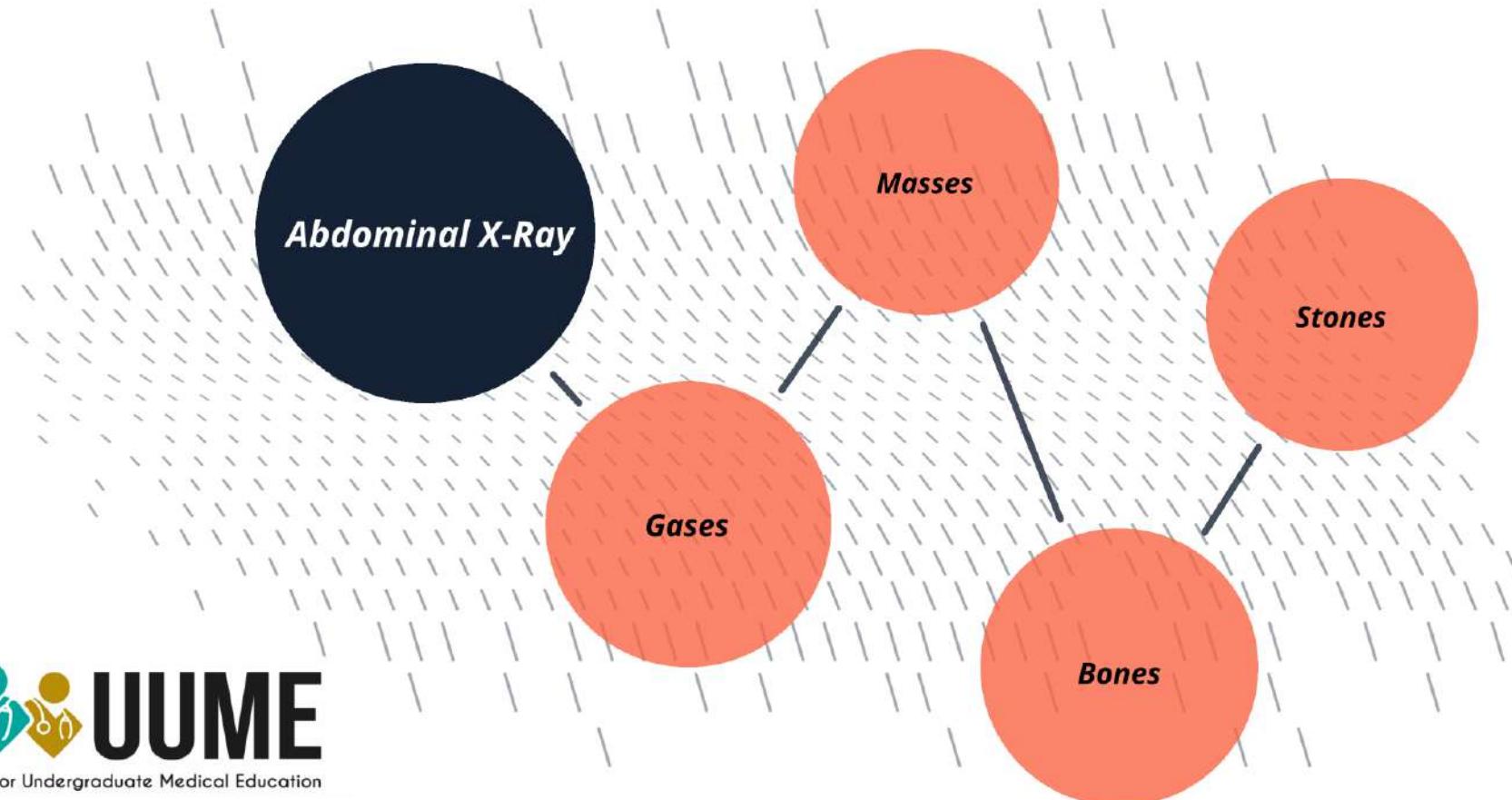


Sofia Blignaut
DOB: 27/10/1986
Hosp #: 998899
Pofadder Hospital
14-01-2020 14:33



A 33-year-old woman was brought into hospital by the correctional services. She is complaining of abdominal pain. An x-ray was ordered after the physical exam.

Interpreting abdominal X-Rays



Unit for Undergraduate Medical Education

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