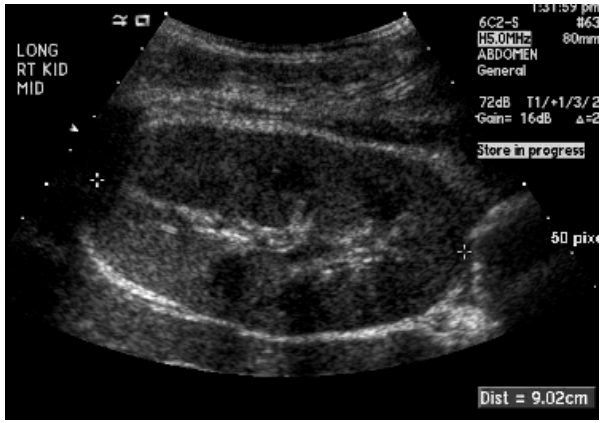
Radiology of the Pediatric Abdomen

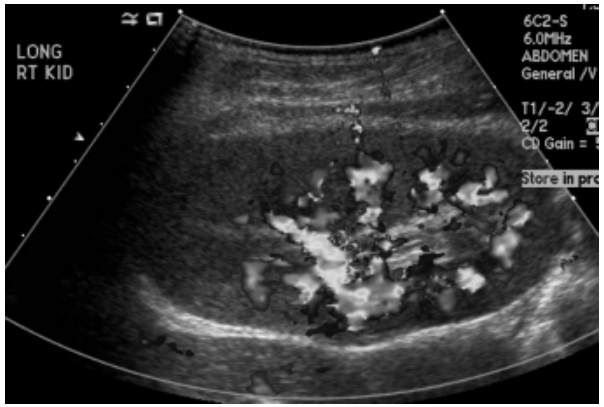
Dr.Eman AL-Jarrah

Ultrasound: Pyelonephritis

- Ultrasound usually normal
- Severe infection can cause diffuse or focal renal enlargement, increased echogenicity relative to normal parenchyma, decreased CM differentiation, urothelial thickening
- Doppler demonstrates decreased vascularity to affected regions

Ultrasound: Pyelonephritis

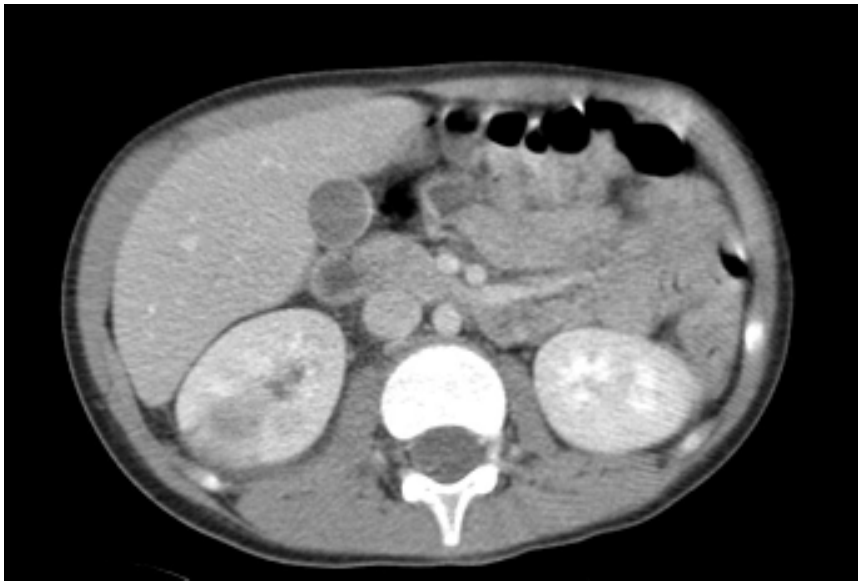




Pyelonephritis- CT

- Focal or diffuse enlargement
- Wedge-shaped regions of decreased enhancement

CT Pyelonephritis



Patient 1

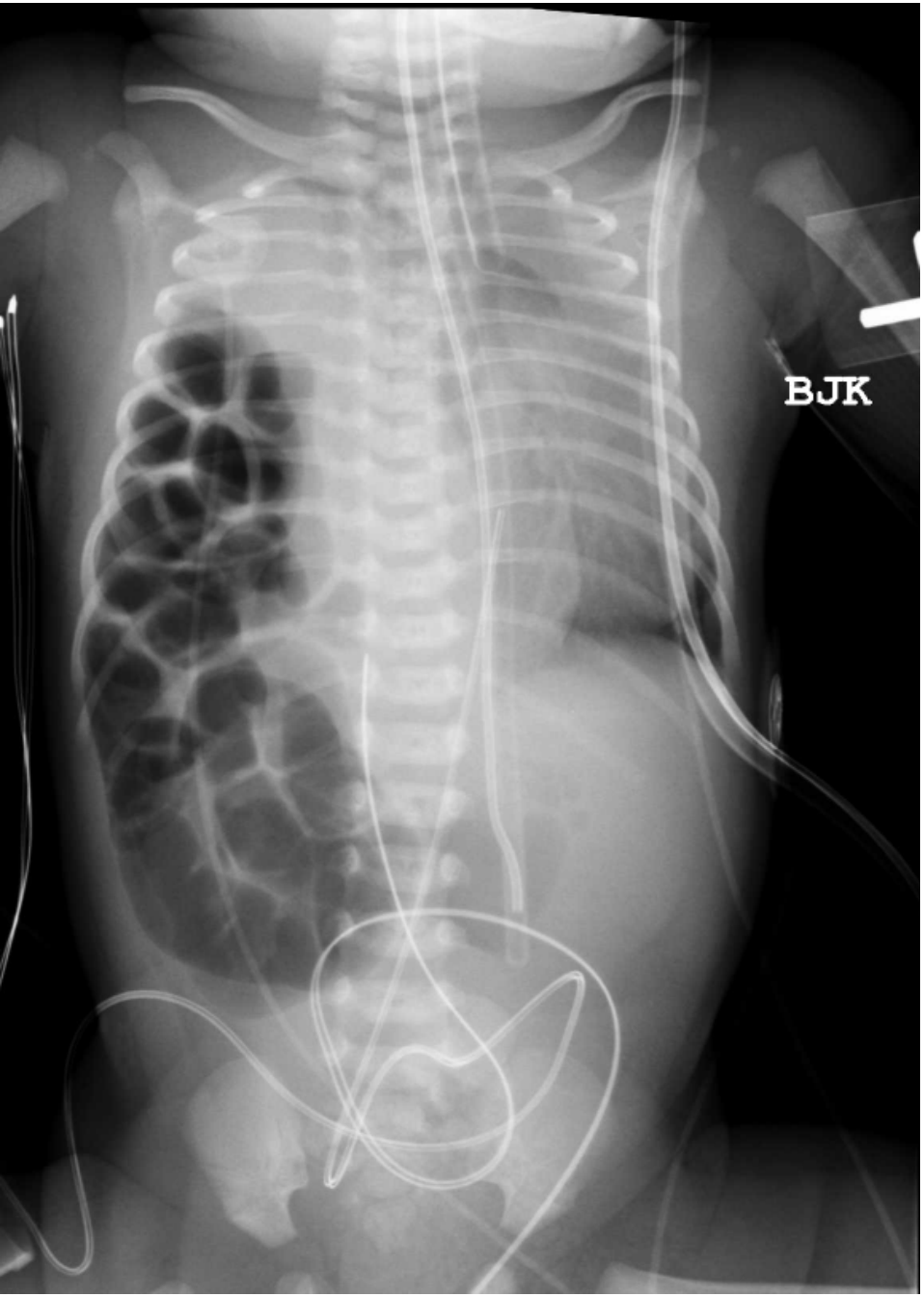
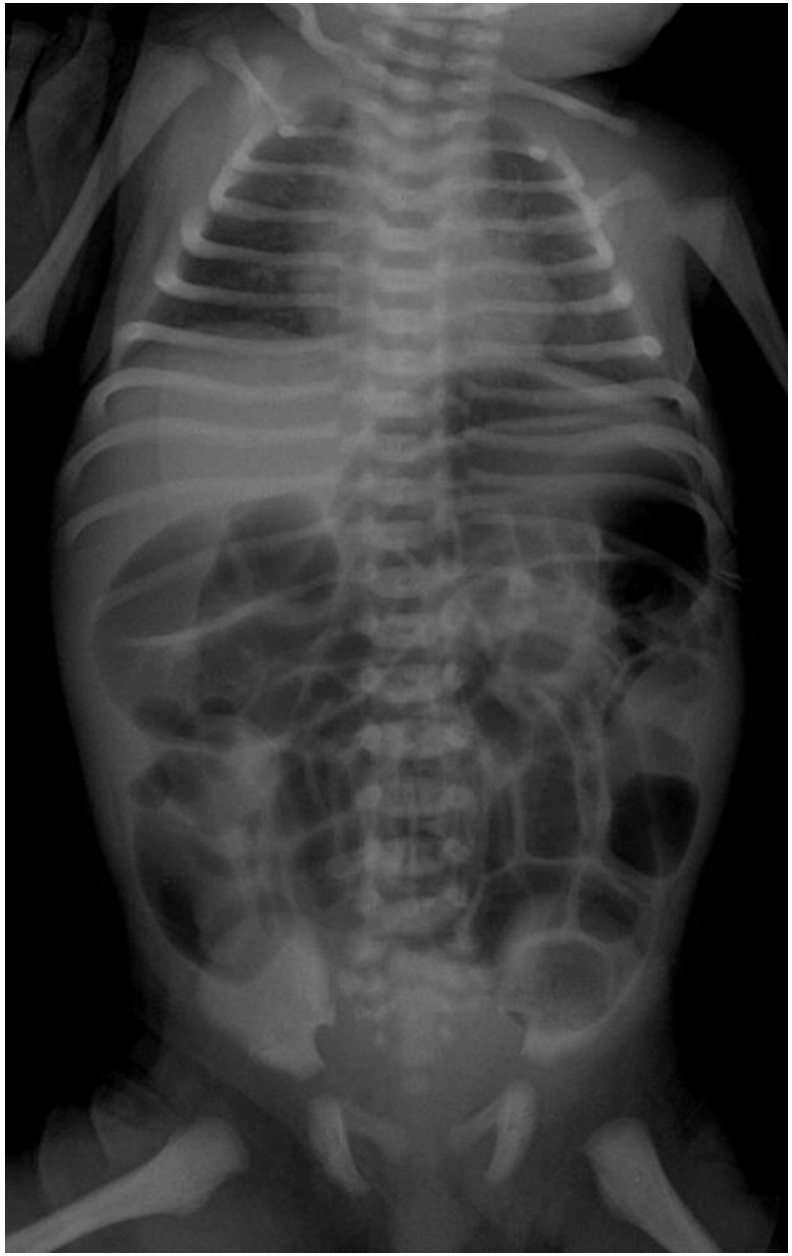


Fig 1

Diagnosis:
Congenital diaphragmatic hernia

Discussion- CDH

- 1 in 2000-4000 live births
- Patent pleuroperitoneal canal, might contain liver, spleen, stomach and bowel
- M:F 2:1
- L:R 9:1
- Associated anomalies in 20%
- Mortality related to lung hypoplasia



Imaging findings

- Multiple distended loops of small and large bowel with paucity of gas distally concerning for low bowel obstruction.
- Differential diagnosis in the neonatal peroid includes:

1- Imperforate anus

2- Hirshprung’s disease

3- Meconium ileus

4- Ileal atresia

5- Meconium plug syndrome

- Differential diagnosis in the older child includes:

1- Incarcerated hernia (which is the most common cause in pediatrics)

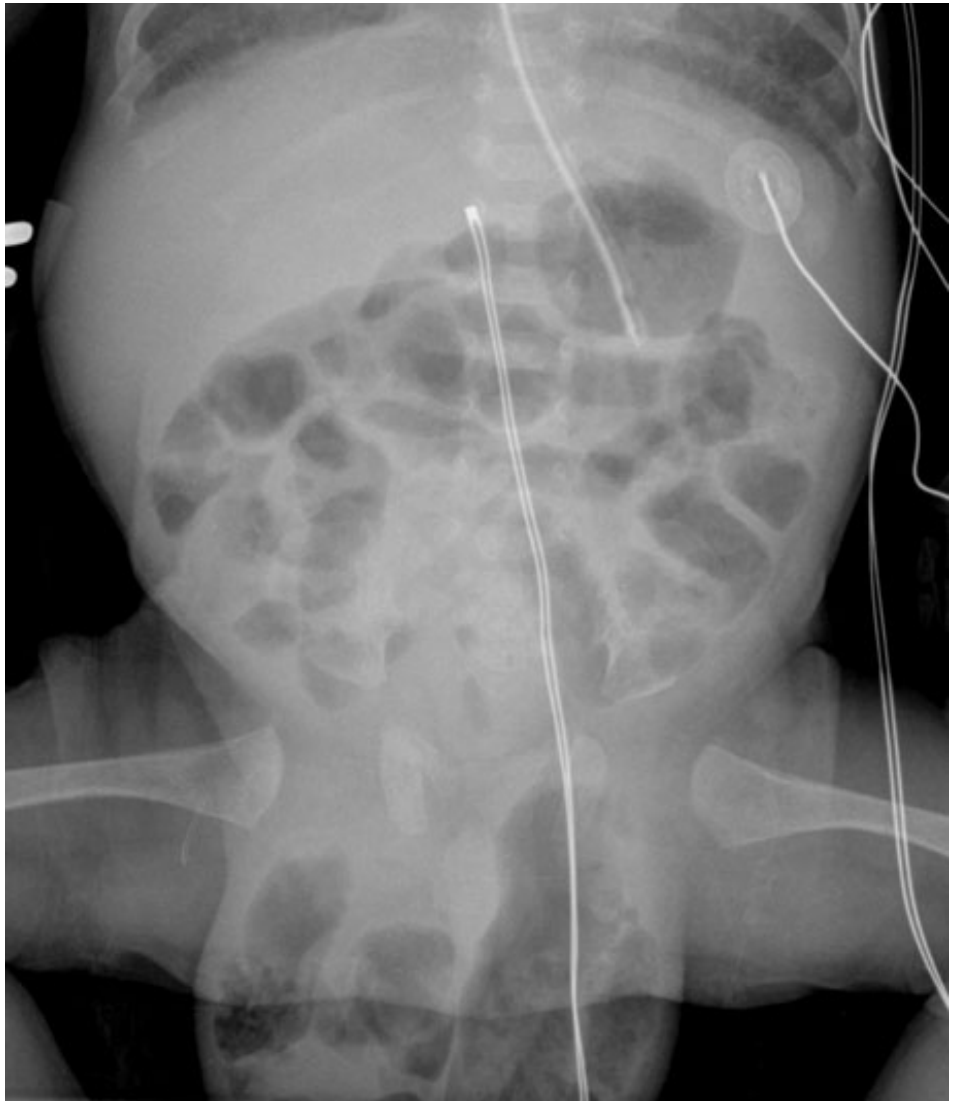
2- Intussusception

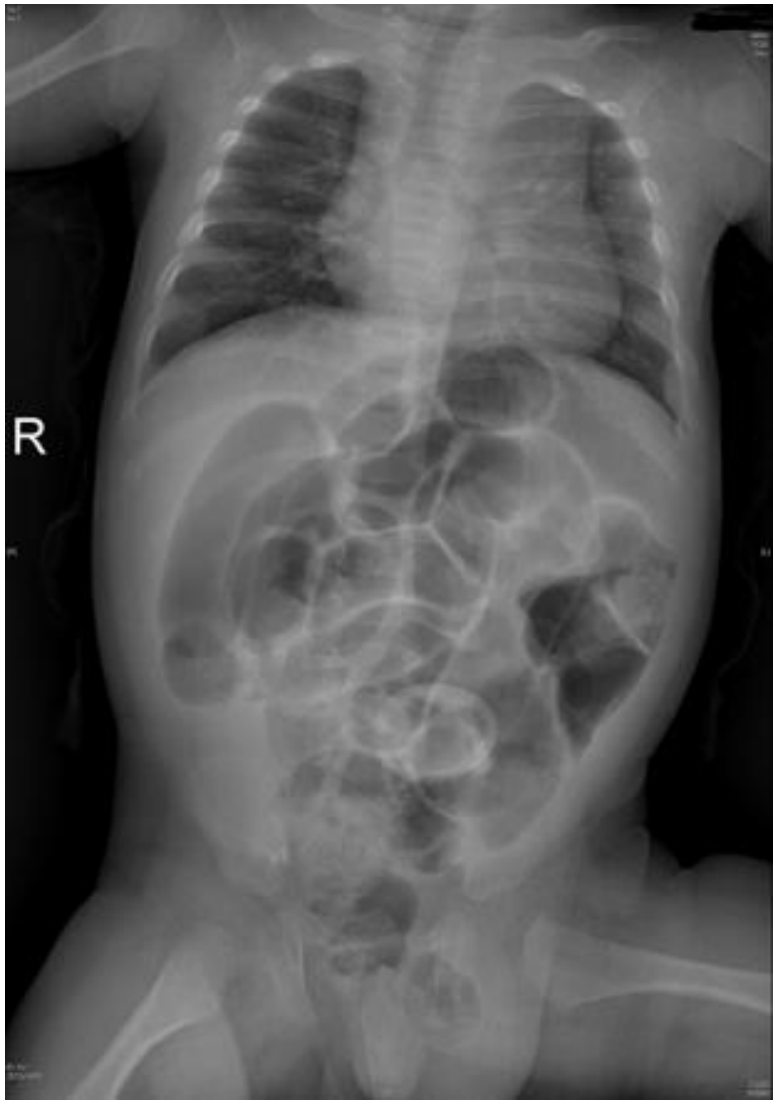
3- Appendicitis

4- Adhesions (most common cause in adults)

5- Meckel’s diverticulum

Case




R

Imaging findings

- Chest and abdominal x-ray demonstrating multiple dilated bowel loops with large bilateral inguinal hernias extending into the scrotum.

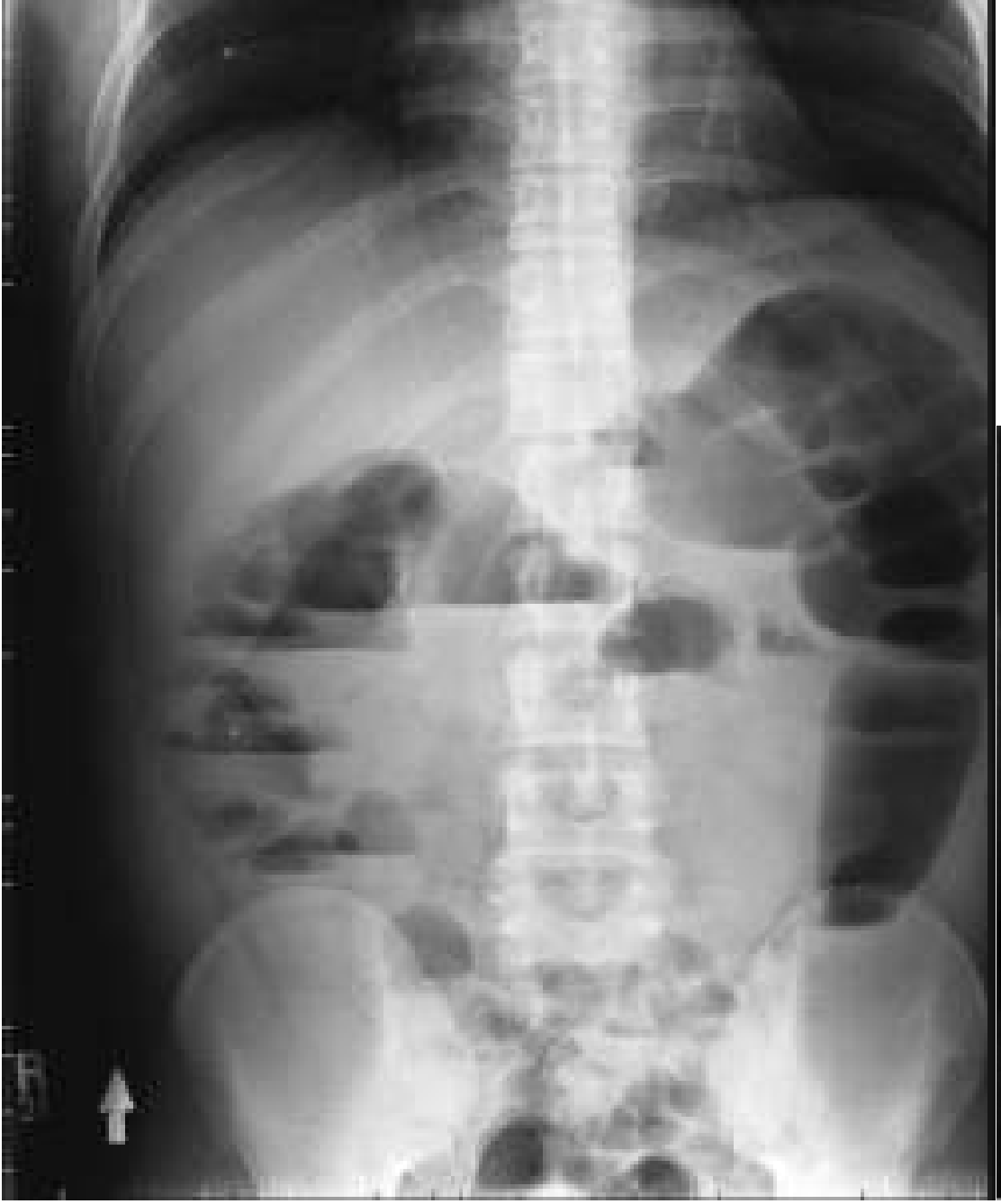
- Abdominal x-ray showing multiple dilated loops of bowel with small left inguinal hernia

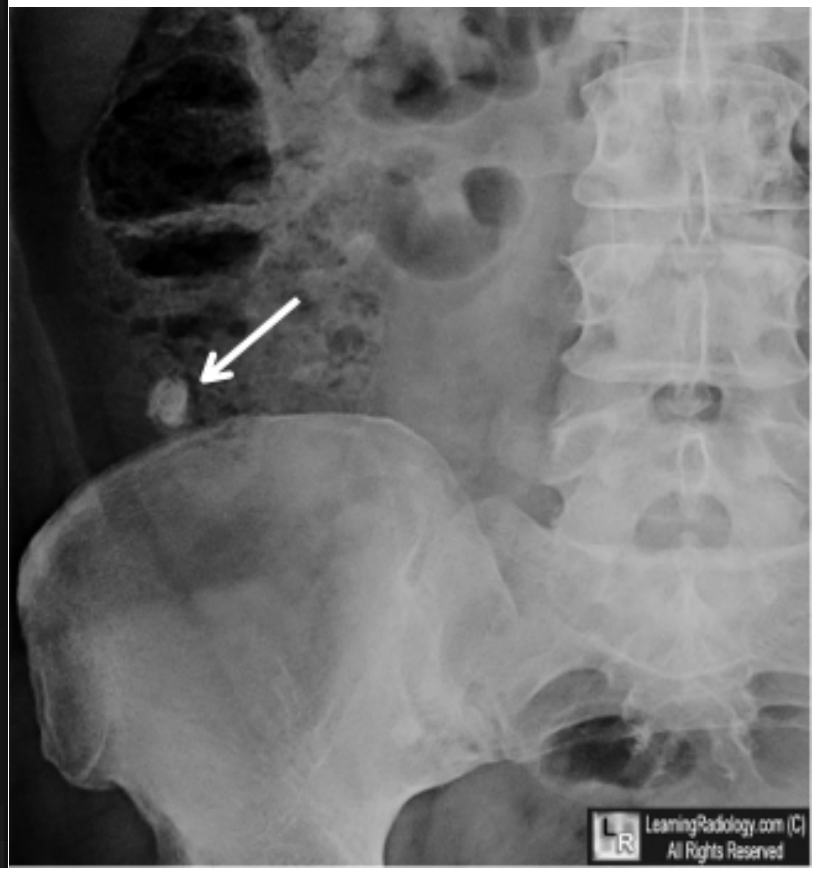
Diagnosis: Incarcerated Inguinal Hernia

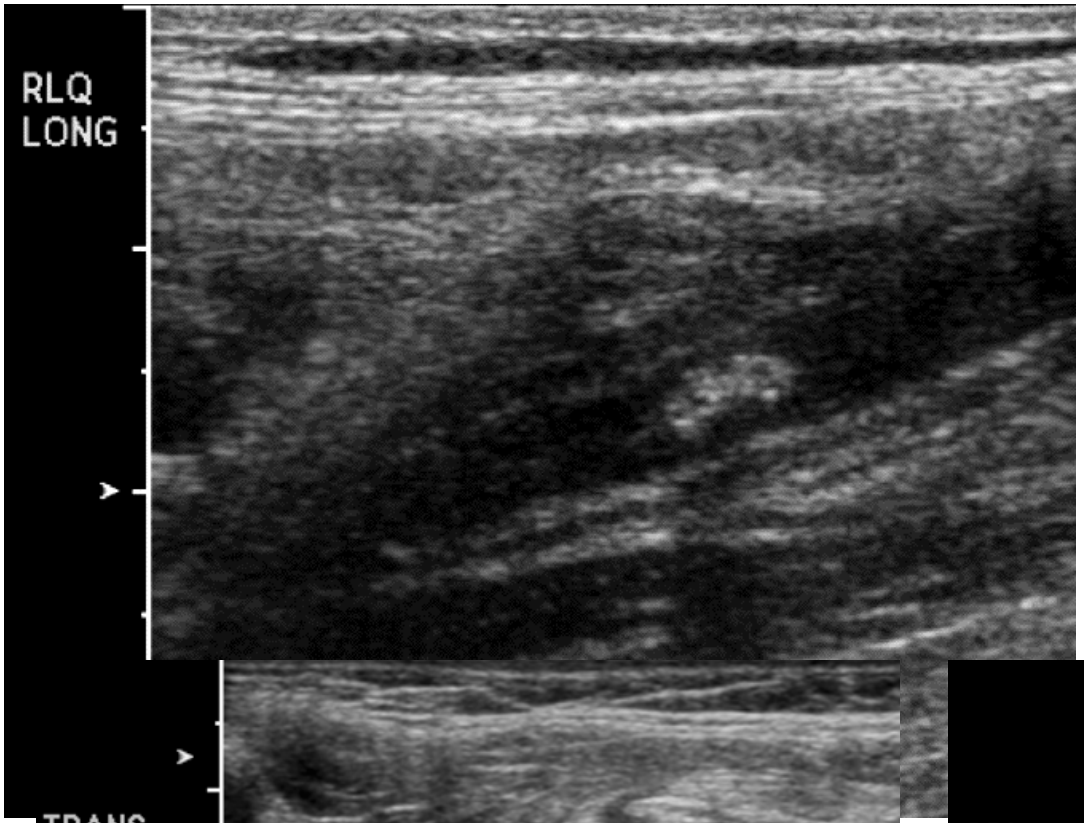
Discussion- Inguinal hernia

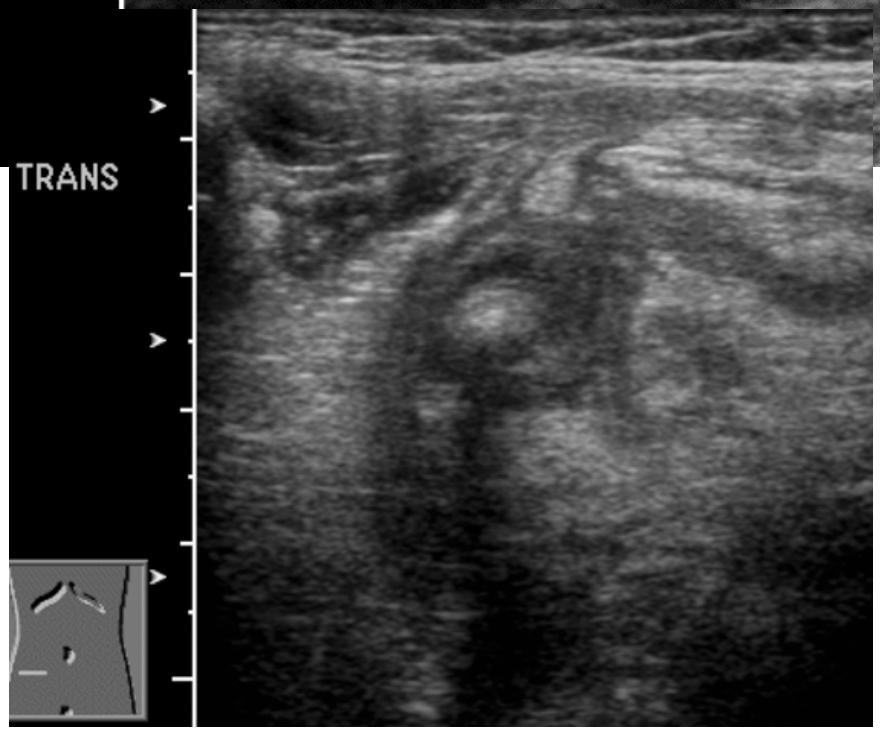
- Most common cause of obstruction> day 4
- M:F 9:1, R:L 5:1
- Gas in the scrotum

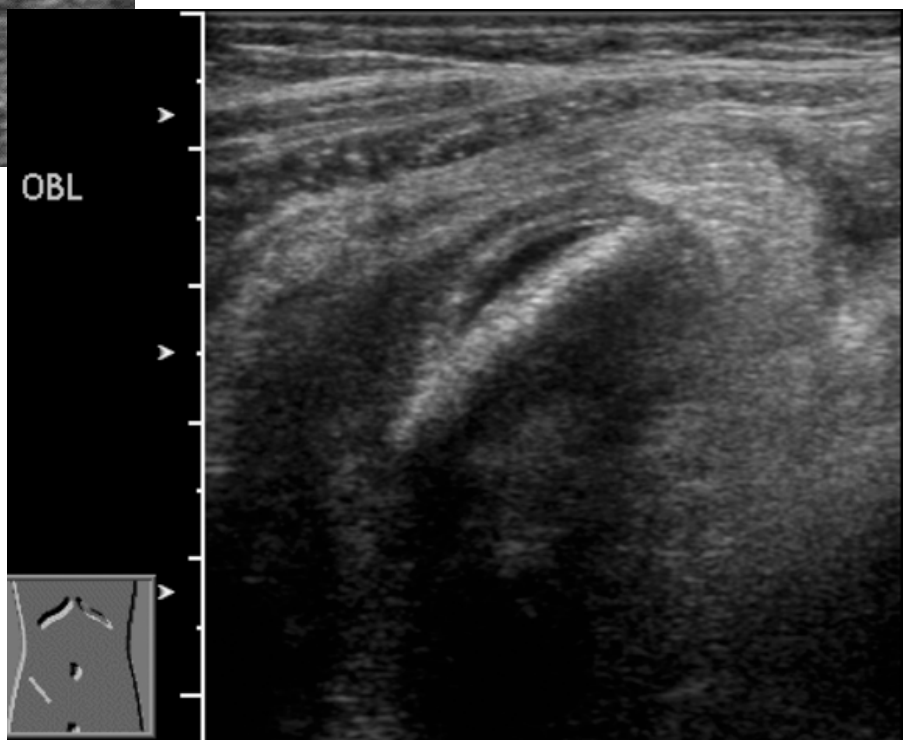
Case 11

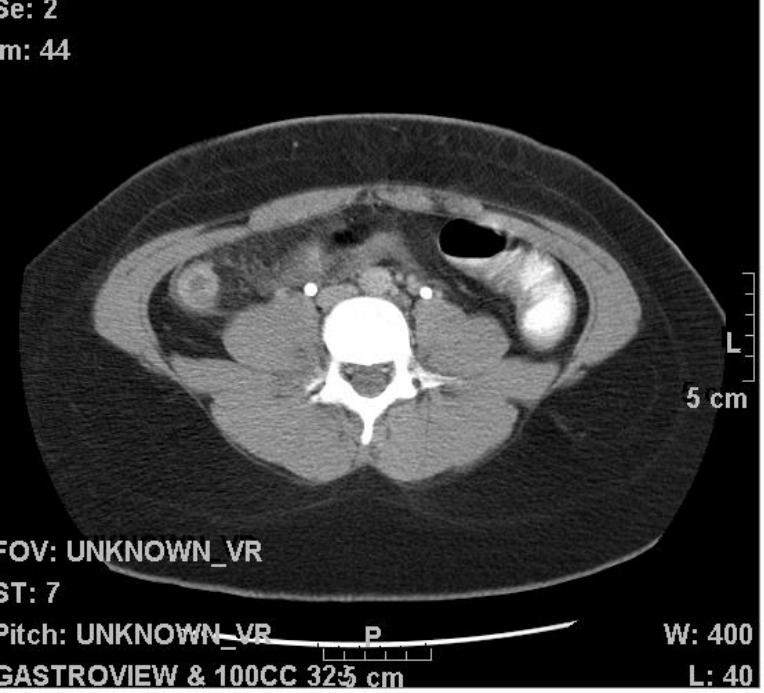


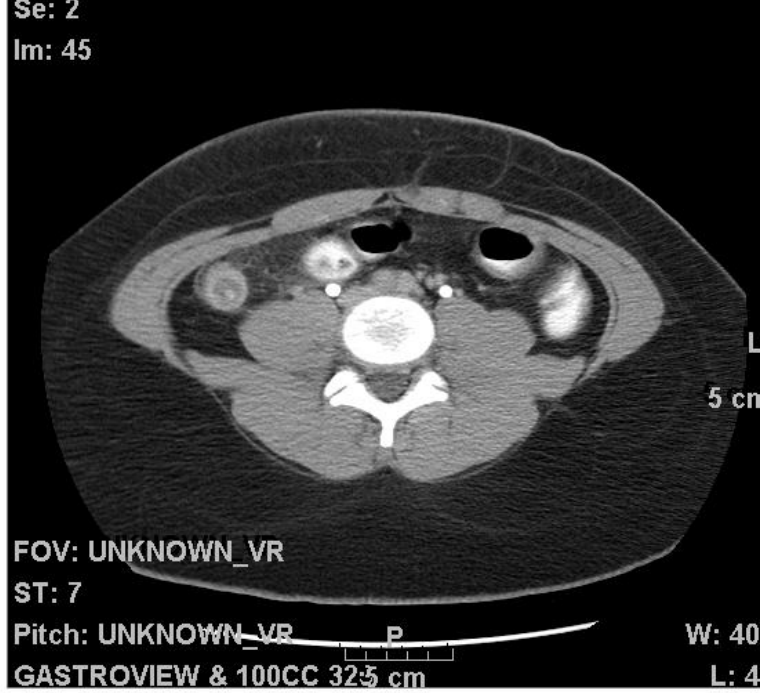

LearningRadiology.com (C)
All Rights Reserved

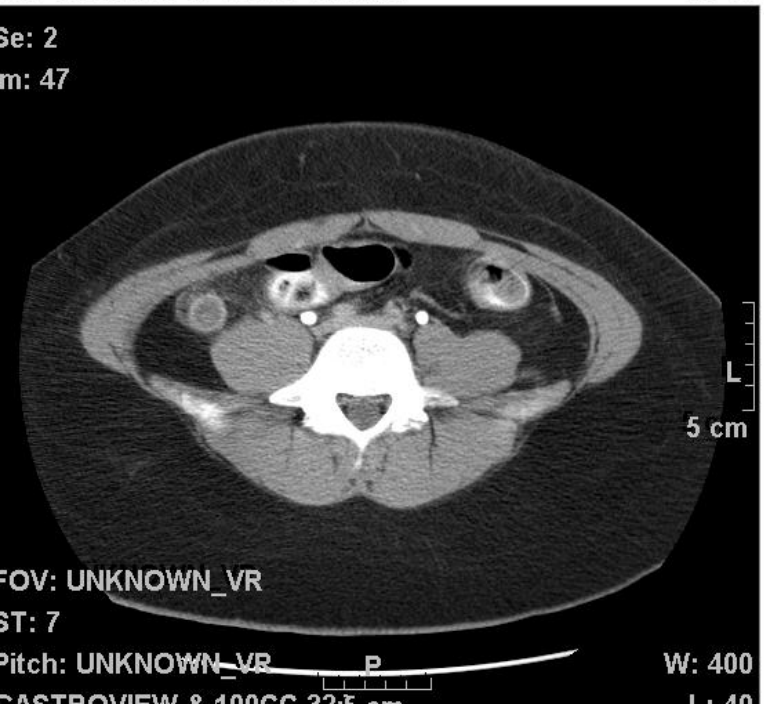

RLQ
LONG

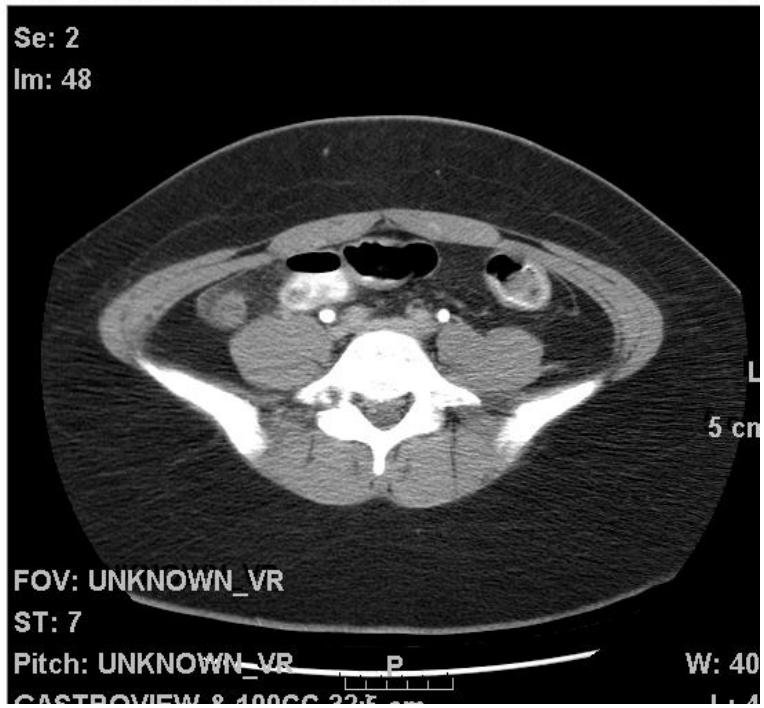

TRANS


OBL


Se: 2
Im: 44
L
5 cm
FOV: UNKNOWN_VR
ST: 7
Pitch: UNKNOWN_VR
P
W: 400
GASTROVIEW & 100CC 32.5 cm
L: 40


Se: 2
Im: 45
L
5 cm
FOV: UNKNOWN_VR
ST: 7
Pitch: UNKNOWN_VR
P
W: 40
GASTROVIEW & 100CC 32.5 cm
L: 4

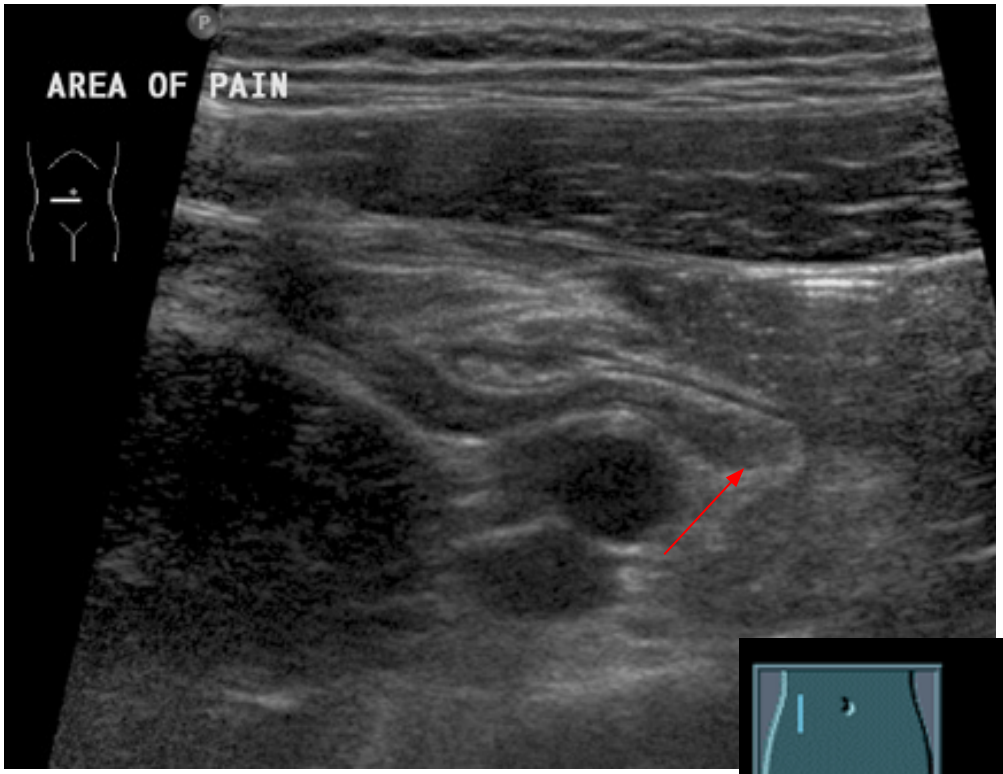

Se: 2
Im: 47
L
5 cm
FOV: UNKNOWN_VR
ST: 7
Pitch: UNKNOWN_VR
P
W: 400


Se: 2
Im: 48
L
5 cm
FOV: UNKNOWN_VR
ST: 7
Pitch: UNKNOWN_VR
P
W: 40

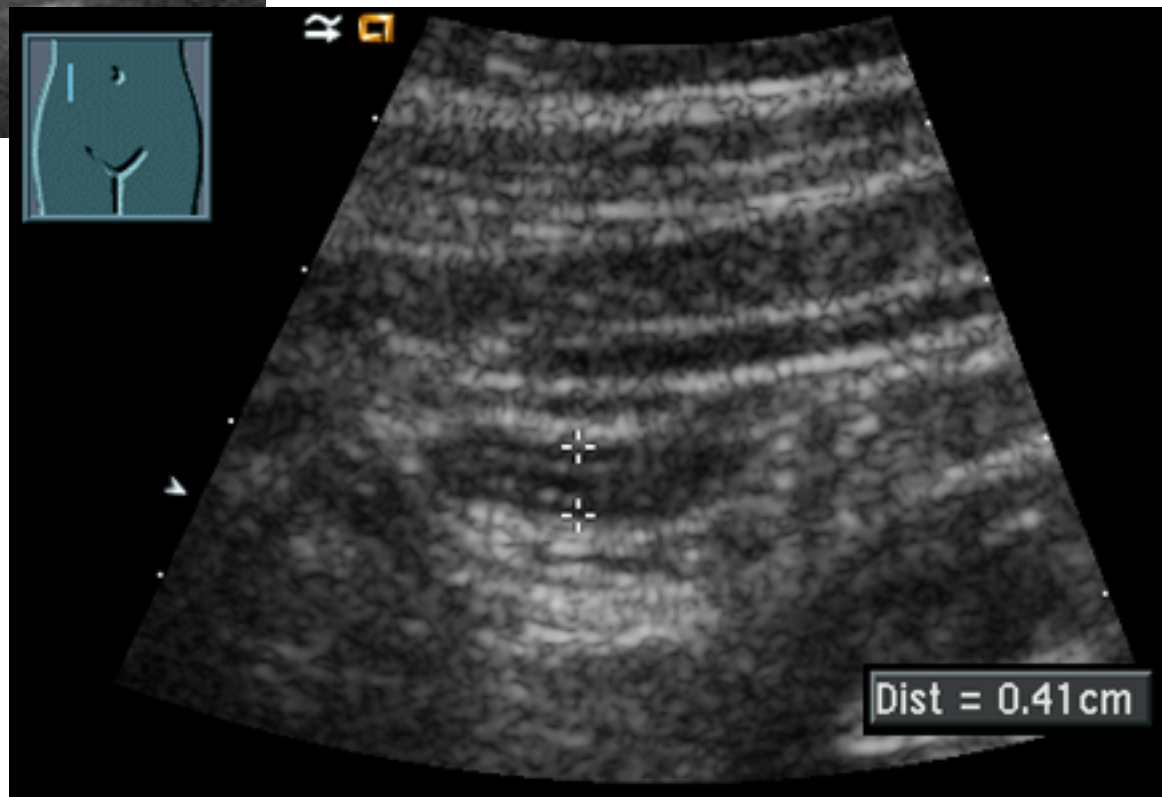
Diagnosis: Acute appenidicitis

Discussion- Acute appendicitis

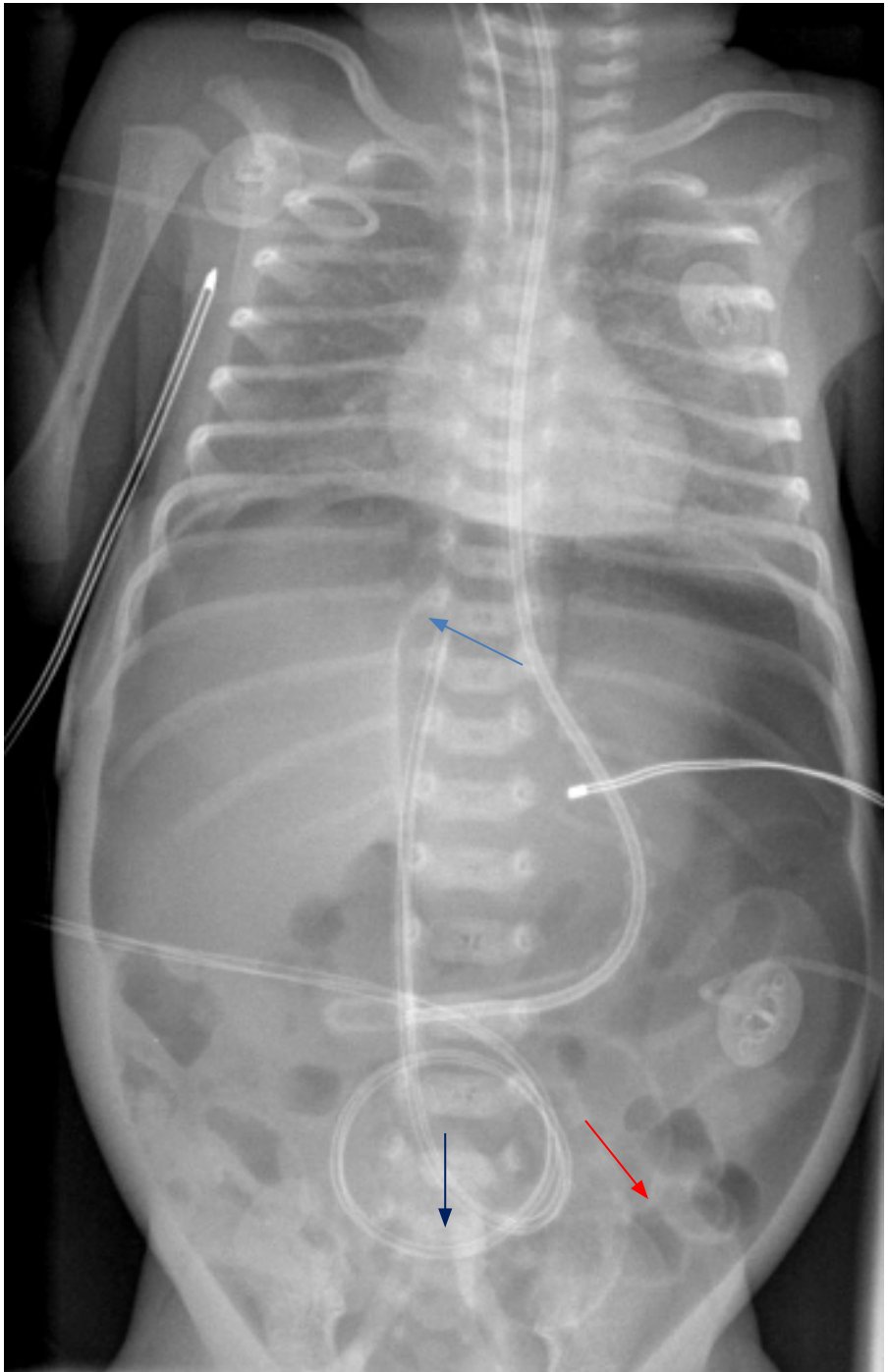
- Most common cause for emergent surgery in children
- 4/1000
- 8-9% life time risk
- Presentation: periumbilical pain that moves to RLQ, N., V., anorexia and fever
- Clinical diagnosis, difficult exam in the young patients, US/CT



Normal appendix (red arrow)



Case 12



Imaging findings

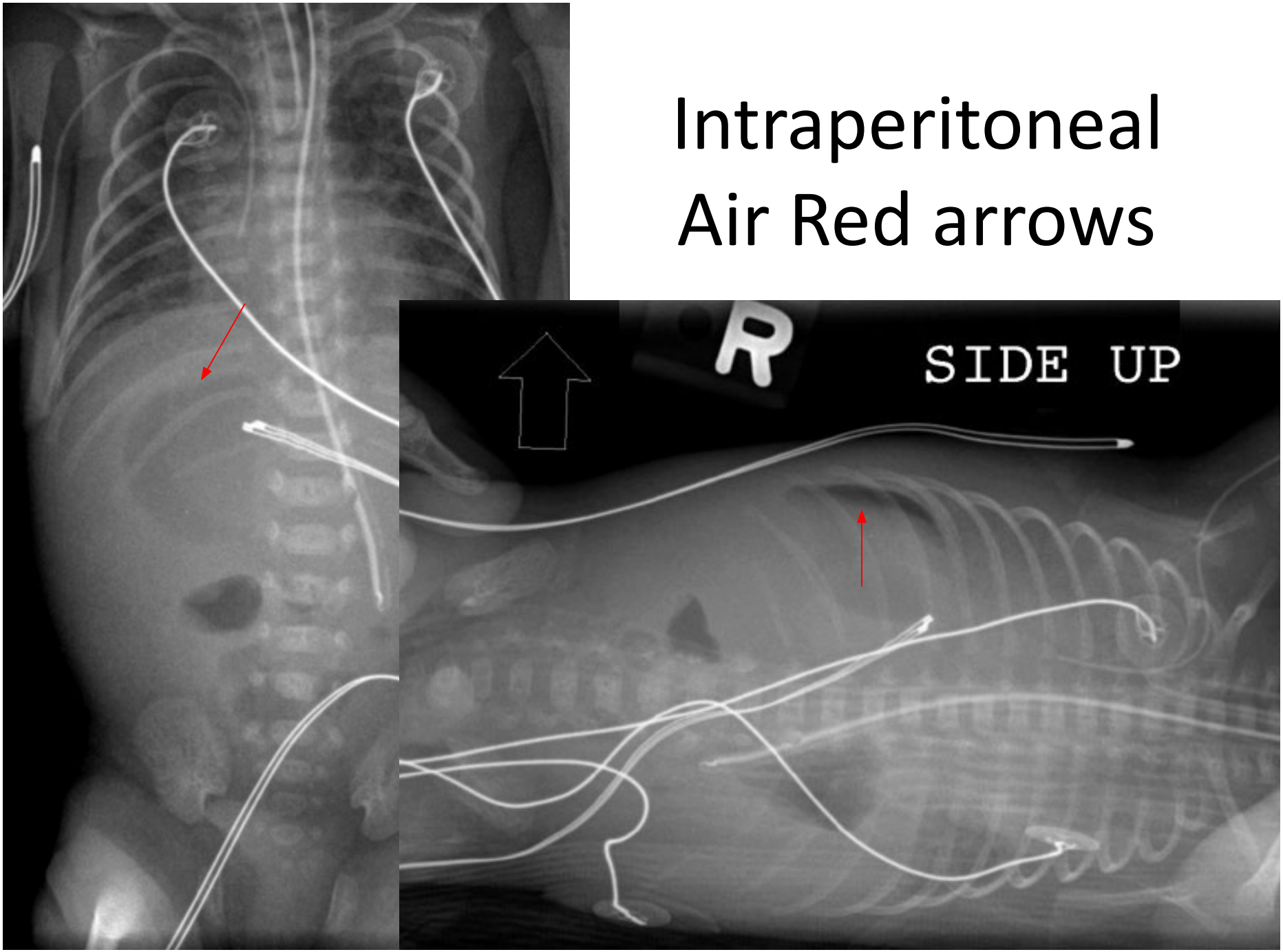
- Large amount of free intraperitoneal air (pneumoperitoneum) outlining the falciform ligament (light blue arrow) , note also the football sign and Rigler’s sign(air outlining both sides of the bowel red arrow).

Diagnosis: Pneumoperitoneum

Discussion- Pneumperitoneum

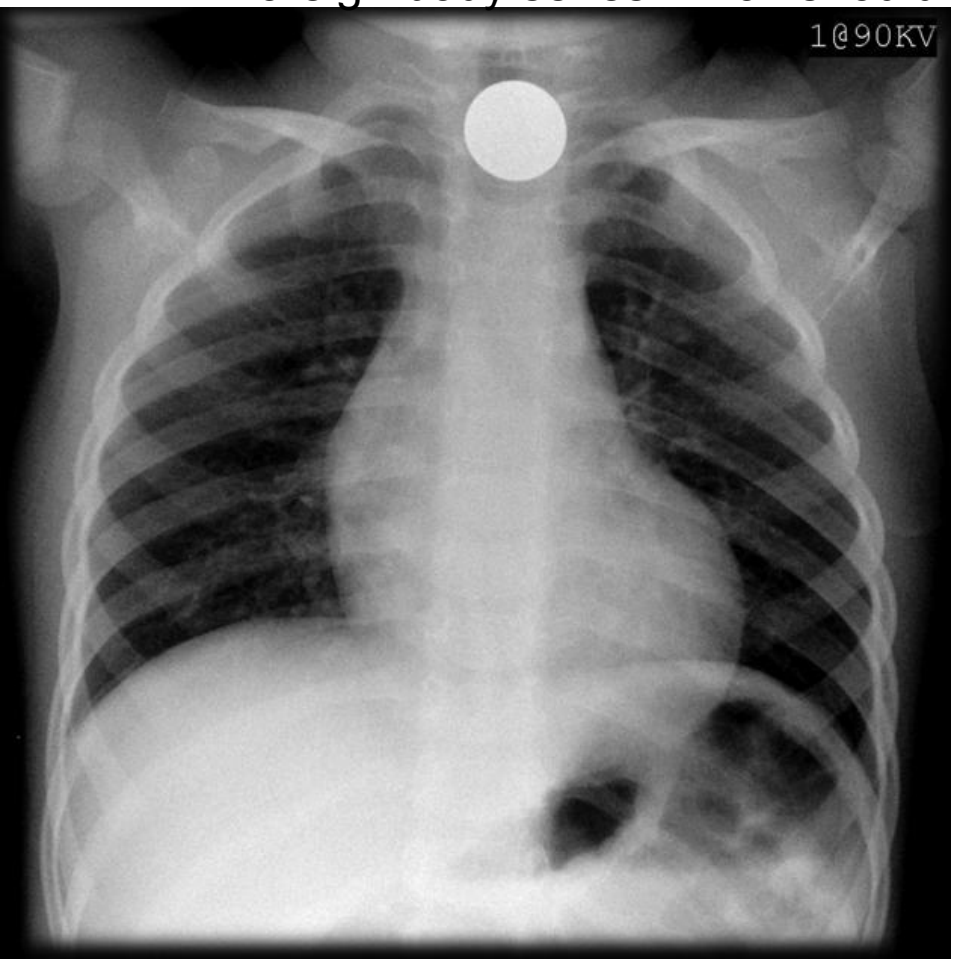
- Perforated viscus: Idiopathic, NEC, ulcer
- Dissection from mediastinum or retroperitoneum
- Post operative
- Might be difficult on supine abdominal x-rays
- Need horizontal beam view: left lateral decubitus view

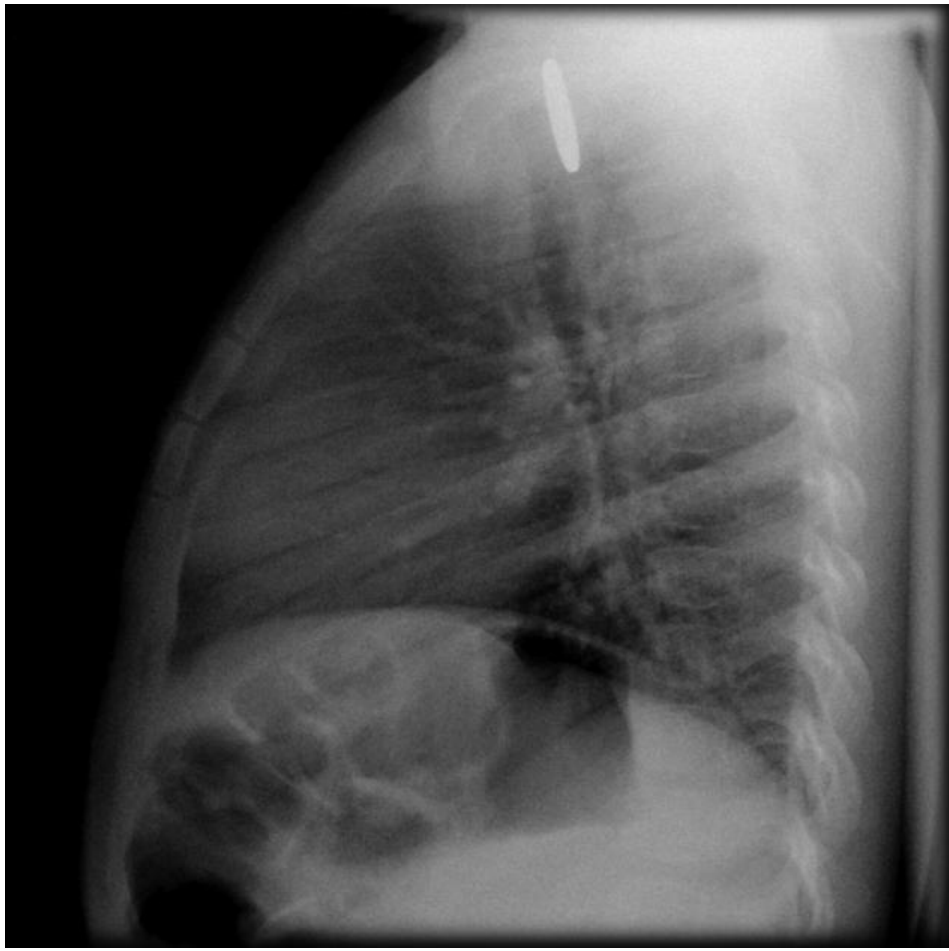
Intraperitoneal Air Red arrows



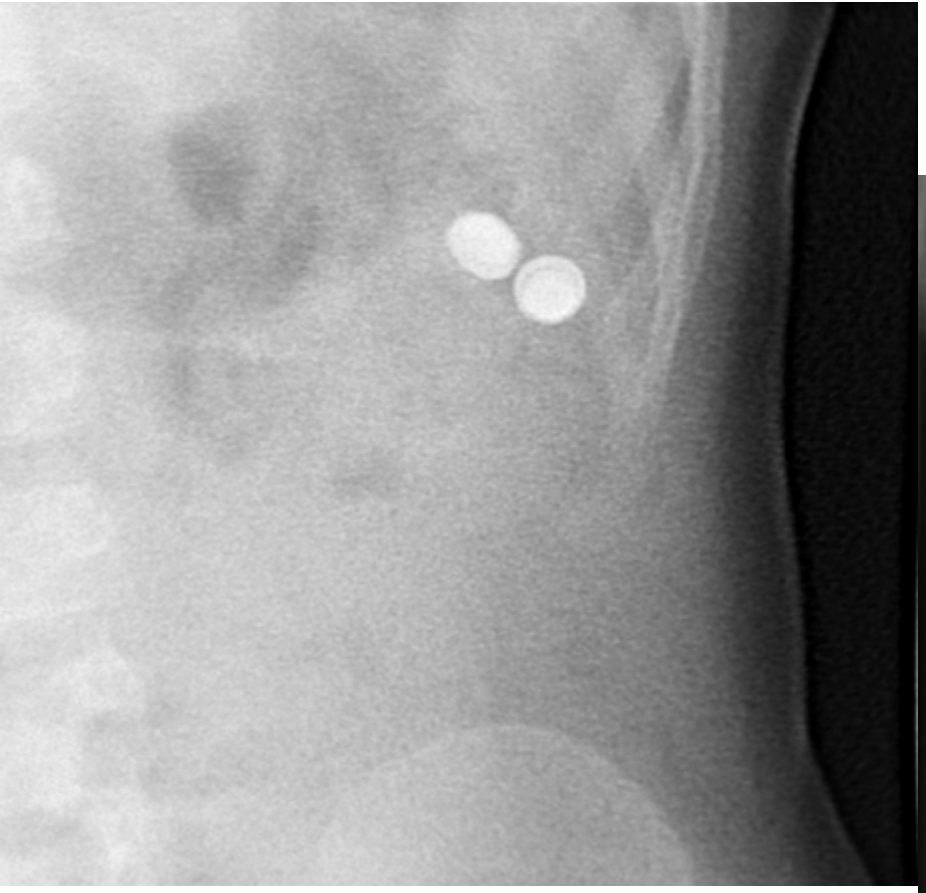
Case

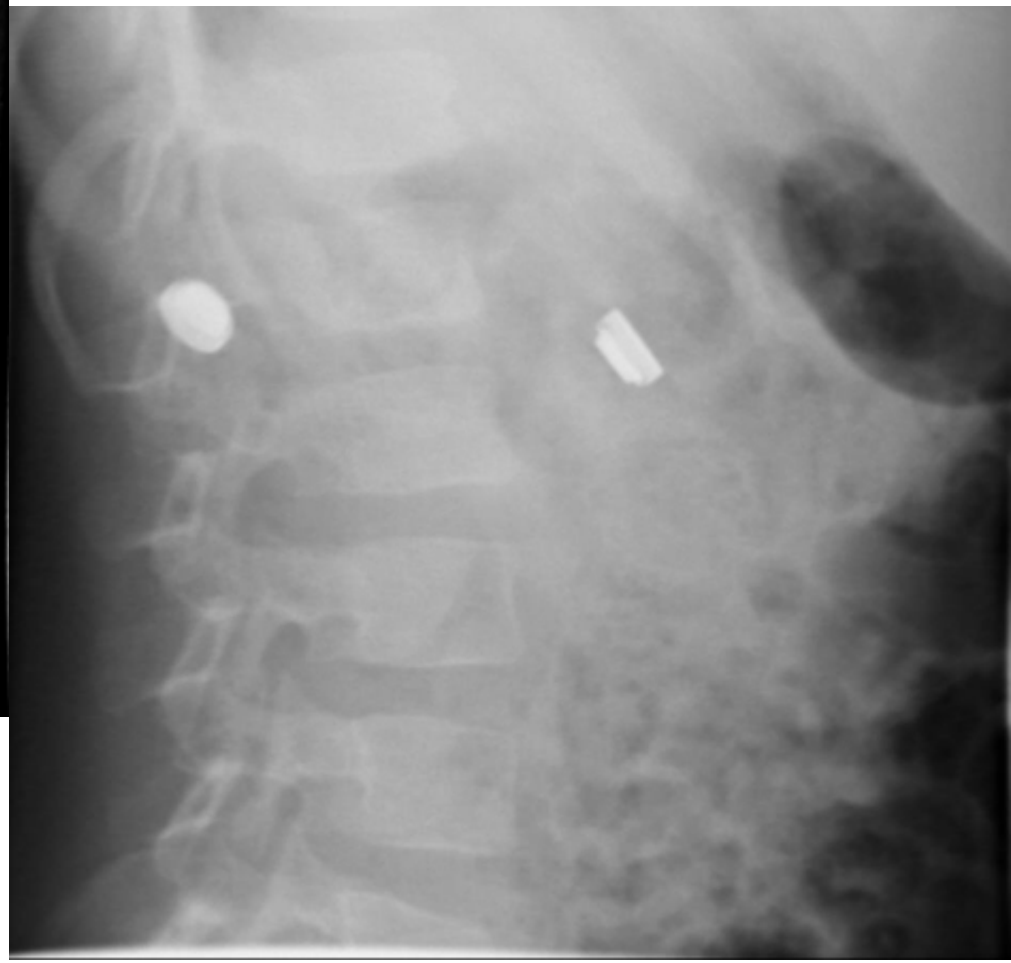
Foreign body in upper esophagus , need to repeat study in 24 hrs if still in same position go invasive (remove) this is only one part of the foreign body series which should cover the area from nose to rectum



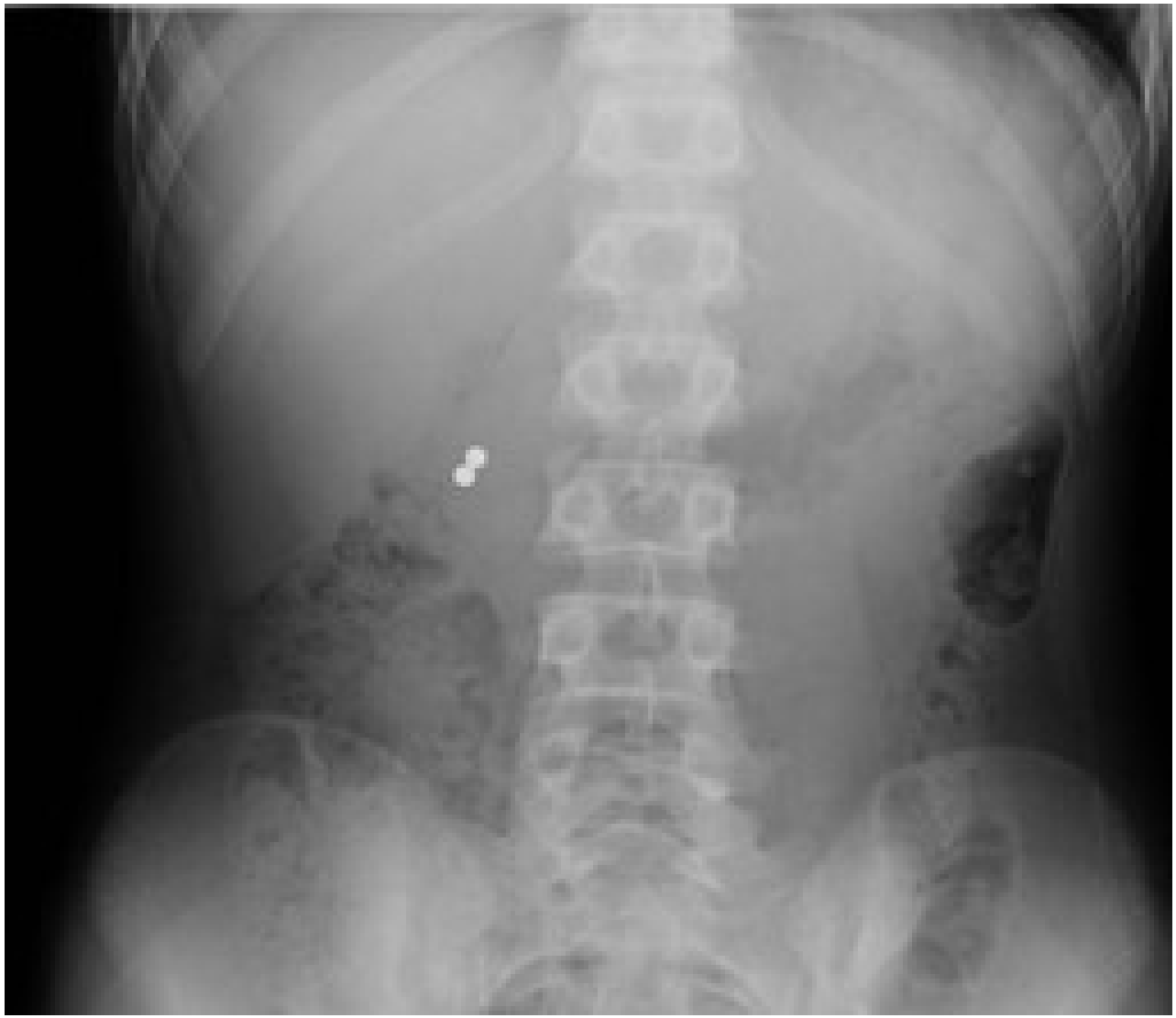


This is how foreign body looks like in the esophagus, while in the trachea will look the opposite to that (like this lateral x-ray in frontal projection and like this frontal x-ray in the lateral projection

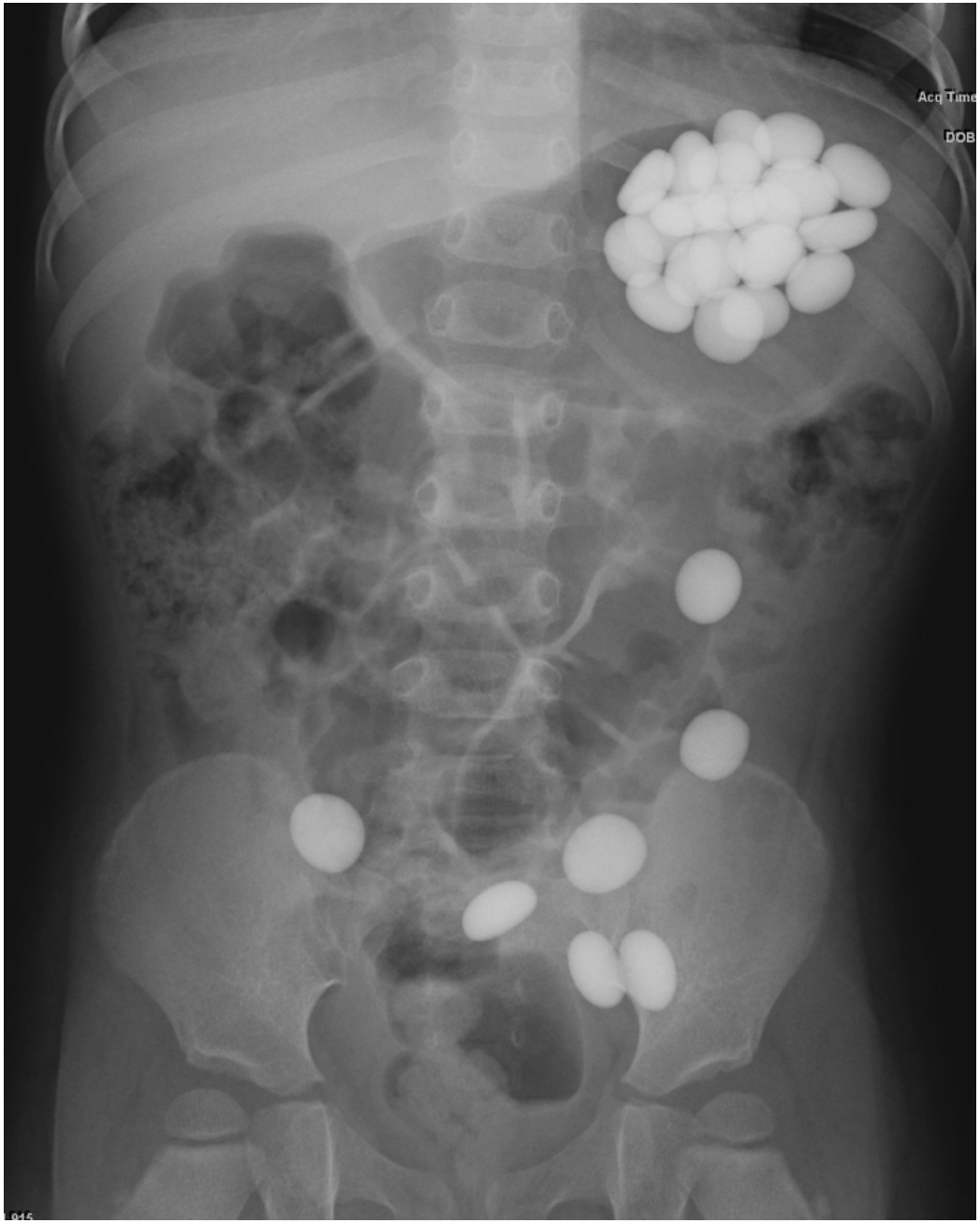




Battery ingestion should be recognized as it contains chemicals that will be expelled and cause problems



Multiple magnets ingestion we should do serial f/u x-rays until they are out because of the risk of attraction and fistula formation ** one magnet won't hurt!**



And always remember kids can ingest anything as shown here multiple stones ingestion!!!