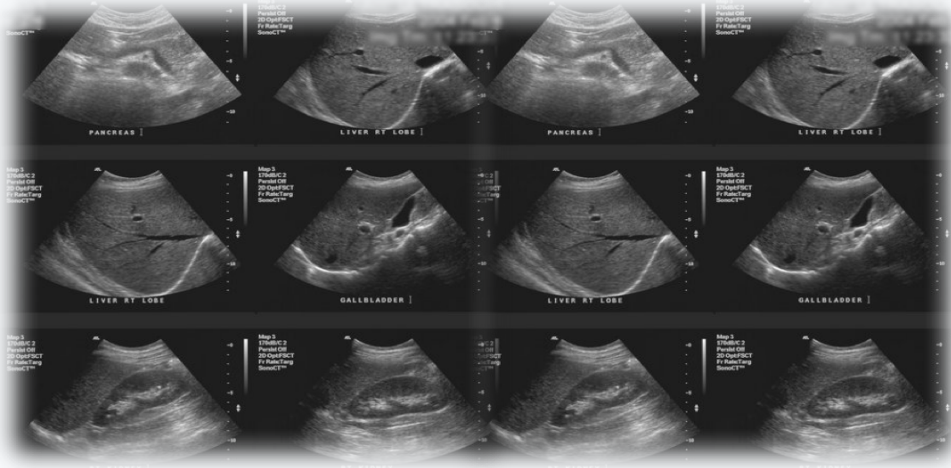




Gastrointestinal tract Block



Radiology of gastrointestinal tract Practical

Objectives

To know the radiological anatomy of the gastrointestinal tract.

Color codes

Doctor notes Important! Extra

Done by

Mohammad Alduayj, Hanin Bashaikh,
Wejdan Alzaid.

Contact us

 @Radiology436  Radiology436@gmail.com

Lecture 1: Radiology of esophagus & stomach

Introduction

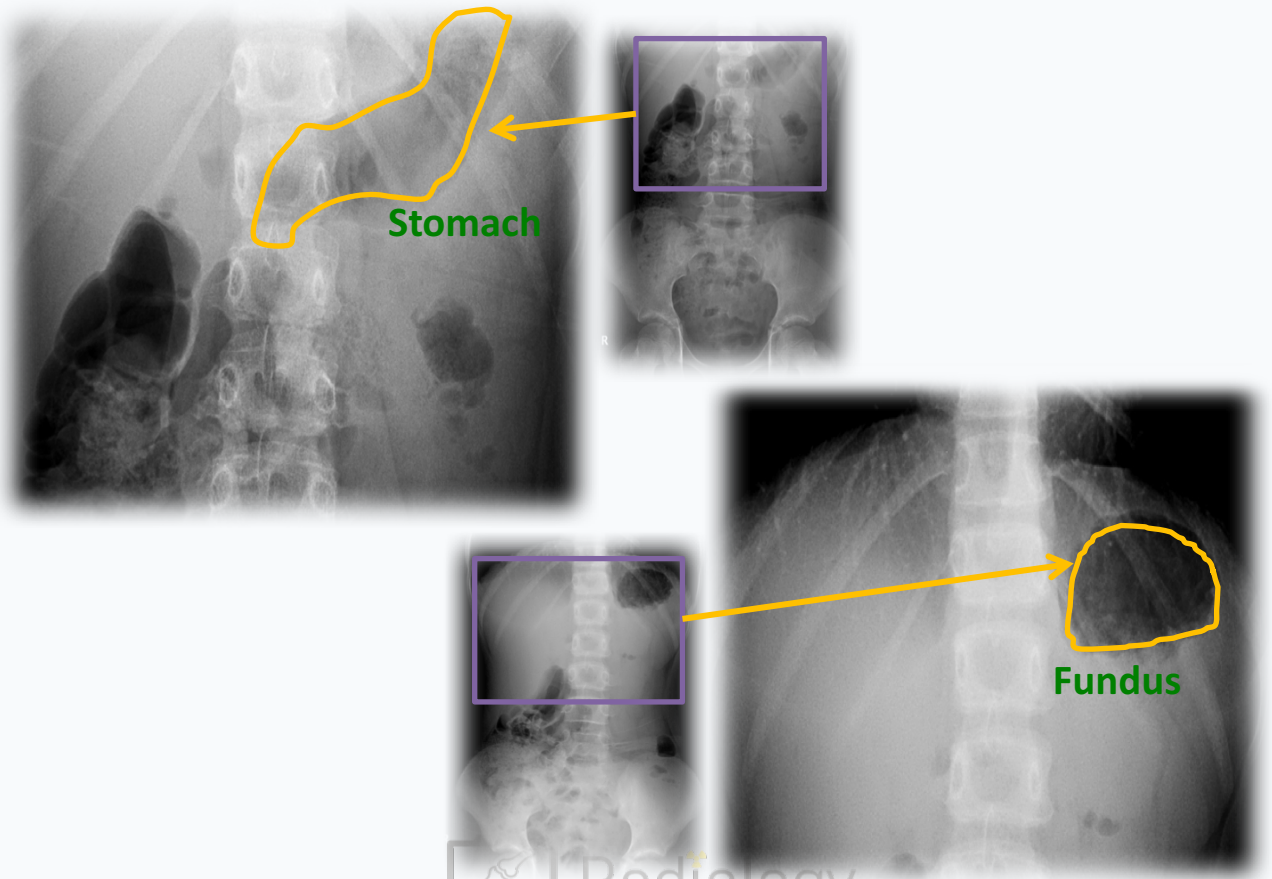
What are the modalities can be used in imaging the esophagus?

- A. CT scan*
- B. MRI**
- C. Fluoroscopy*
- D. US
- E. X-ray*
- F. Nuclear medicine

Answers:

E
C
A

X-ray

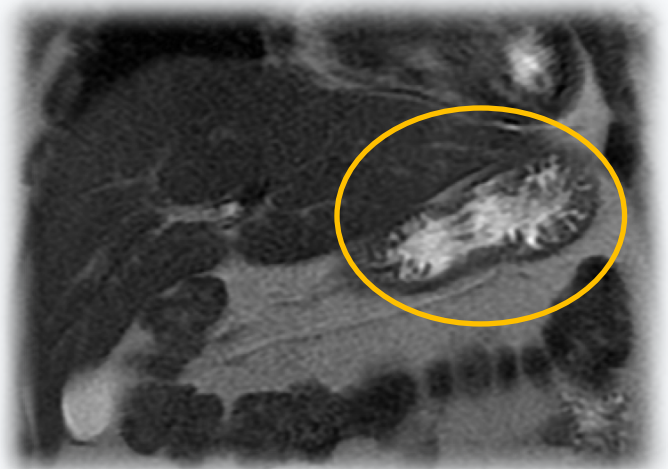


The anatomy here is important. * Are the modalities used for esophagus.
** for the bowel loops

CT vs MRI

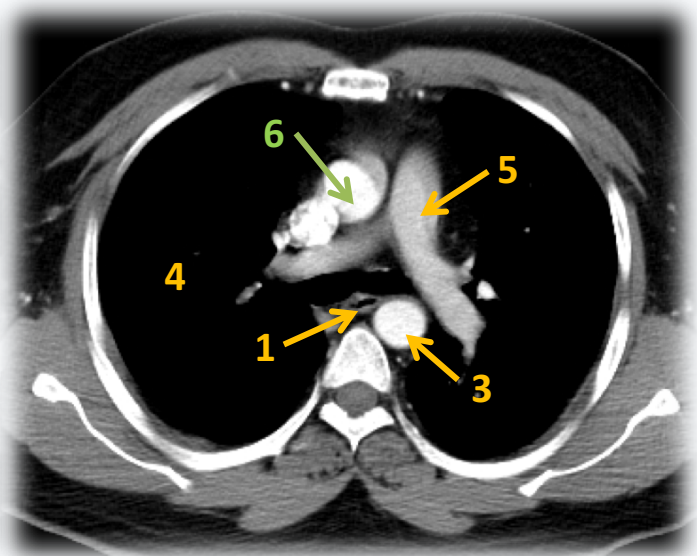
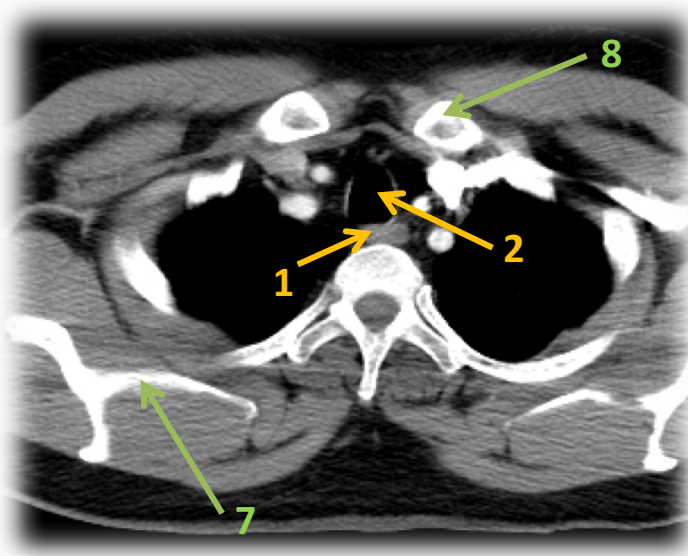


CT Scan



MRI

CT scan



1. Esophagus*

2. Trachea.

3. Aorta.(descending)

7. Scapula.

4. Lung. (Black = Air)

5. Pulmonary artery

6. Ascending aorta**

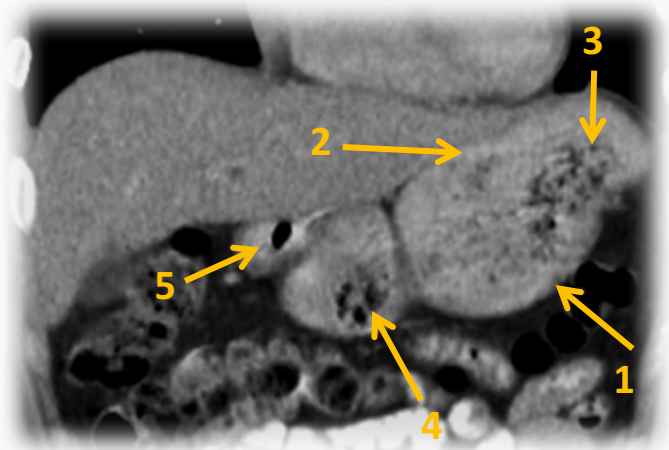
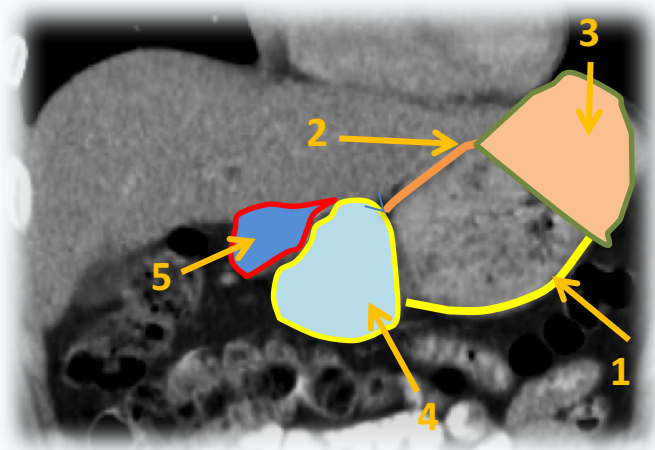
8. Clavicle.

* Esophagus is a tubular tube behind the trachea either full of air (Right picture), or collapsed (left picture).

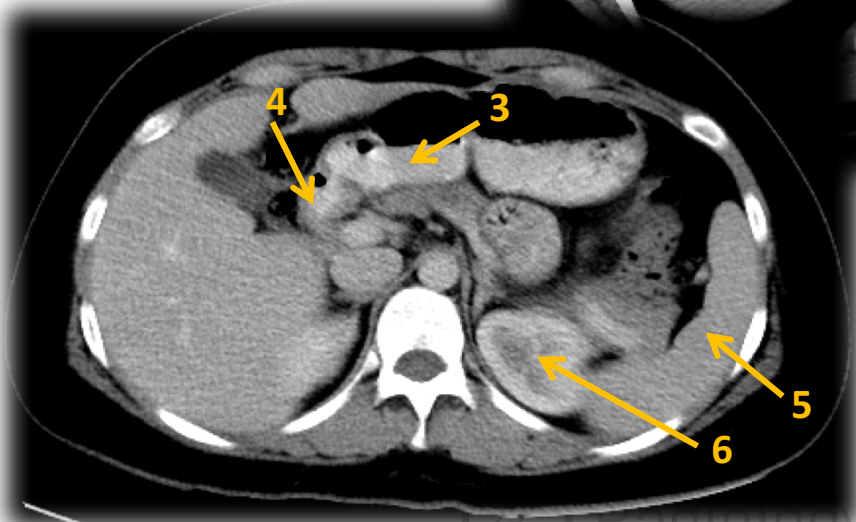
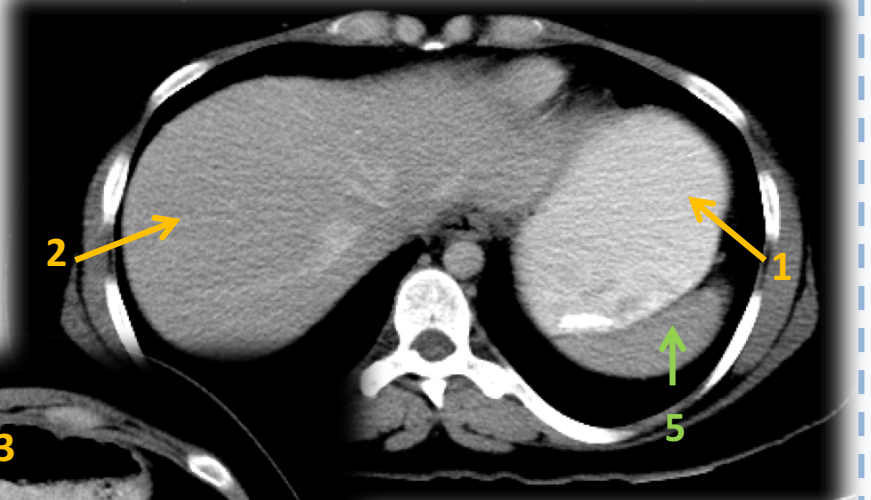
** the Aorta is white because of the IV contrast .



CT Scan

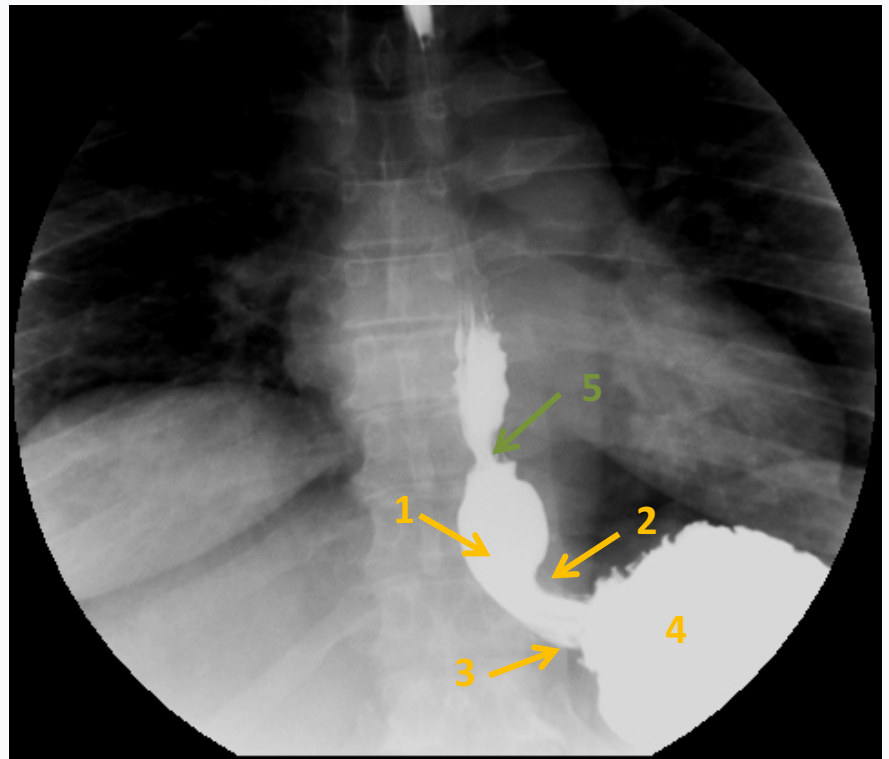
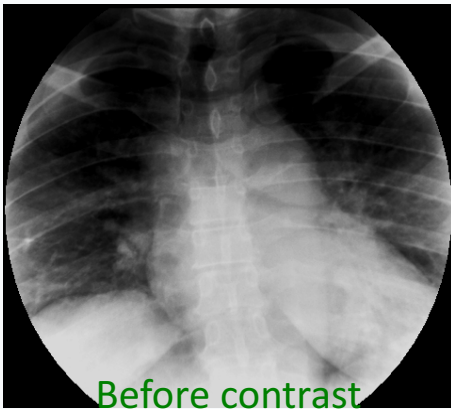


1. Greater curvature.
2. Lesser curvature.
3. Stomach fundus.
4. Antrum.
5. Pylorus.



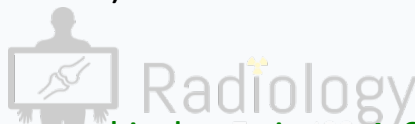
1. Stomach.
2. Liver.
3. Antrum.
4. Pylorus.
5. Spleen.
6. Kidney.

Fluoroscopy Barium swallow fluoroscopy



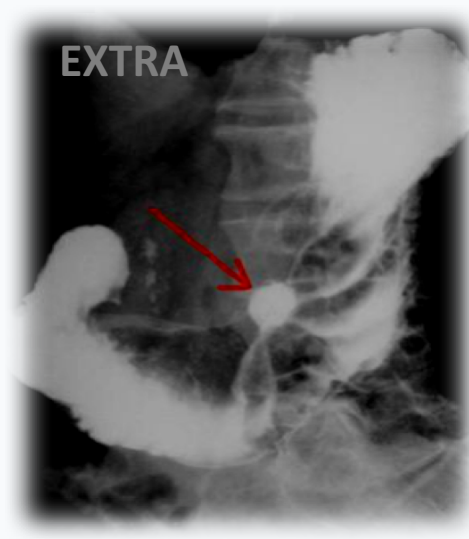
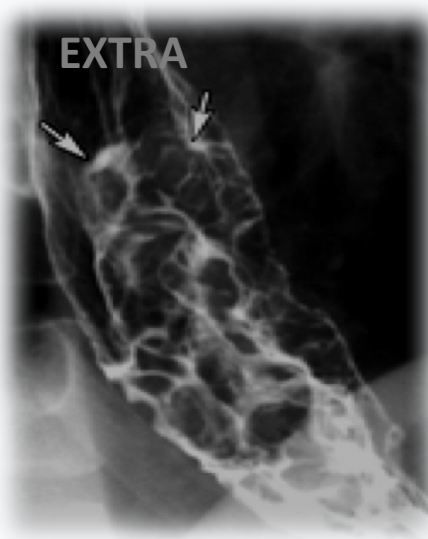
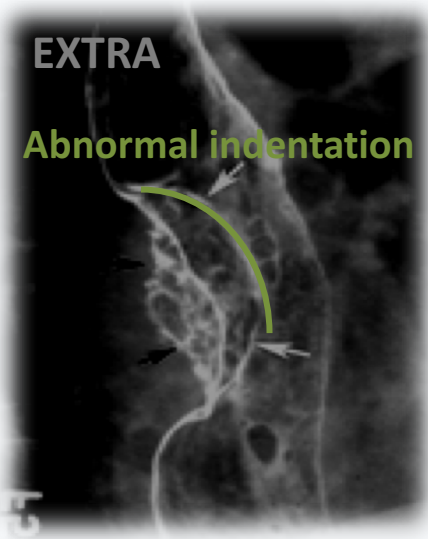
Here we take a scout image then we give the patient an oral contrast then we image every single motion.

1. Esophageal vestibule (ampulla).
2. B ring.*
3. Gastroesophageal junction.
4. Stomach (gastric fundus).
5. A ring.*



*We have normal and abnormal indentations. A & B rings are normal indentations that are curves toward the esophagus caused by another structure forcing the wall toward the lumen.

Fluoroscopy

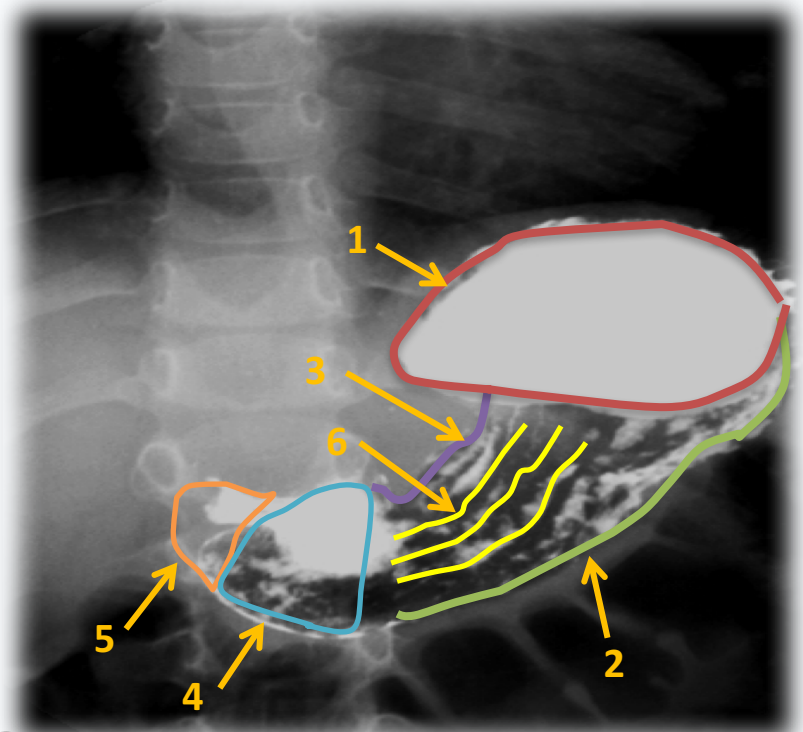


Abnormal esophagus (masses)*

Gastric ulcer

**** EXTREMELY IMPORTANT**

- 1-Stomach fundus.
- 2-Greater curvature.
- 3-Lesser curvature.
- 4-Antrum.
- 5-Pylorus.
- 6-Mucosal folds.



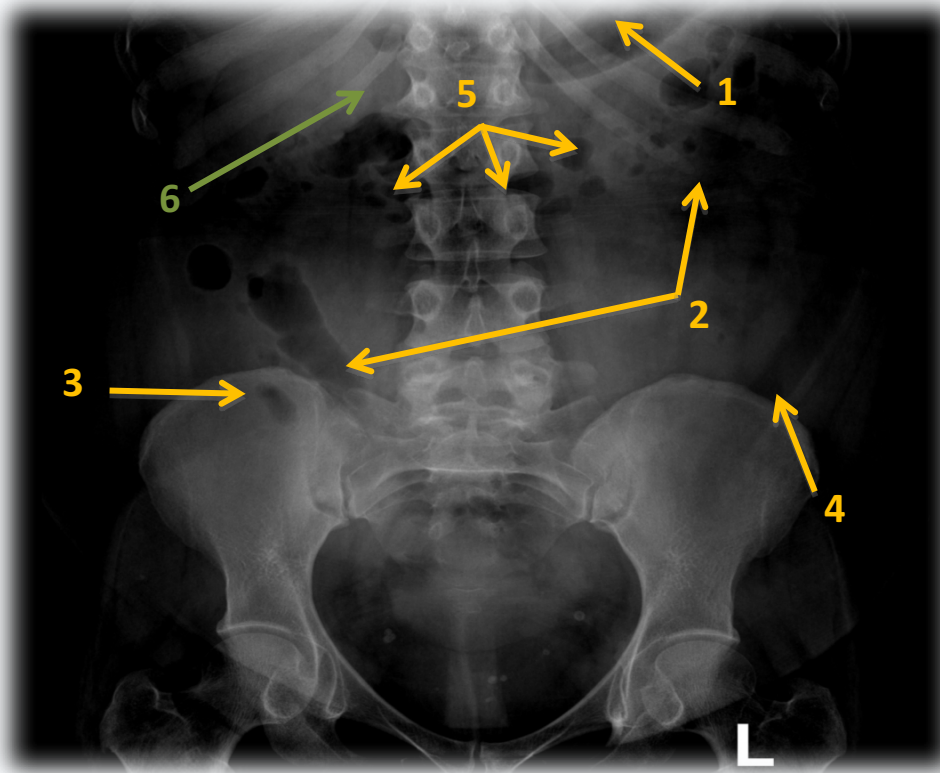
Radiology

* We see abnormal indentation caused by multiple masses.

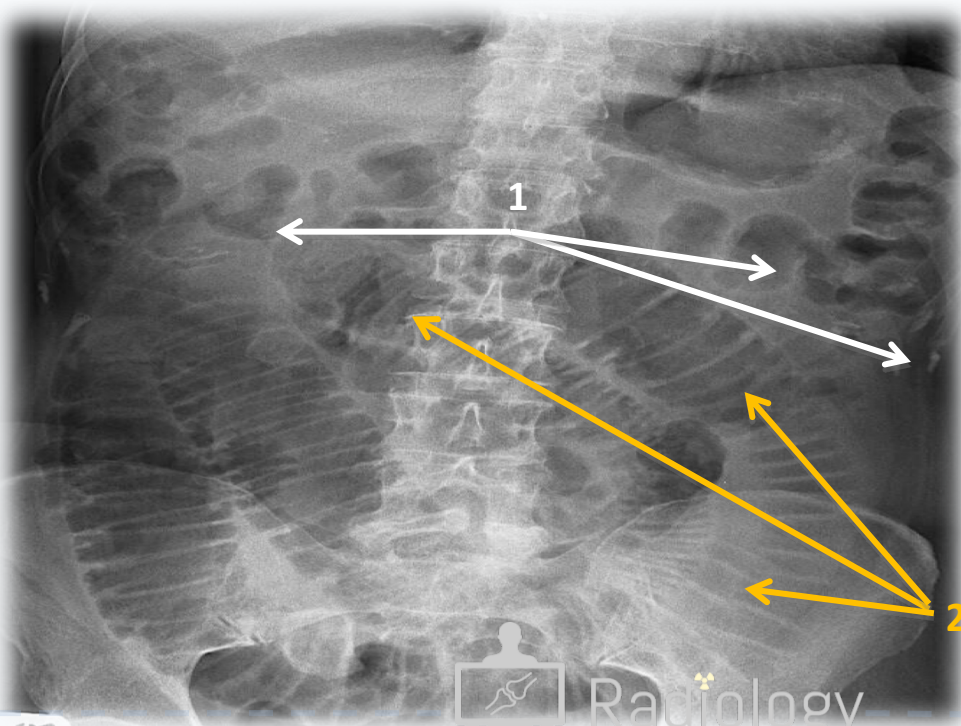
** the anatomy of the stomach, large and small bowel are more important than the anatomy of the esophagus.

Lecture 2: Radiological anatomy of small & large bowel

IMPORTANT!!



1. Stomach.
2. Small bowel.
3. Cecum.
4. Descending colon.
5. Transvers colon.
6. Duodenum.



Where is the **small** bowel and where is the **large** bowel ?

1. Large bowel*.
2. Small bowel**.

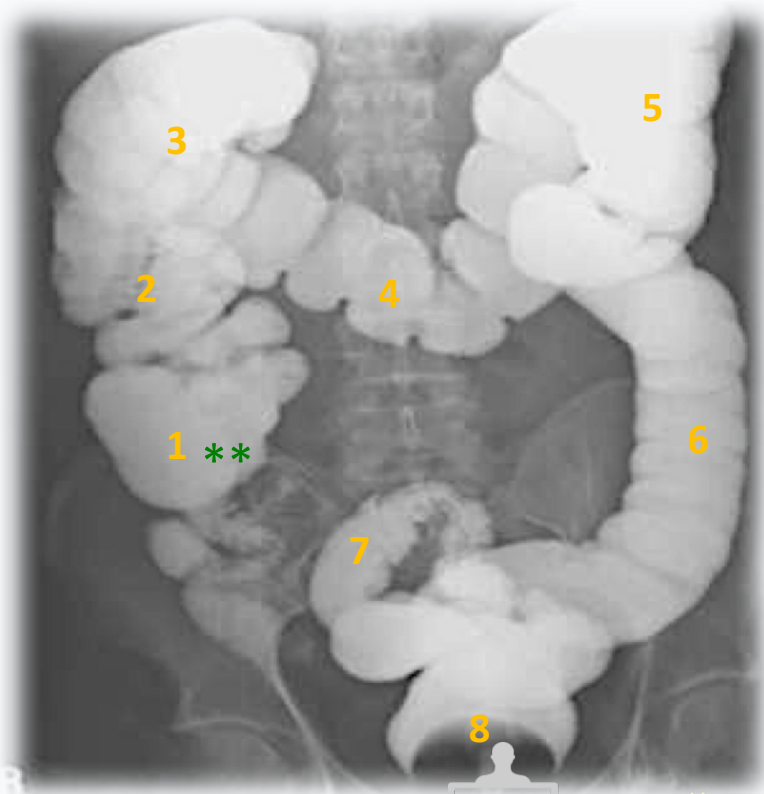
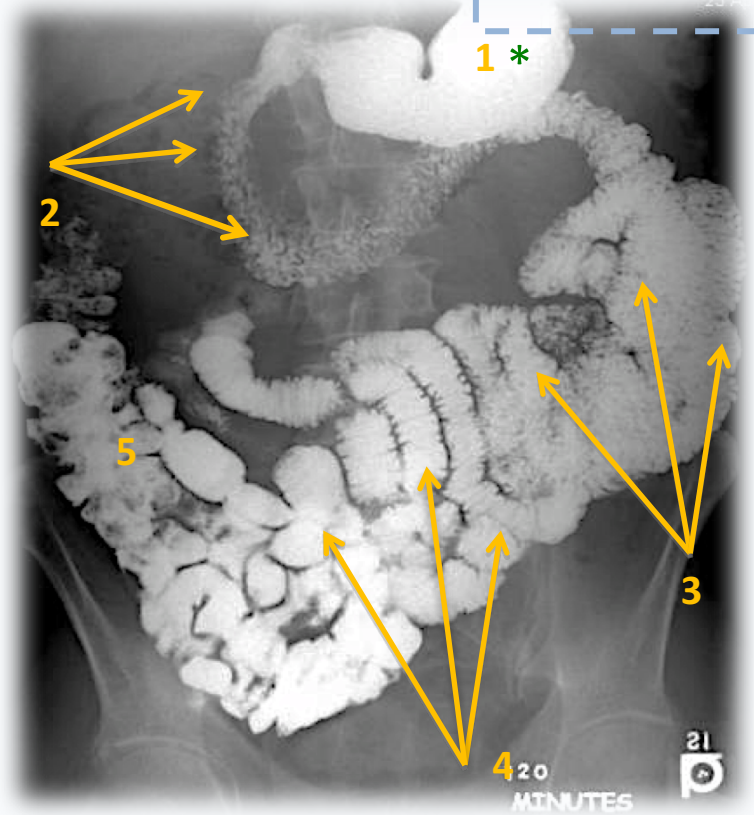
* Always in the margins.

** Always in the center.

The modality in both pictures is x-ray.



1. Stomach.
2. Duodenum.
3. Jejunum.
4. Ileum.
5. Cecum.



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

Modalities: First picture: Barium follow through. * This is a an X-ray + oral contrast (barium follow through fluoroscopy).

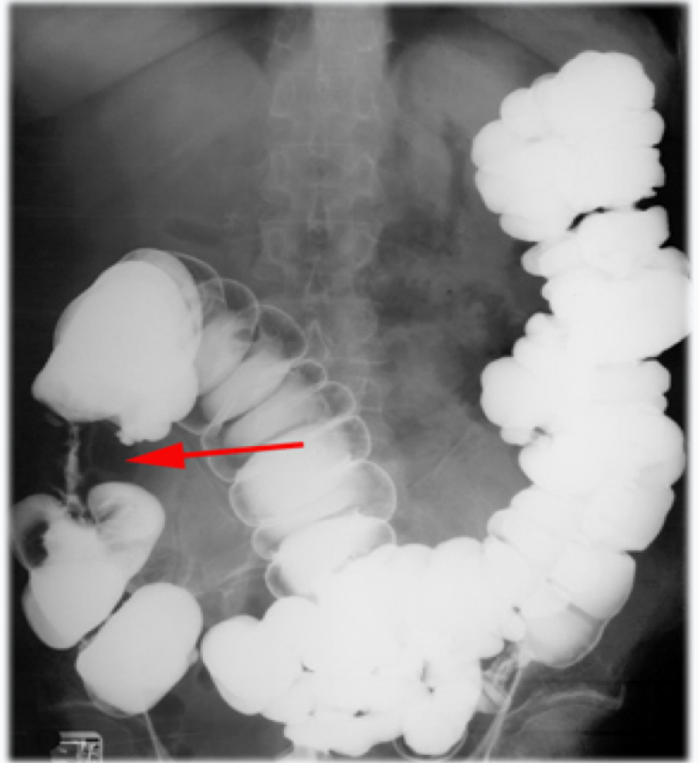
** Second picture: Barium enema.

Abnormal study

Colon Cancer (apple core sign)



Fluoroscopy: X-ray + oral contrast (barium enema).



Normal



Abnormal

* Double contrast (because there is air and contrast).

** Loss of haustration, narrowing of the lumen seen in (ulcerative colitis).

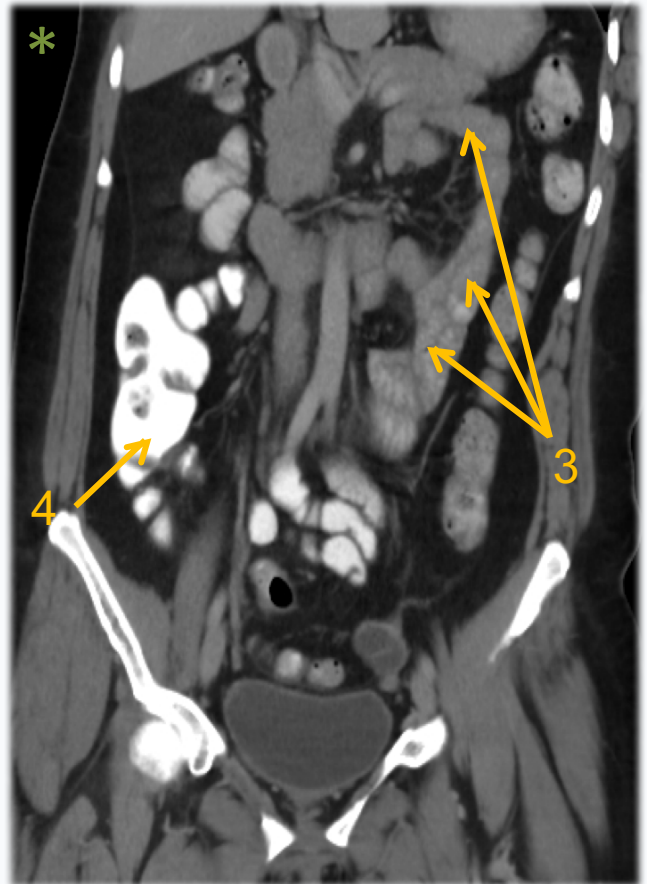
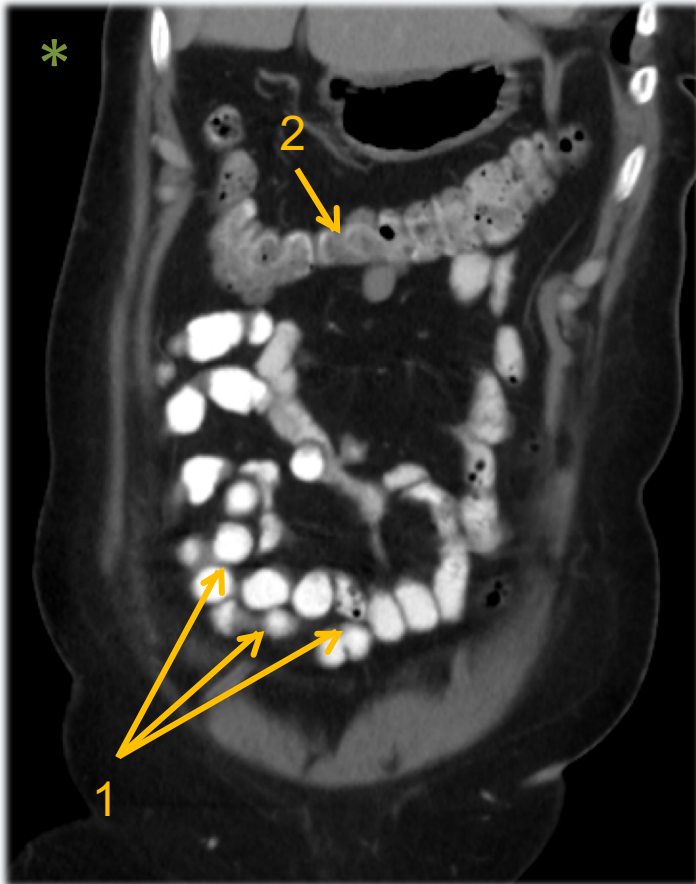
-In Crohn's disease will see areas of narrowing (skiping lesion or stricture) that does not affect all of the colon but parts of it (especially the ileocecal junction).

Abnormal study

EXTRA

Ulcerative colitis

Feature-less colon (lead pipe appearance)



1. Ileum.

2. Transverse colon.

3. Jejunum (left side).

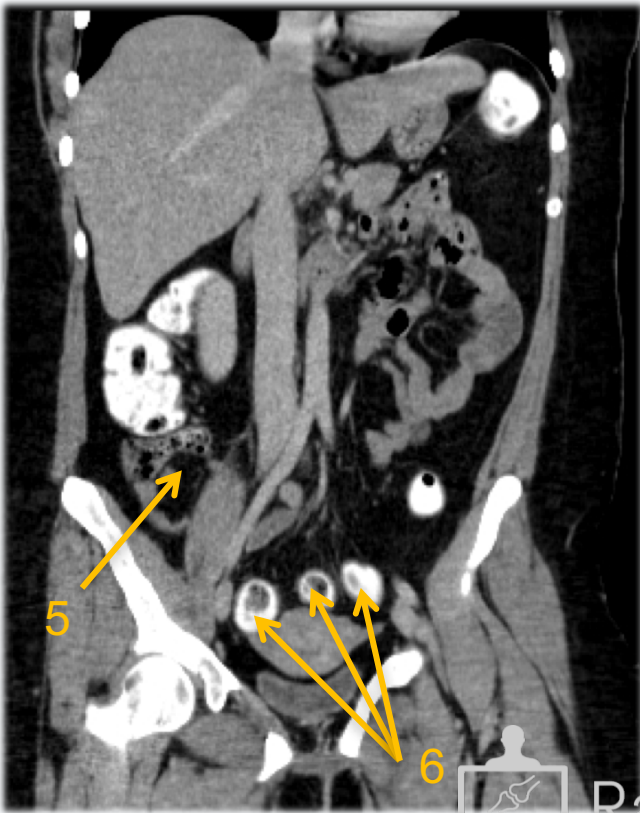
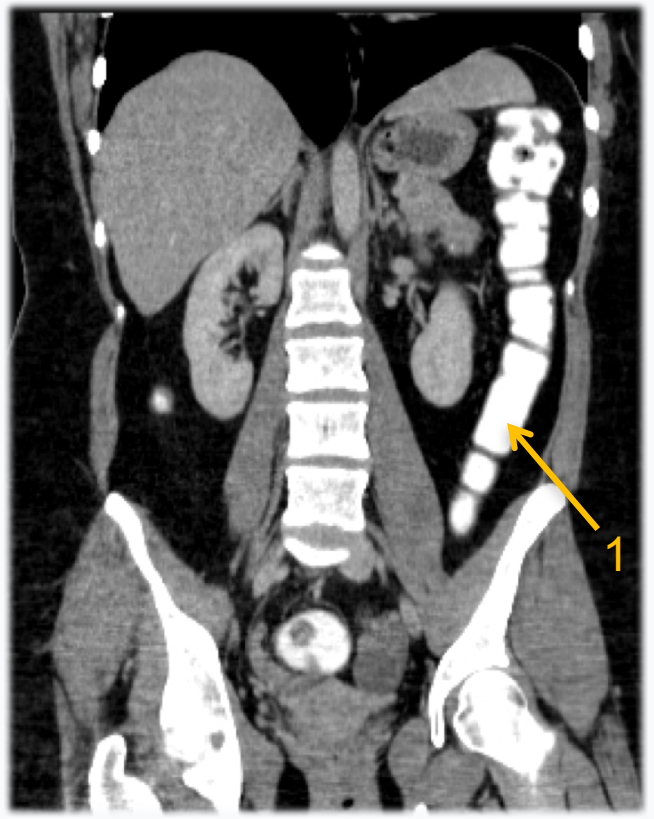
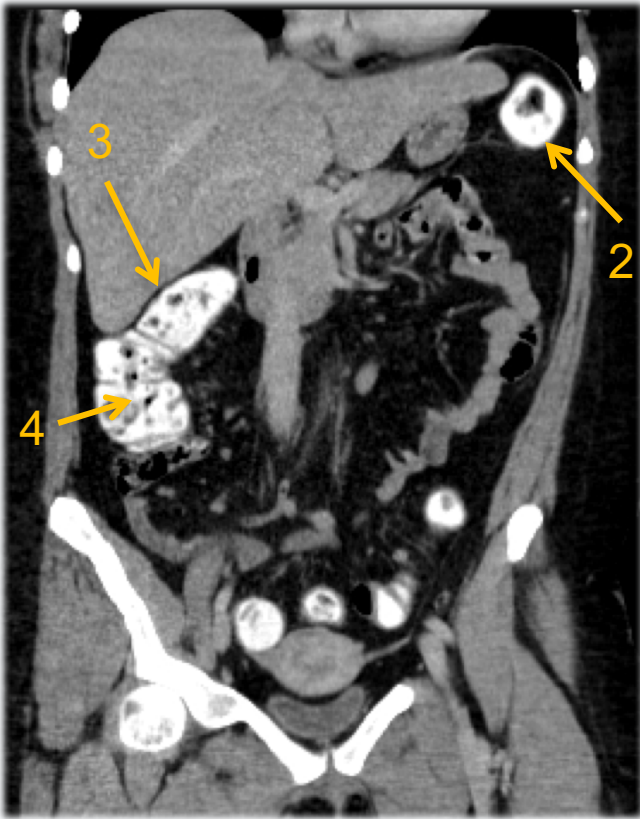
4. Cecum.

*CT with contrast.



Radiology

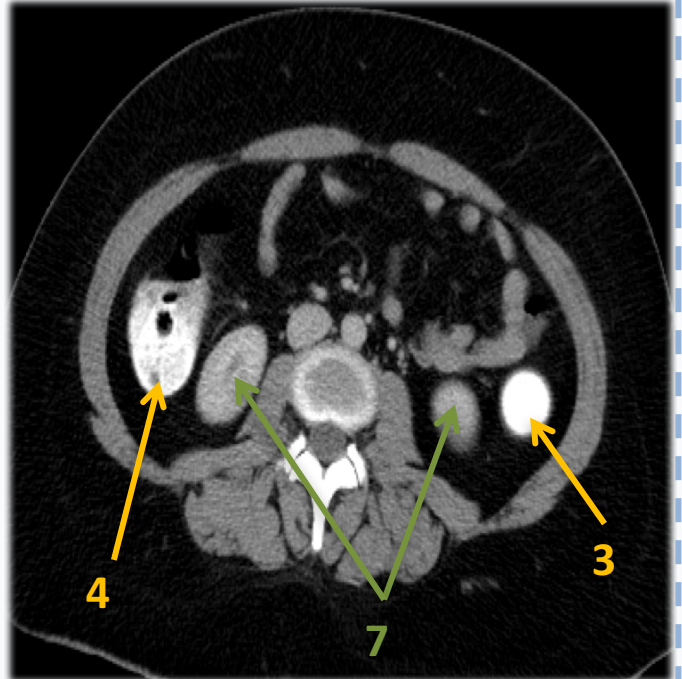
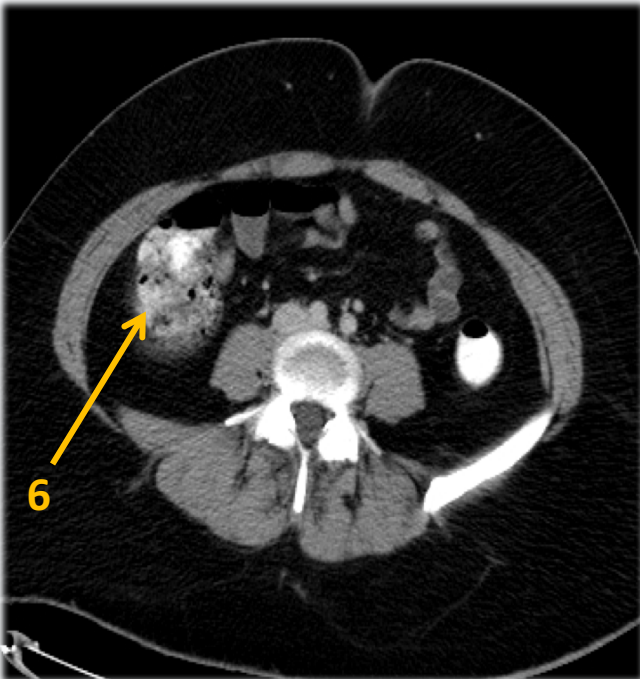
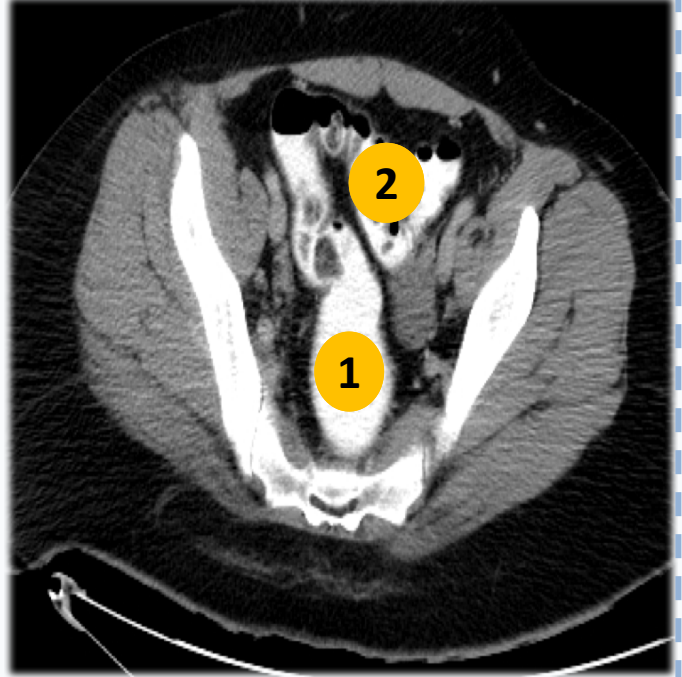
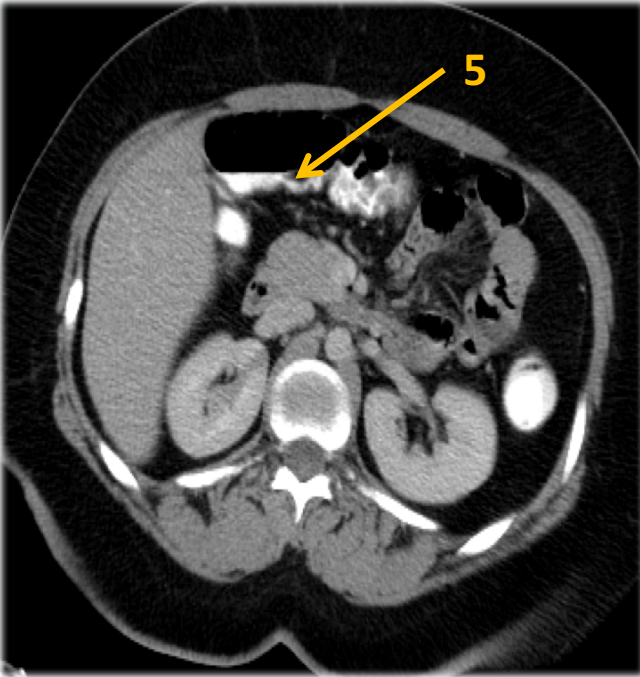
Team 435



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

The contrast is only in the large bowel.





- | | |
|----------------------|----------------------|
| 1. Rectum. | 4. Ascending colon. |
| 2. Sigmoid colon. | 5. Transverse colon. |
| 3. Descending colon. | 6. Cecum.* |
| | 7. Kidneys. |

* If you write cecum or ascending colon they are both right because it depends on the level of the image.

Lecture 3: Ultrasound of liver, spleen, pancreas & biliary system

Introduction

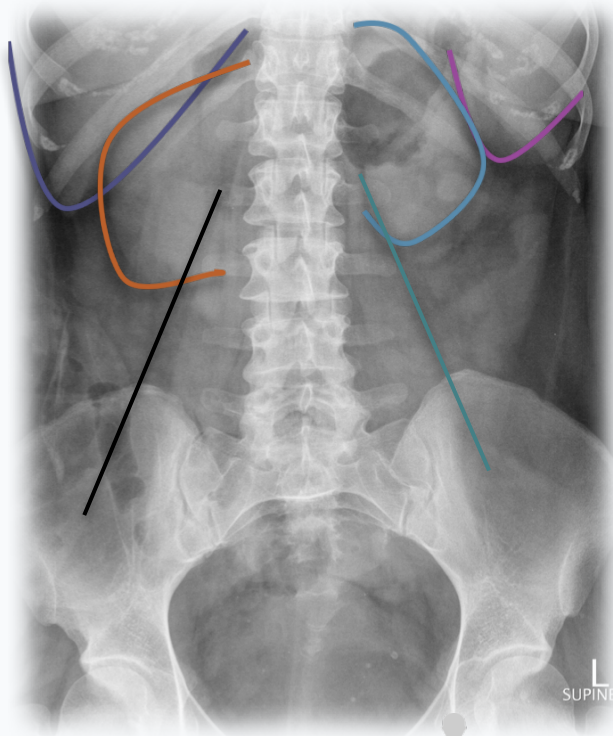
What are the radiology modalities that can be used to study solid abdominal organs?

- A. X-ray*.
- B. US.
- C. CT.
- D. MRI.
- E. Nuclear Medicine.

Answers:

D
C
B

X-ray



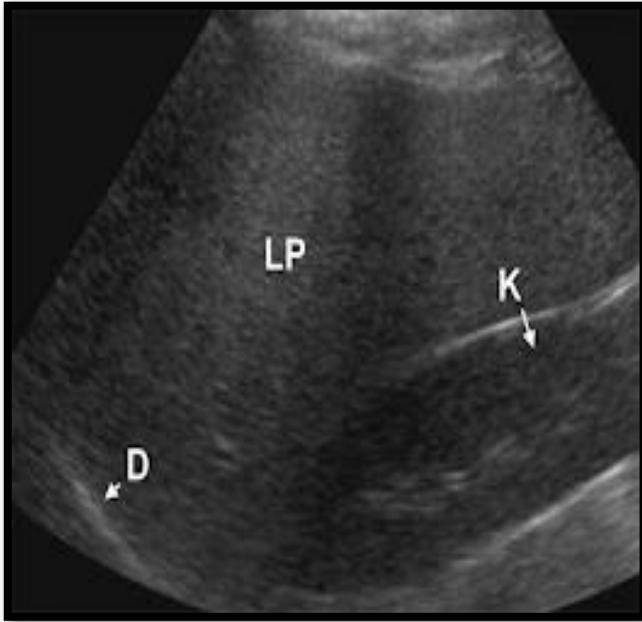
- liver
- spleen.
- Right kidney.
- Left kidney.
- Right psoas muscle.
- Left psoas muscle.

* Not very diagnostic here (only in gall bladder stones).



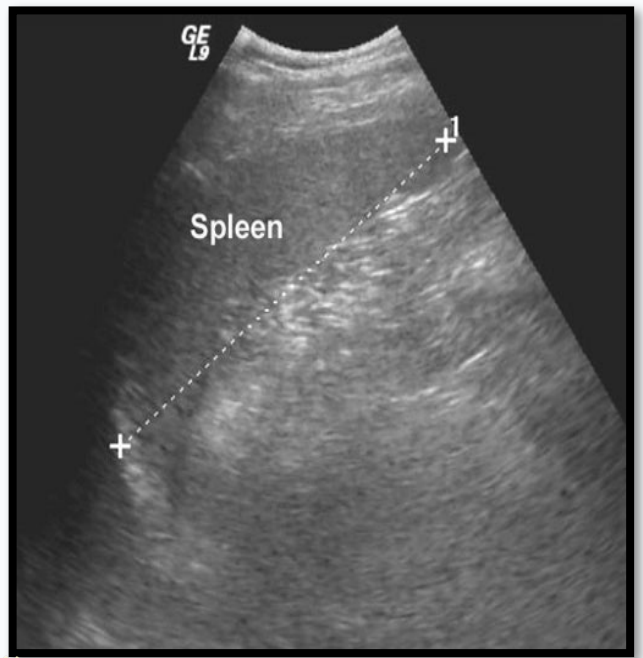
Radiology

US liver



LP- Liver parenchyma. D- Diaphragm. K- Right kidney.

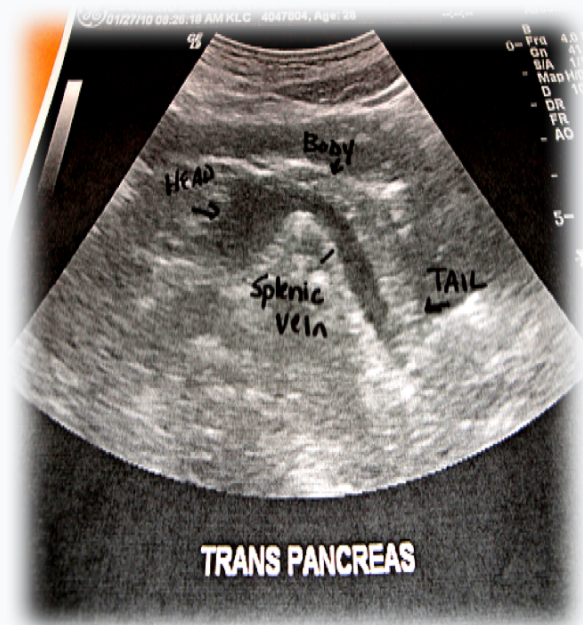
US spleen



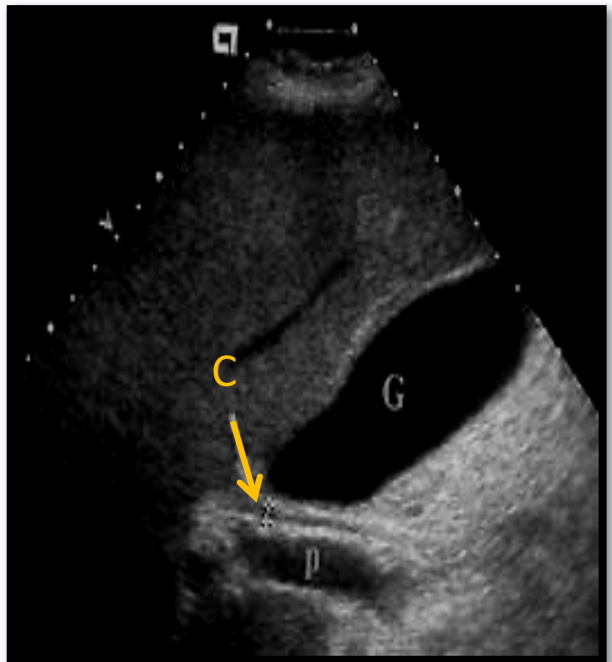
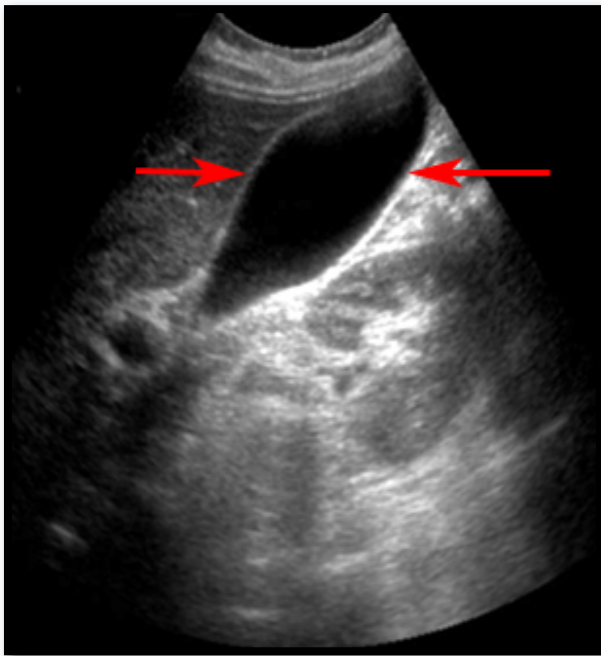
The difference between liver and spleen here is the echogenicity, the spleen has more echogenicity than the liver, another difference is the presence of the gall bladder and portal vein in the liver US.



US Pancreas



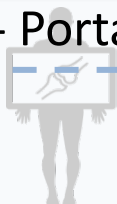
US Biliary



G- Gall bladder.

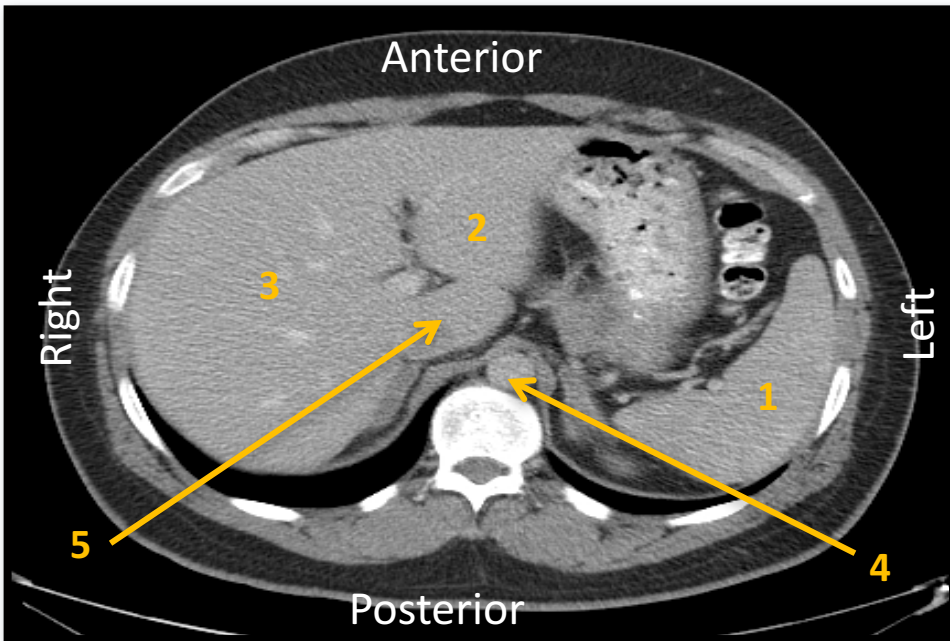
P- Portal vein.

C- Common bile duct.

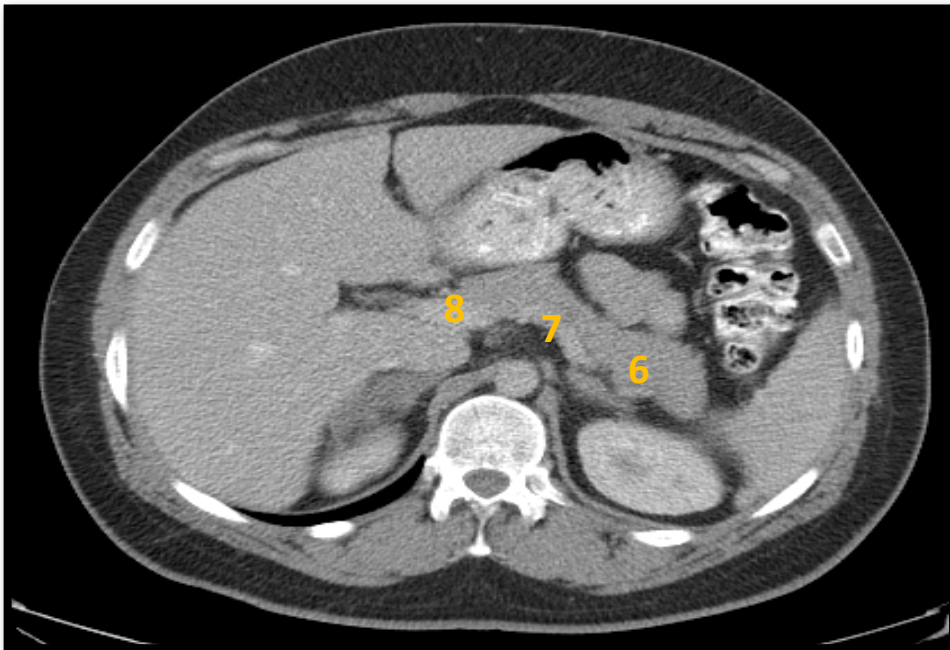


Radiology
Team 436

CT Abdomen



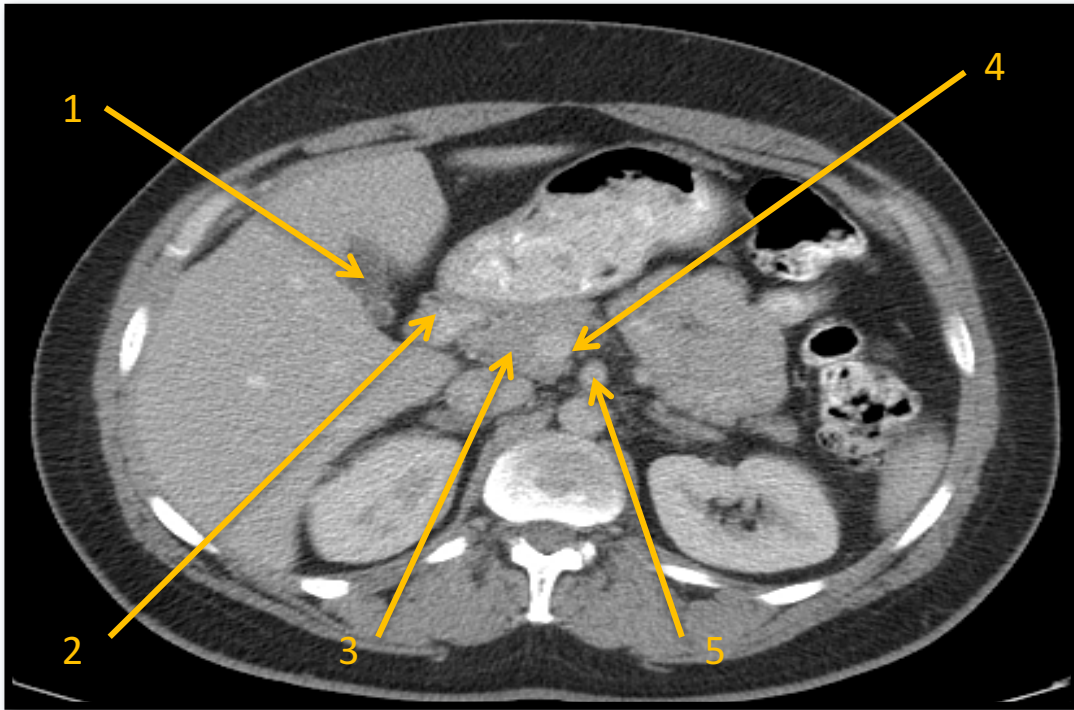
1. Spleen.
2. Left liver lobe.
3. Right liver lobe.
4. Abdominal aorta.



5. IVC.
6. Pancreatic tail.
7. Pancreatic body.
8. Pancreatic head.



CT Abdomen



- | | | |
|------------------|---------------------|-----------|
| 1. Gall bladder. | 3. Pancreatic head. | 5. SMA.** |
| 2. Duodenum. | 4. SMV.* | 6. CBD. |
| | | 7. PV.*** |

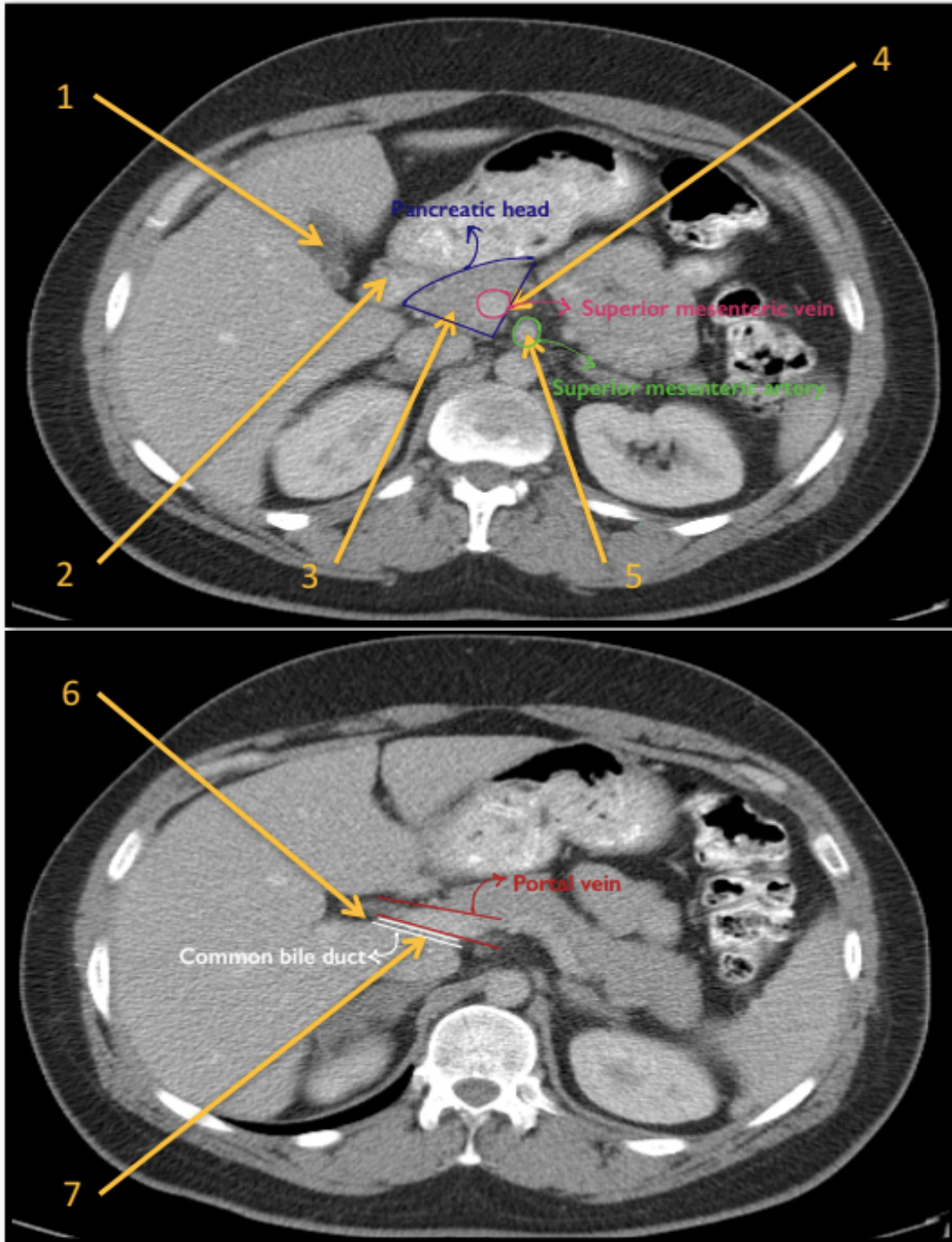
*SMV= superior mesenteric vein.

** SMA= superior mesenteric artery.

*** PV= Portal vein.

CT Abdomen (More clarification for the previous slide)

IMPORTANT!!



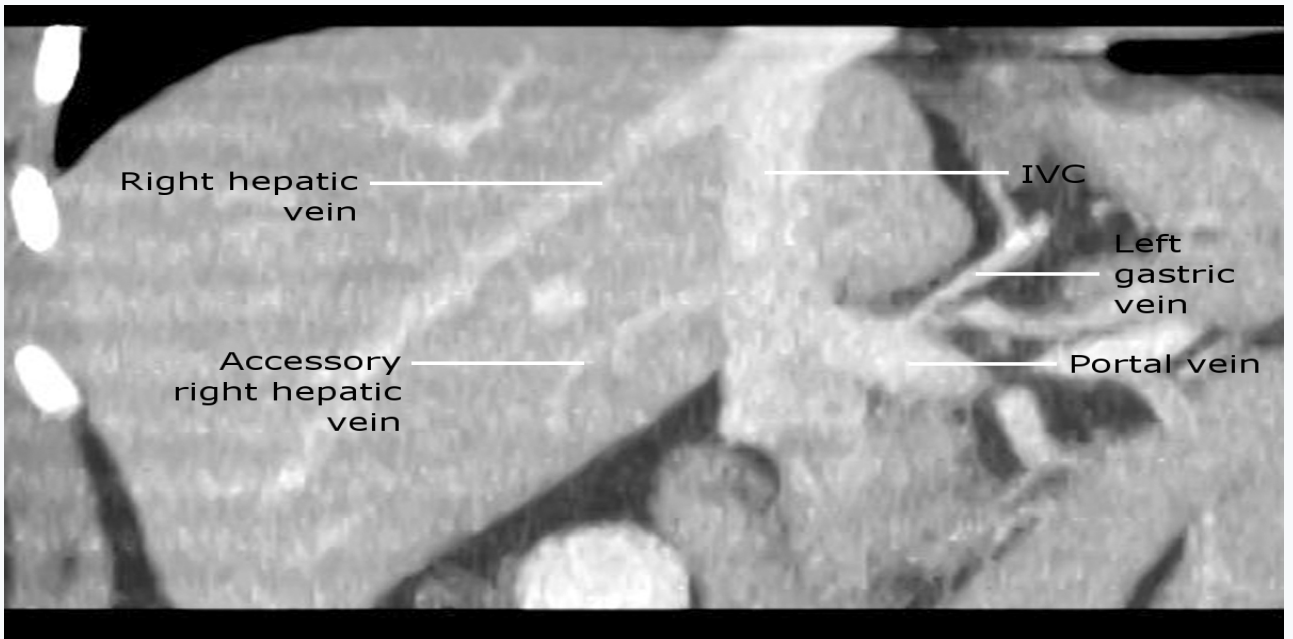
1. Gall bladder. 2. Duodenum. 3. Pancreatic head. 4. SMV.* 5. SMA.** 6. CBD.*** 7. PV.****

*SMV= superior mesenteric vein.

** SMA= superior mesenteric artery.

CBD= Common bile duct. * PV= Portal vein.

CT Liver

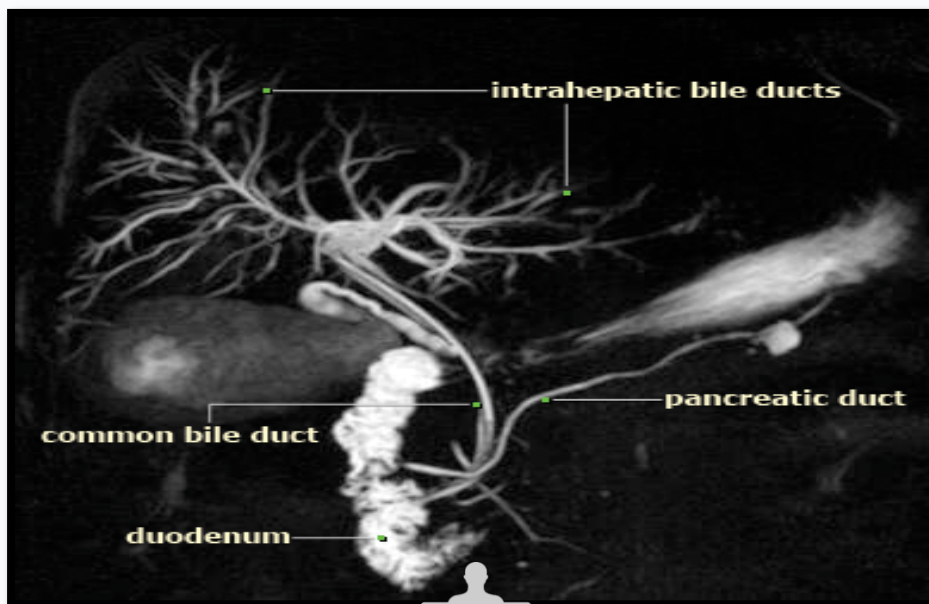


MRI Abdomen



17. Stomach 21. IVC. 30. Spleen.
1,2,4A,7,8. Liver segments.

MRCP



It is MRI with contrast: very helpful in diagnosis (to see the intrahepatic and extrahepatic ducts through induction of contrast in biliary system, especially in obstructive jaundice) and it is used for therapy.



Radiology
Team dktb

END OF GNT BLOCK!! Be Proud =)