

How to localize a lesion *or* a fluid collection in the peritoneum: an anatomical analysis on CT studies with surgical correlation



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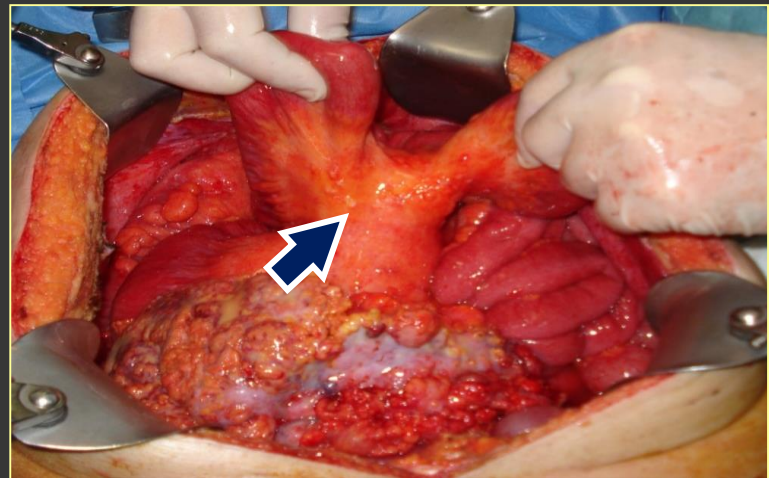
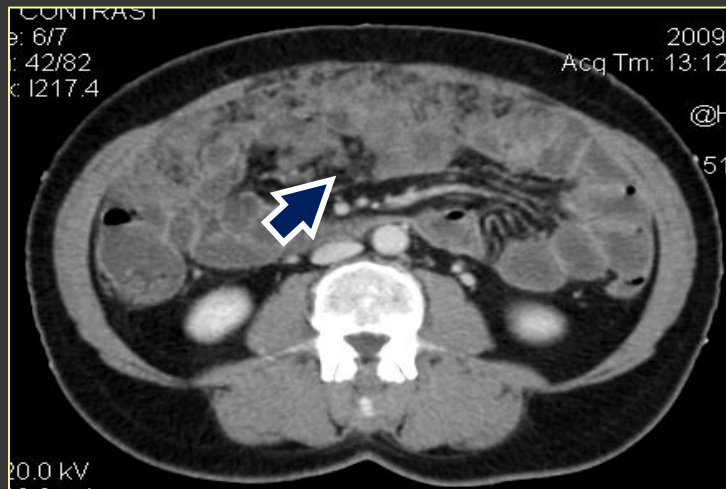
Why anatomy is important?

Anatomy **determines** the intraabdominal **distribution** of diseases

Peritoneal reflections act as **routes** for the spread of diseases (*malignancies*)
or as **boundaries** for pathologic processes (*inflammations*)

Peritoneal fluid circulation on the peritoneal surfaces **governs the intraperitoneal spread** of diseases (*carcinomatosis, inflammatory collections*)

Exact localization of a lesion is important for surgery (*cytoreductive surgery*)

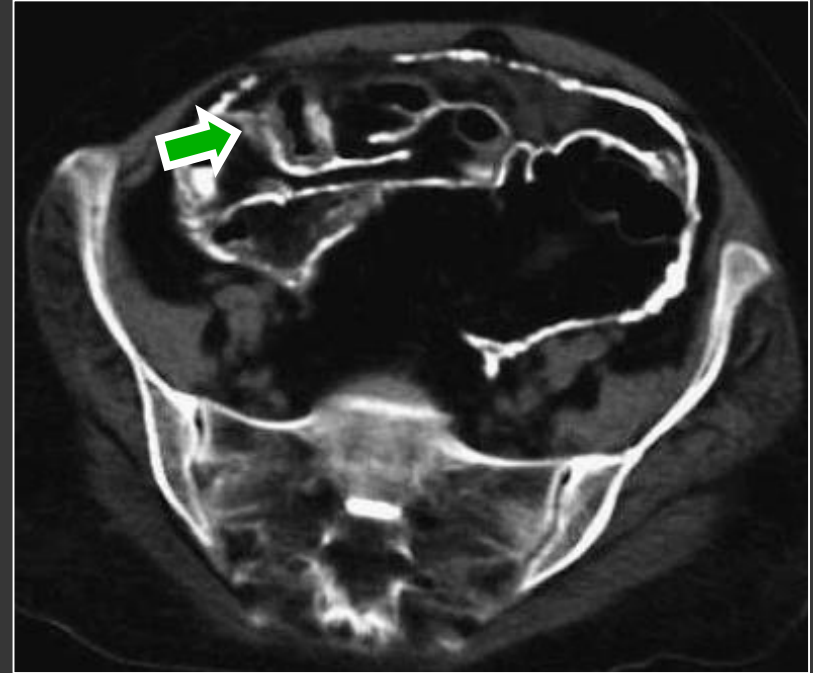


Cancerous implants in the small bowel mesentery (blue arrows)

Parietal and visceral peritoneum



→ anterior peritoneum
→ posterior peritoneum

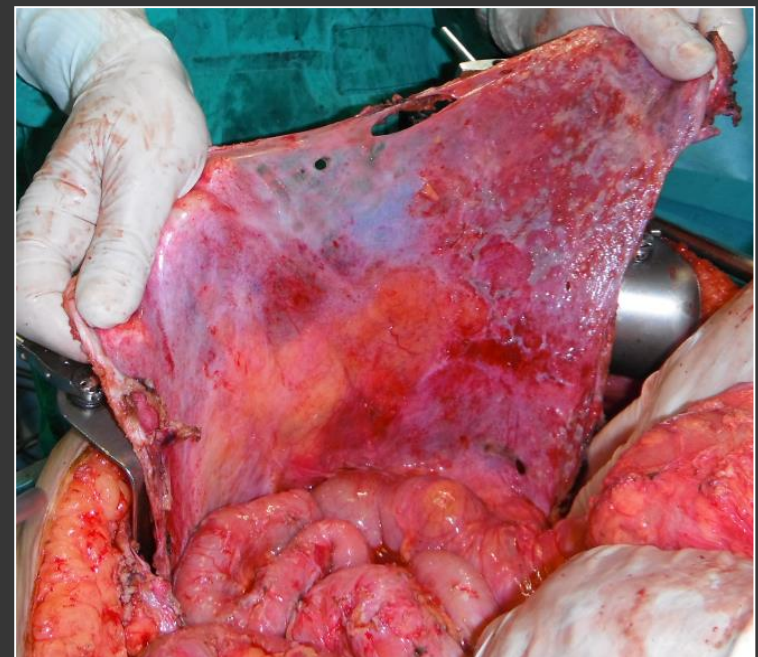


→ visceral peritoneum

Totally calcified parietal and visceral peritoneum in a patient in dialysis causing **sclerosing peritonitis**



De humanis corporis fabrica
Adrianus Spigelius (1627)

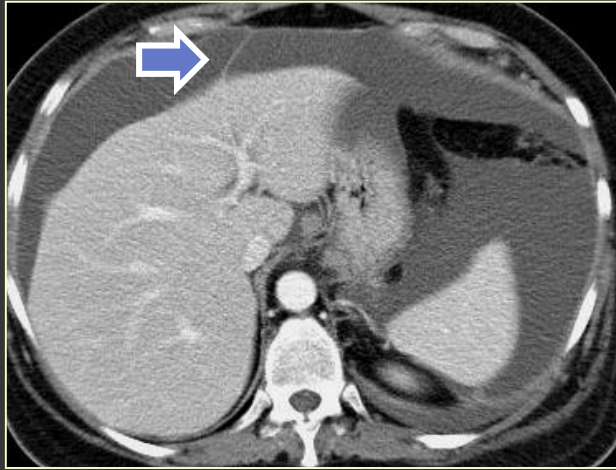


Parietal peritoneum

PERITONEAL REFLECTIONS OF THE UPPER ABDOMEN



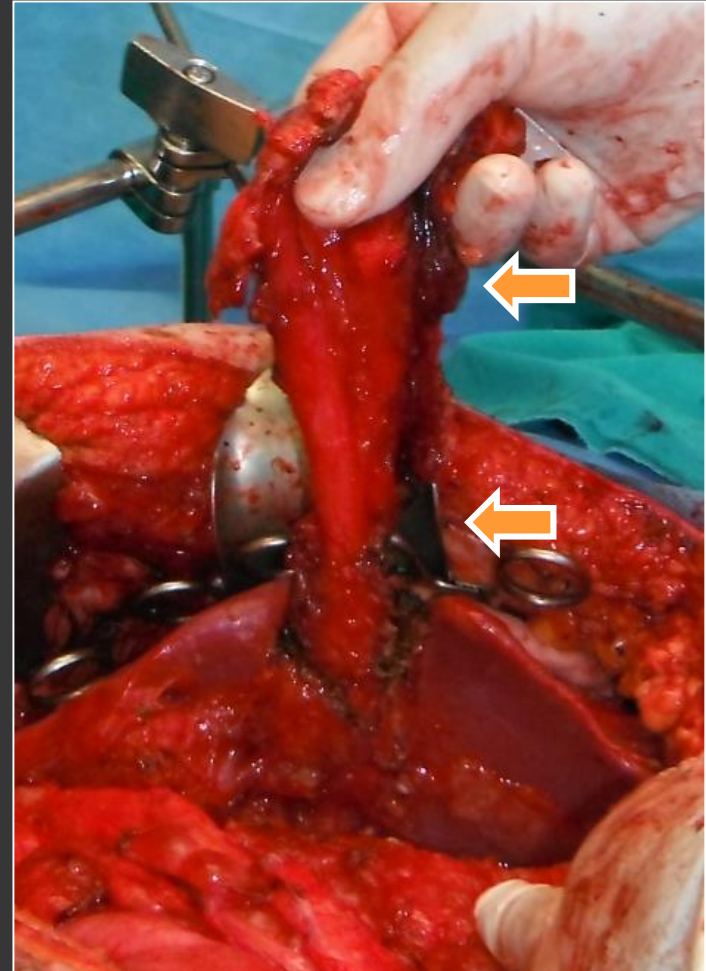
- Falciform ligament
- Coronary ligament
- Gastrohepatic ligament
- Hepatoduodenal ligament
- Phrenogastric ligament
- Gastrosplenic ligament
- Gastrocolic ligament
- Splenopancreatic ligament
- Phrenicocolic ligament
- Transverse mesocolon



Normal falciform ligament



Falciform ligament

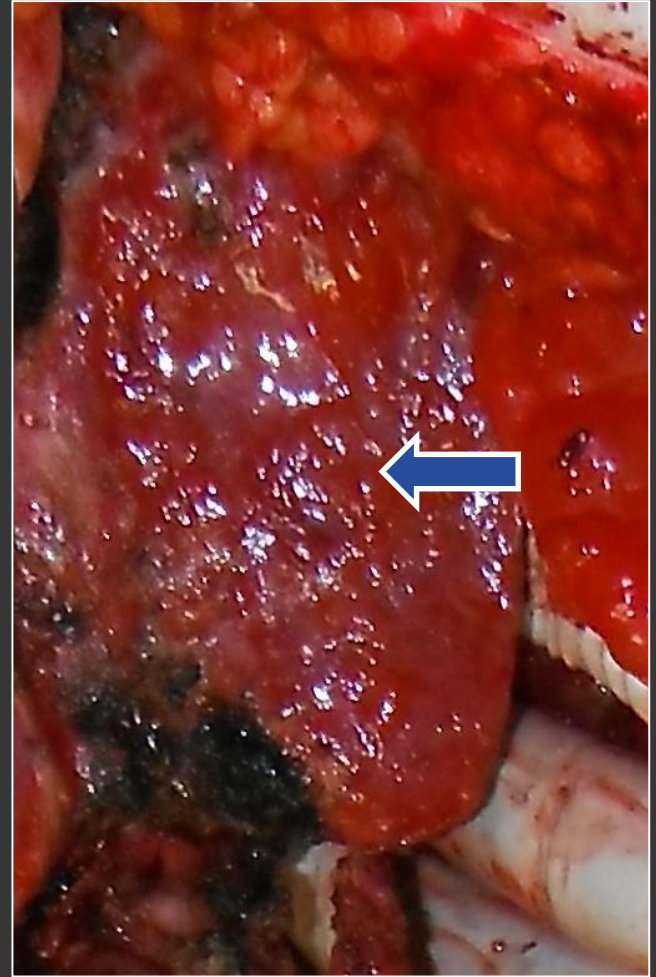


→ Cancerous implants in the falciform ligament

Falciform ligament

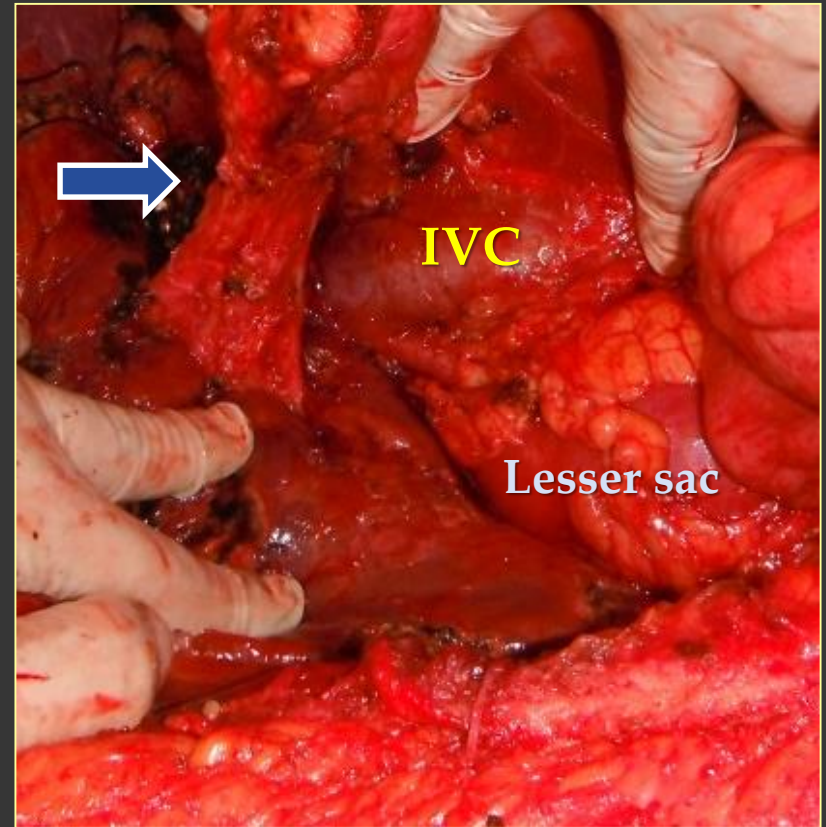
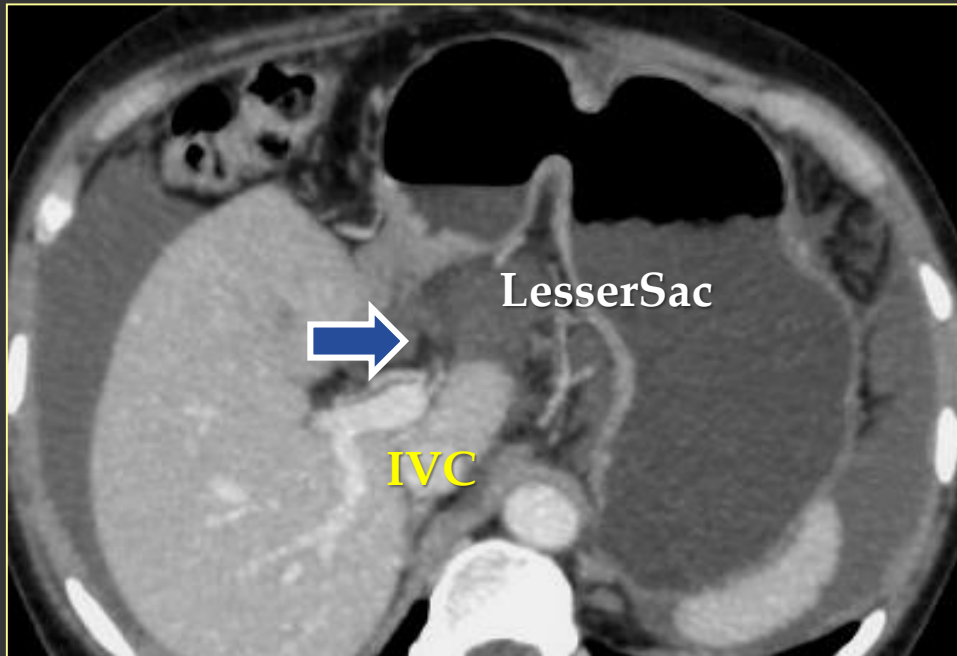


Patient with pseudomyxoma peritonei



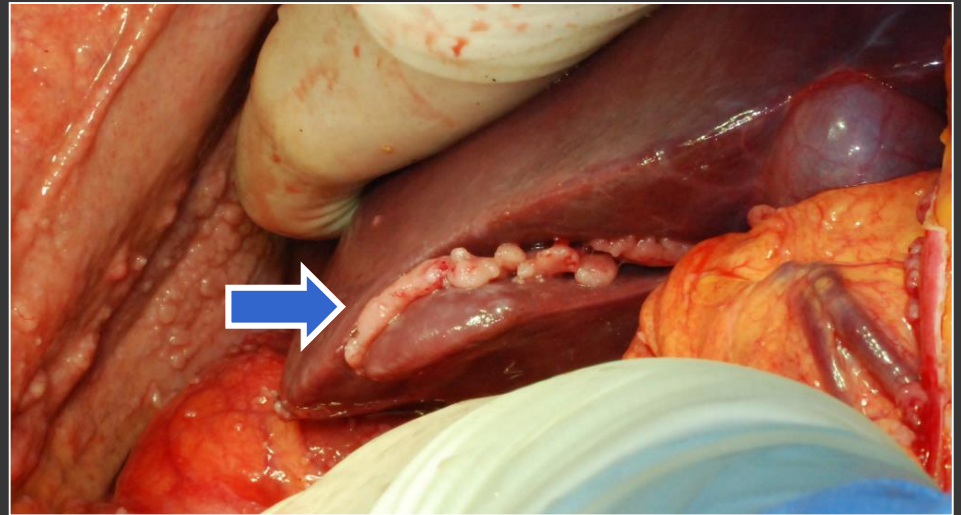
Arrows indicate the myxomatous material in the anatomic area of the **falciform ligament**

Hepatoduodenal ligament

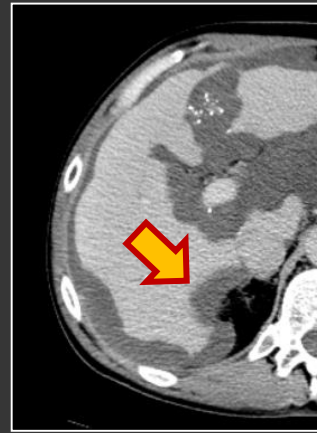


⇒ **Hepatoduodenal ligament** in patient with ascites

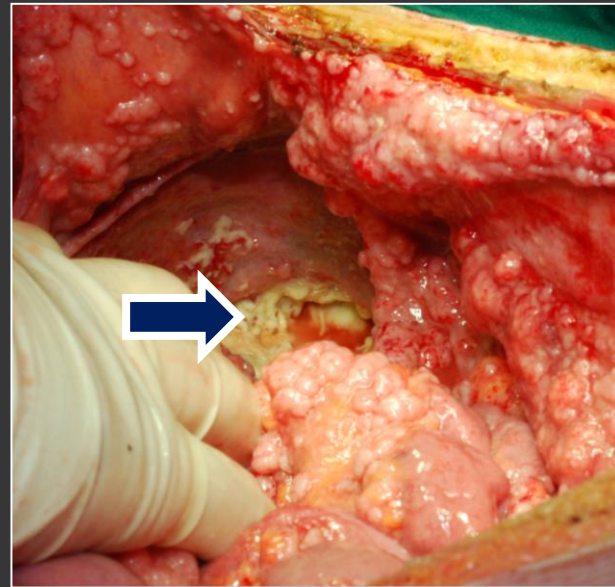
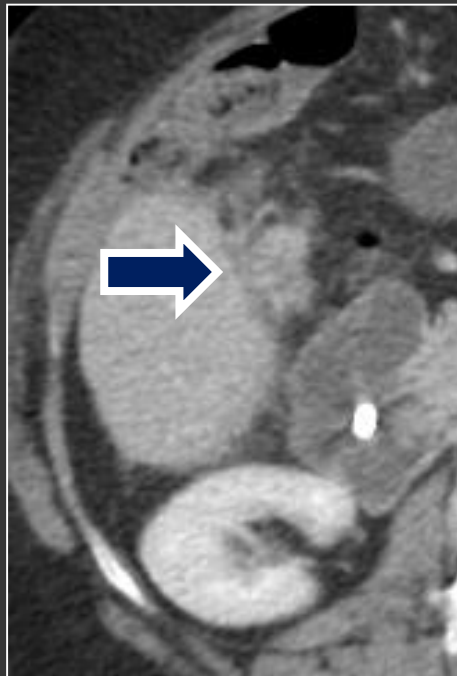
Hepatoduodenal ligament



Cancerous implants within the **hepatoduodenal ligament** and the subhepatic space



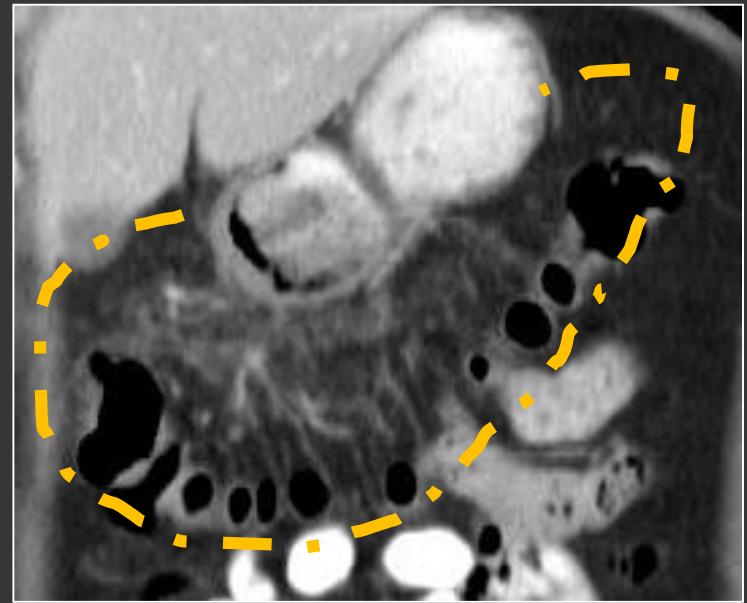
Morison's pouch



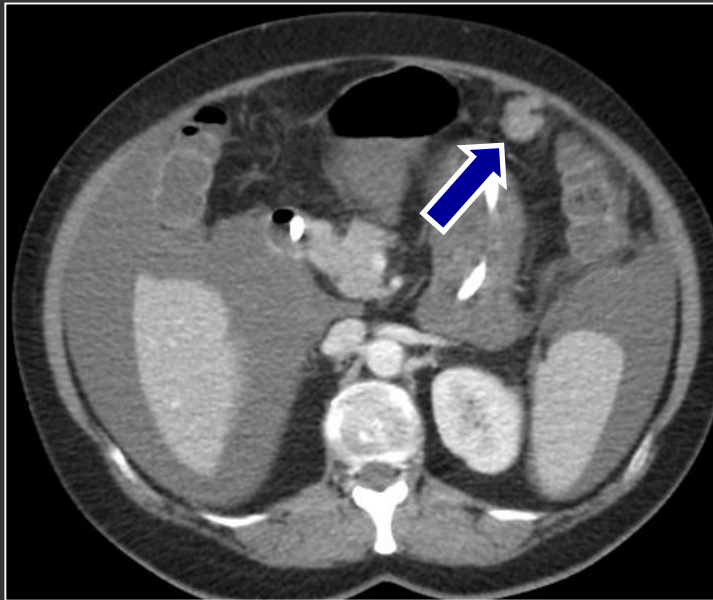
Cancerous deposits in the **subhepatic space**



Gastrocolic ligament [normal]

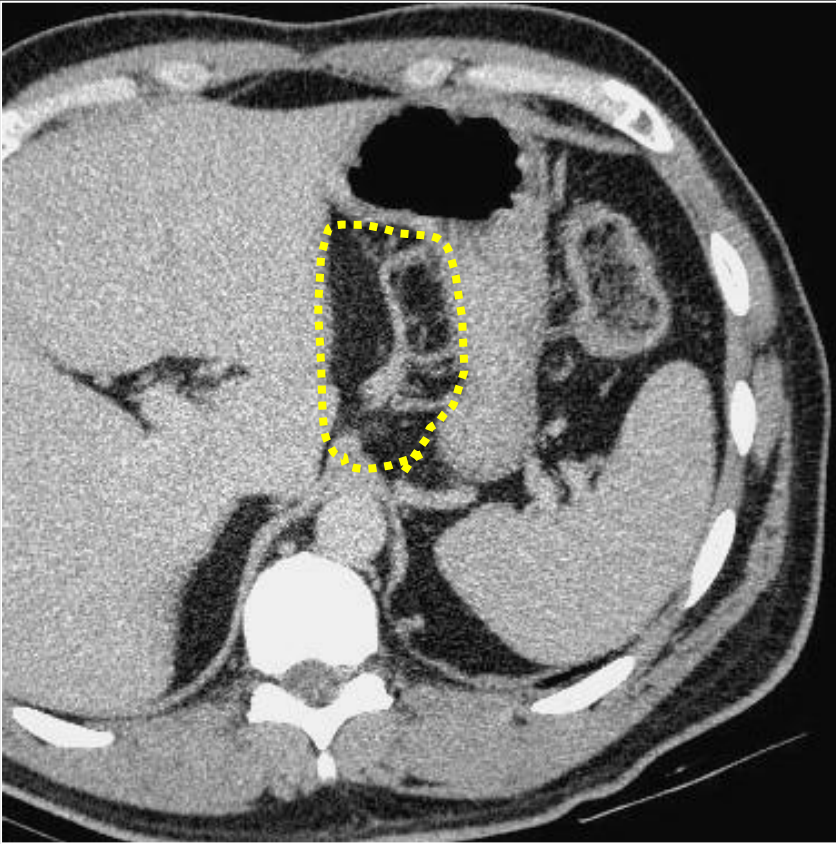


Gastrocolic ligament as involved by inflammation



Hemorrhagic cancerous implant in the **gastrocolic ligament**

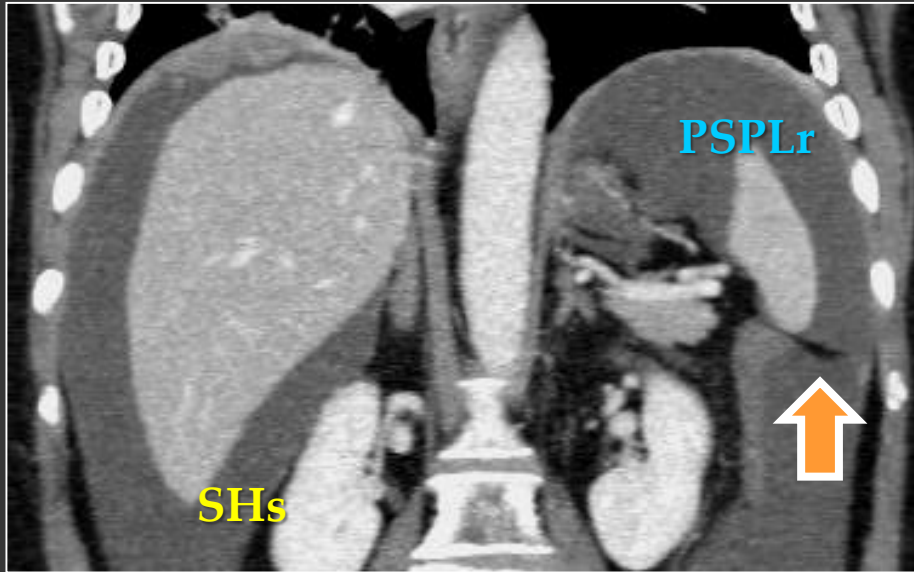




Gastrohepatic ligament



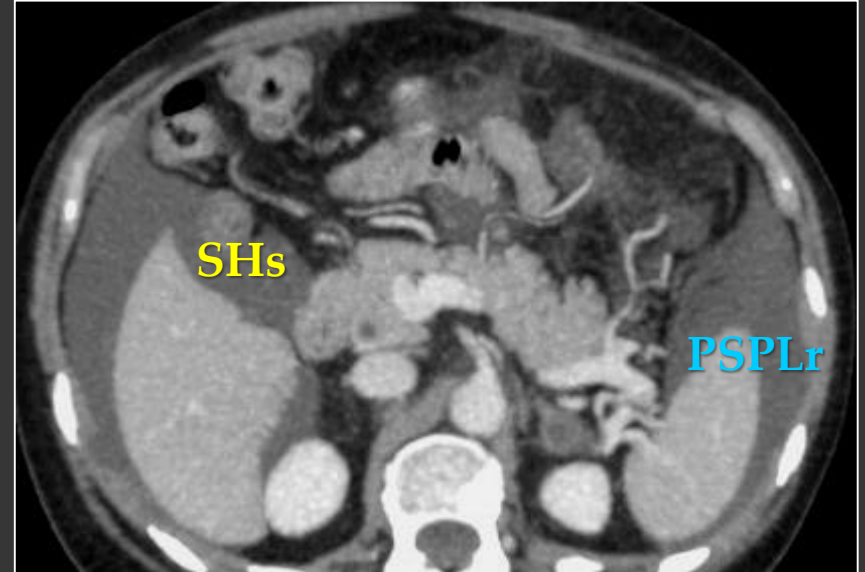
Phrenogastric ligament



Subhepatic space [SHs]

Perisplenic recess [PSPLr]

Phrenicocolic ligament [arrow]

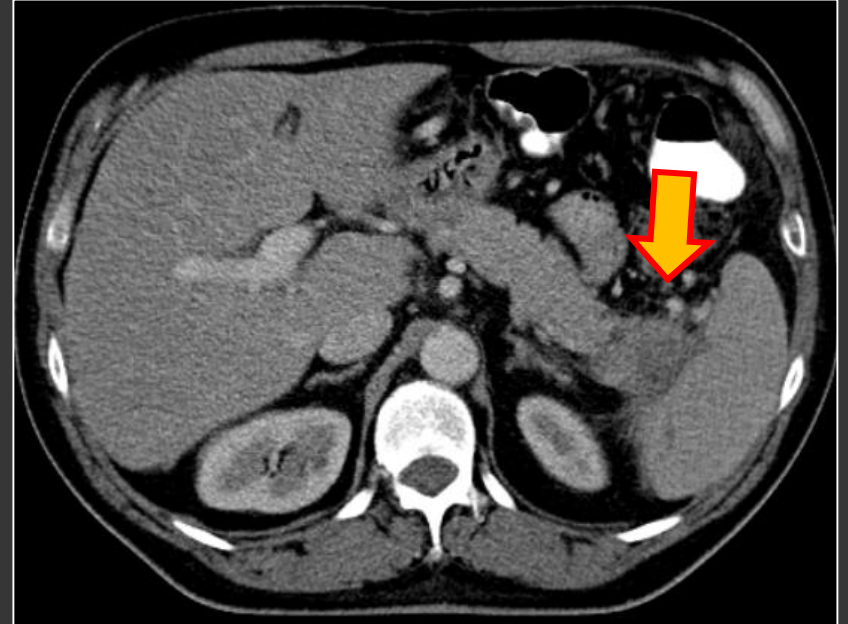


Subhepatic space [SHs]

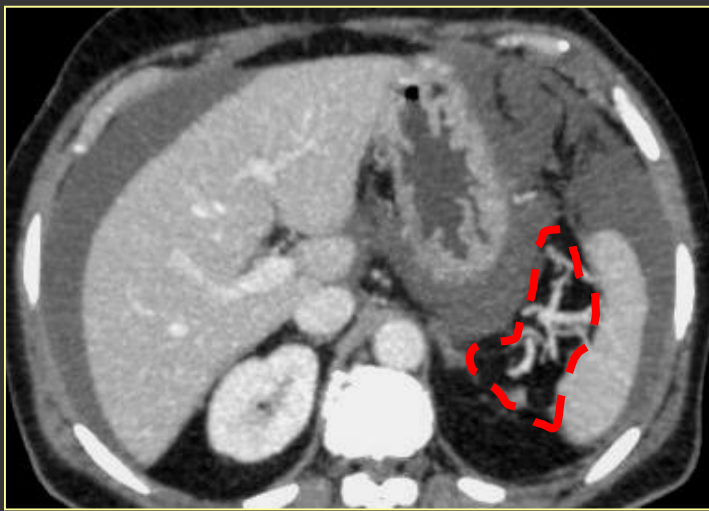
Perisplenic recess [PSPLr]



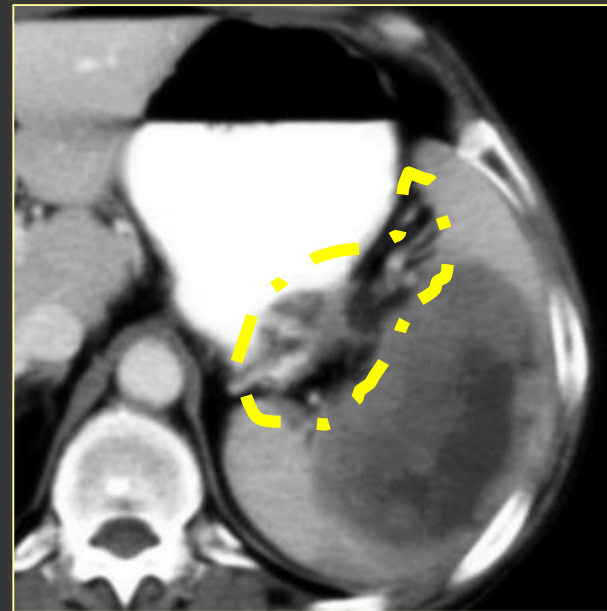
splenopancreatic ligament



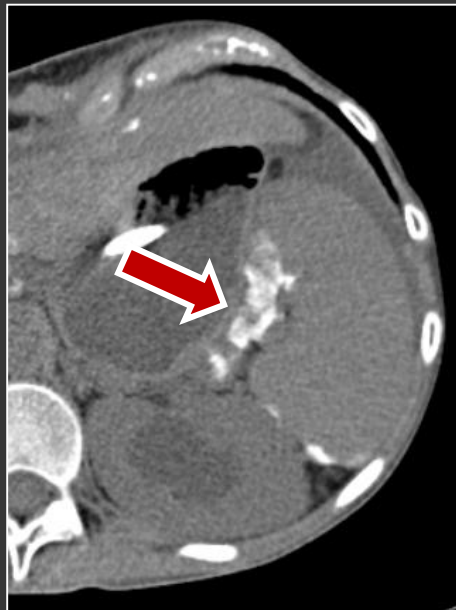
splenopancreatic ligament
invaded by a tumor in the tail of
pancreas



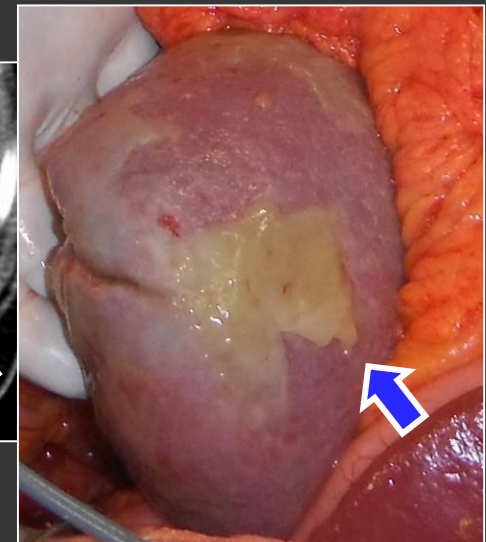
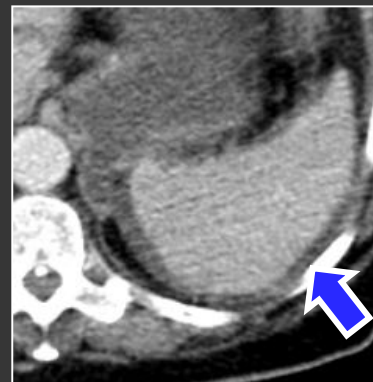
gastrosplenic ligament



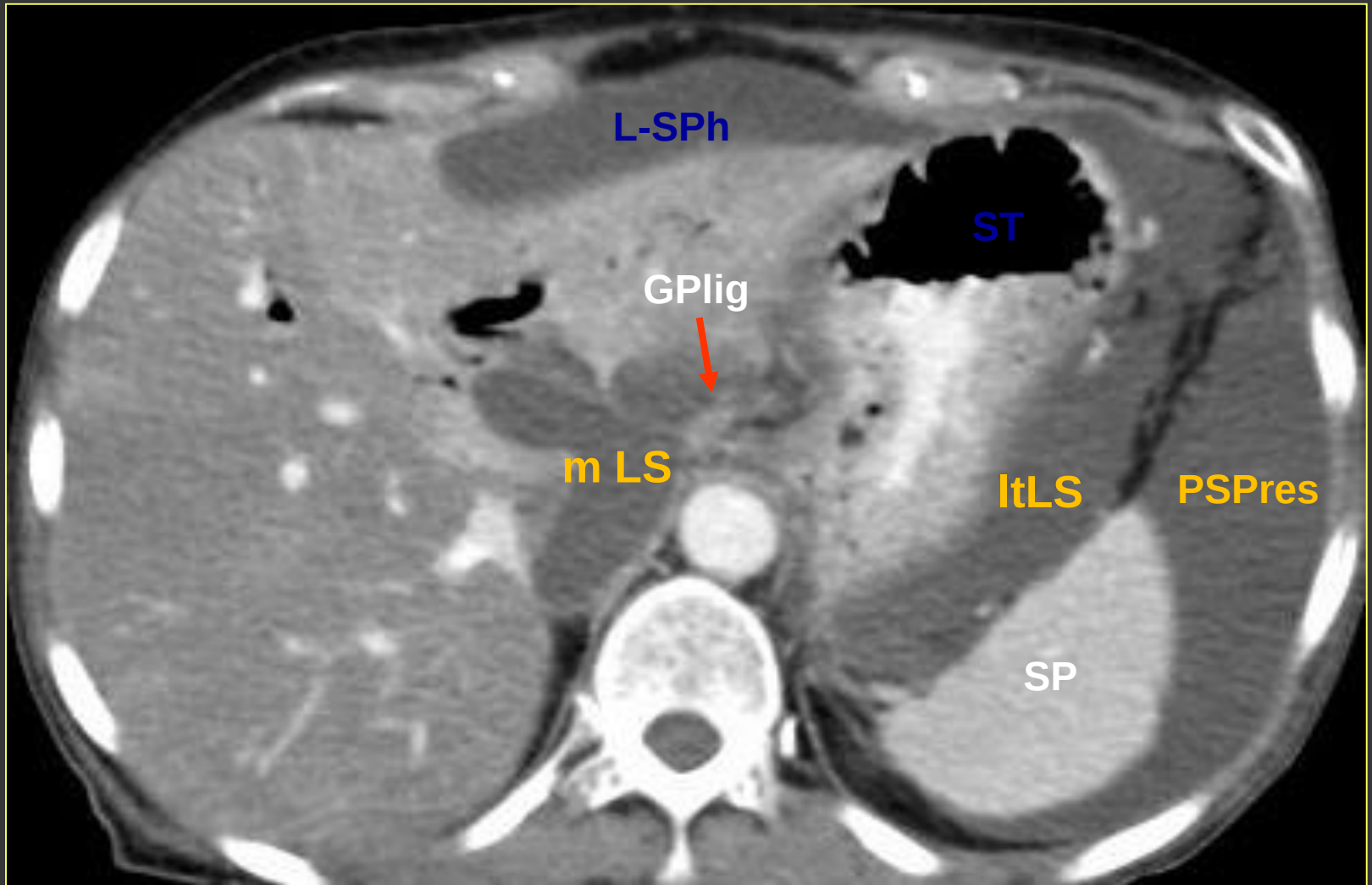
Sarcoma of the spleen migrate the stomach through the gastrosplenic ligament



Calcified cancerous deposits in the **gastrosplenic ligament** from mucinous tumor in the ovaries

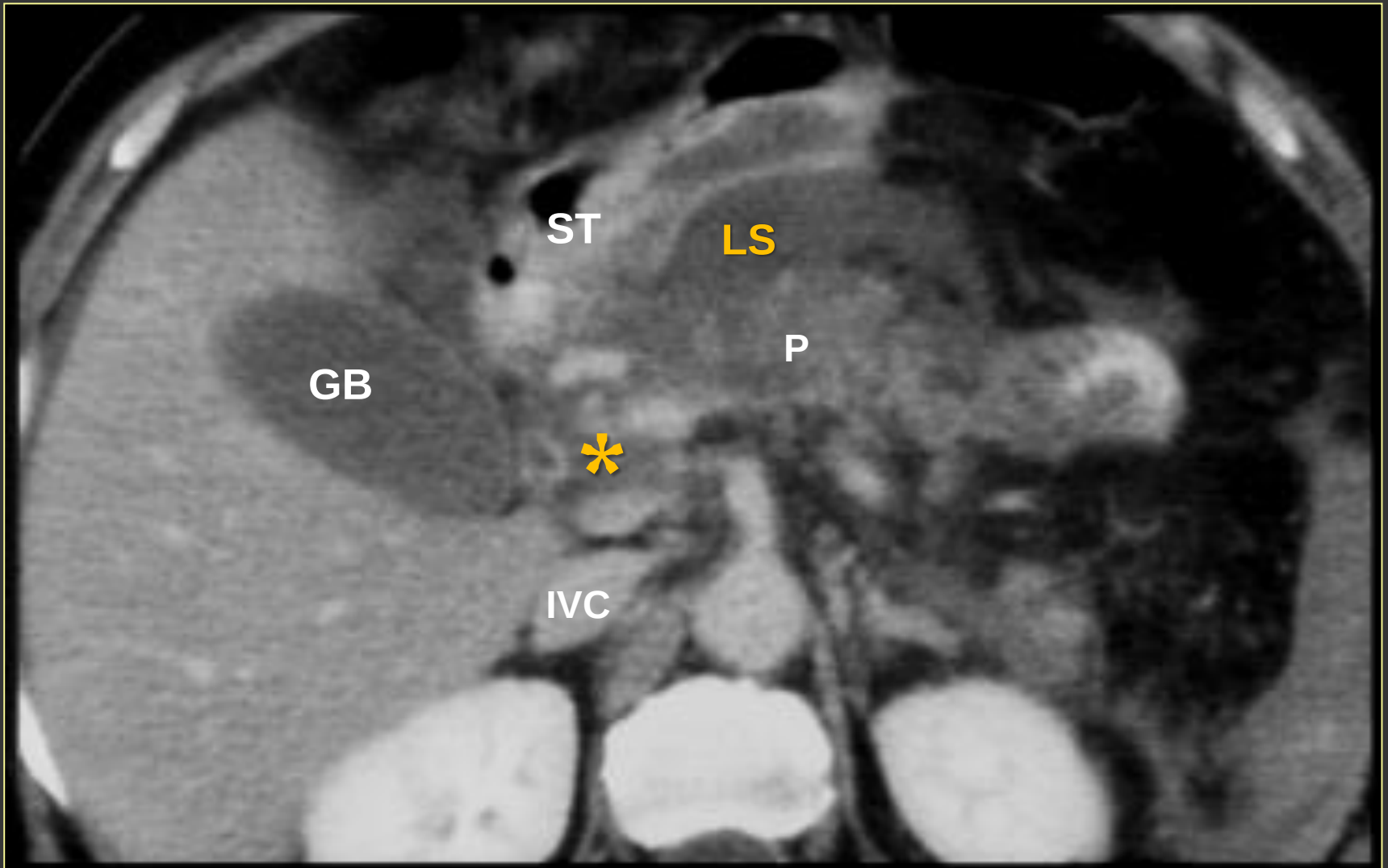


cancerous implants in the **perisplenic recess**



Medial part of lesser sac [mLS]
Lateral part of lesser sac [ltLS]
Perisplenic recess [PSPres]
Gastropancreatic ligament [GPLig]

Stomach [ST]
Spleen [SP]
Left subphrenic space [L-SPh]



Winslow foramen [*]

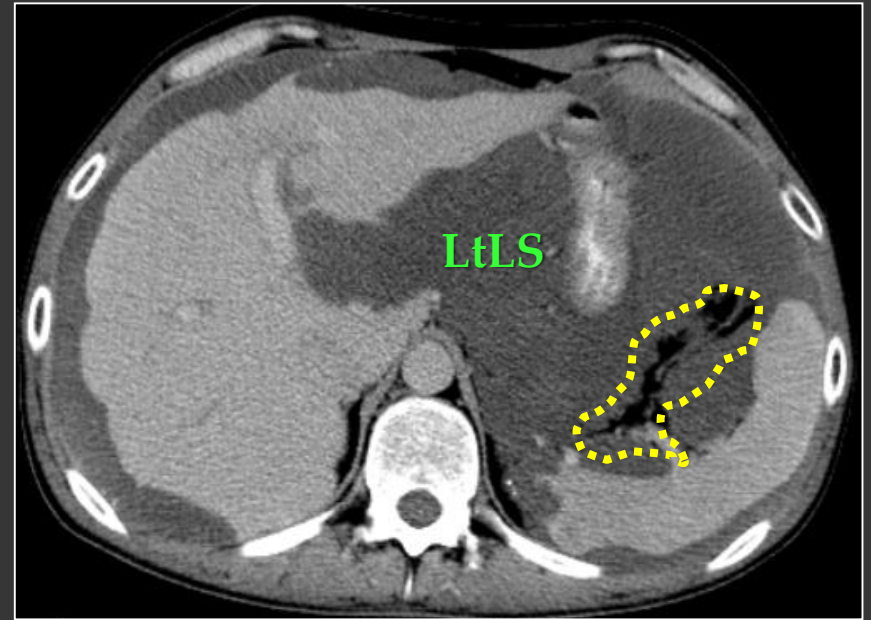
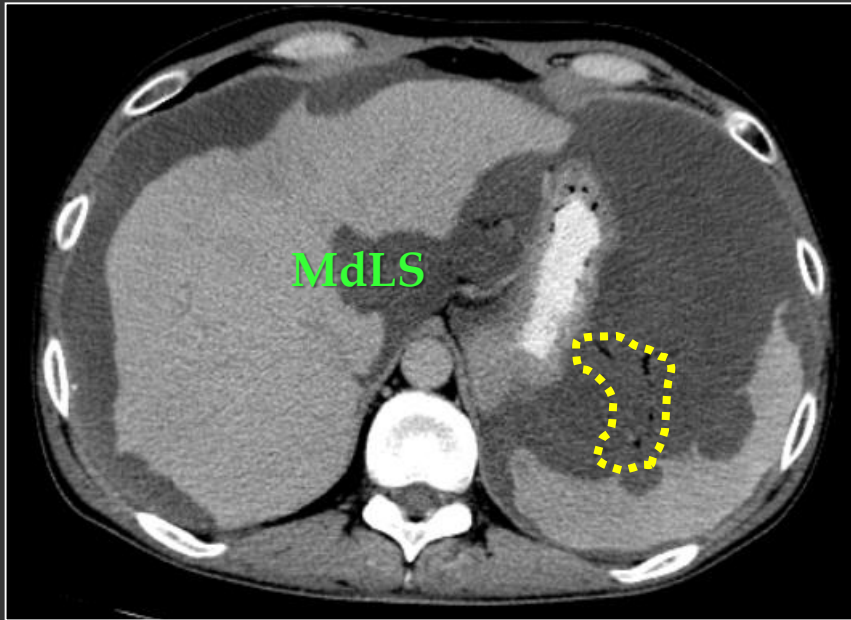
Lesser sac [LS]

Stomach (ST)

Pancreas (P)

Gall bladder (GB)

Inferior vena cava (IVC)



Patient with pseudomyxoma peritonei

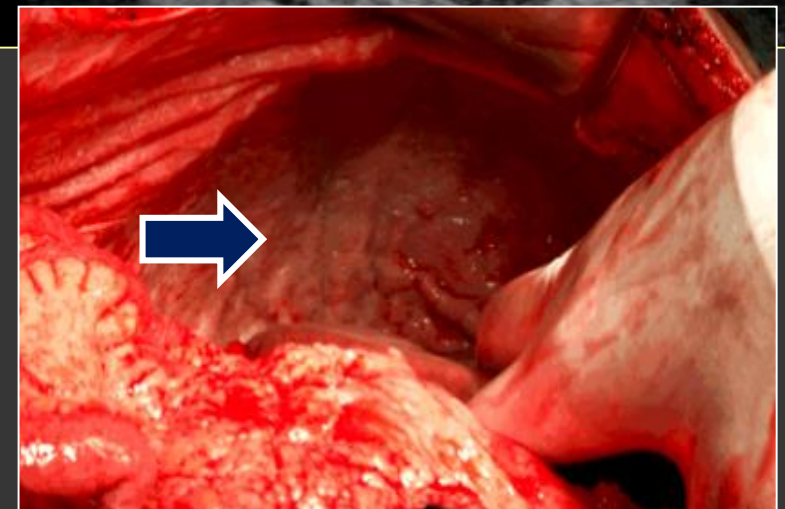
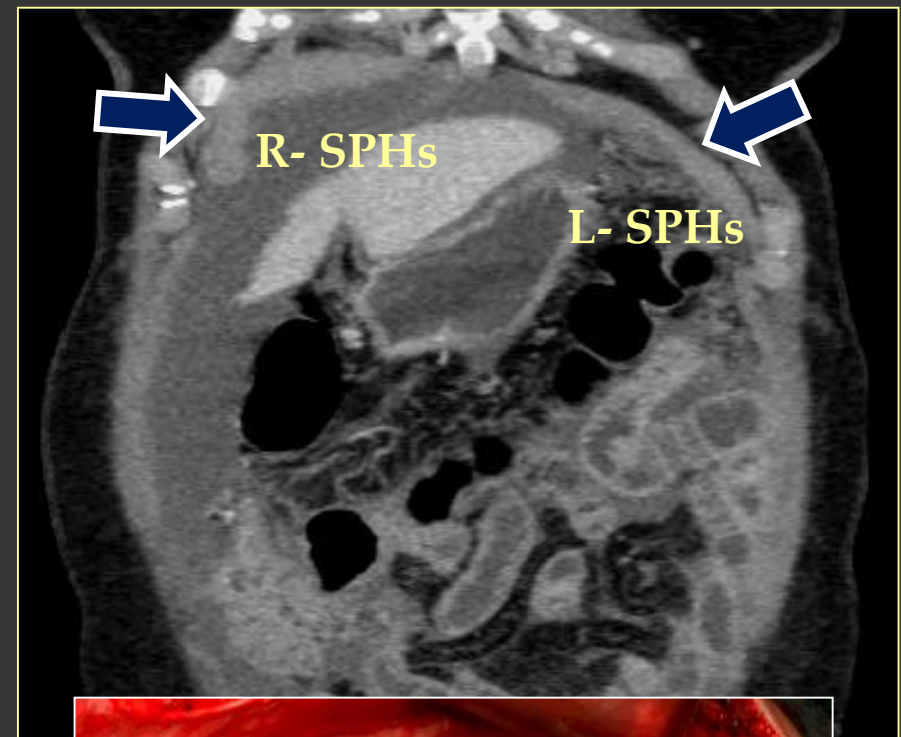
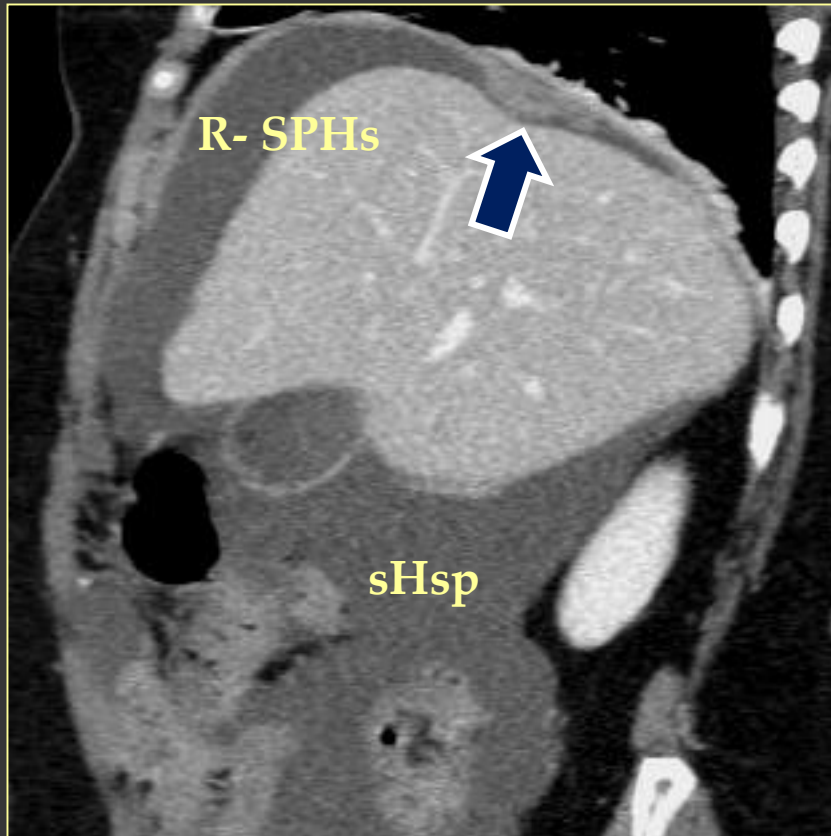
Medial compartment Lesser Sac [MdLS]

Lateral compartment Lesser Sac [LtLS]

Gastrosplenic ligament

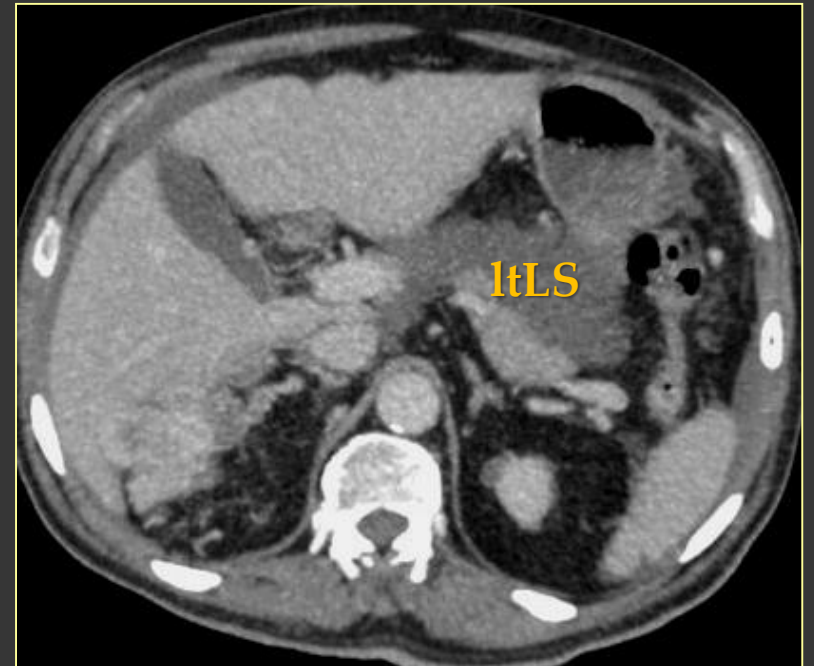
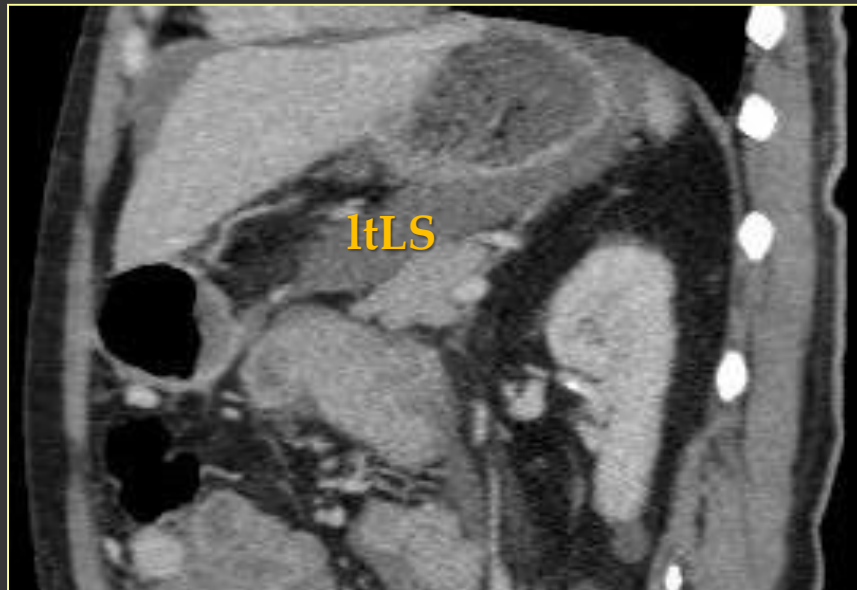
PERITONEAL COMPARTMENTS OF THE UPPER ABDOMEN

- R. subphrenic space
- R. subhepatic space
anterior – posterior
- Lesser sac , medial
vestibular,sup. rescess
- L. subphrenic space
Suprahepatic
Subhepatic
Gastrosplenic
Perisplenic
Splenopancreatic
- Lesser sac, lateral

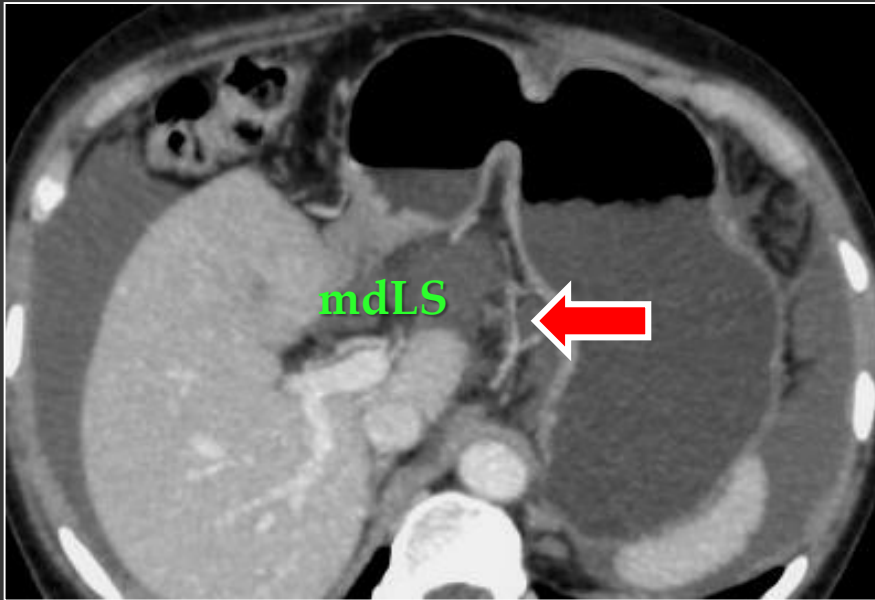


R subphrenic space [R- SPHs]
L subphrenic space [L- SPHs]
Subhepatic space [sHsp]

**Arrows indicate cancerous implants
in the subphrenic space**



Lesser sac,
lateral compartment
[ltLS]



Lesser sac medial compartment [mdLS]

→ Left gastric artery

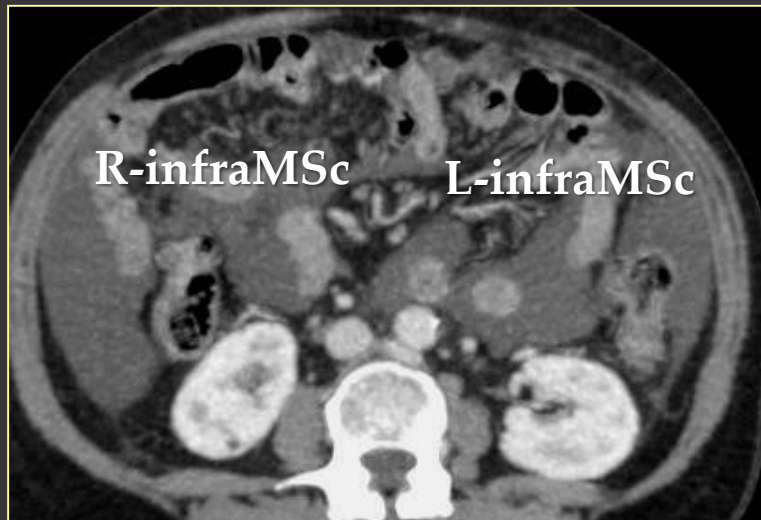
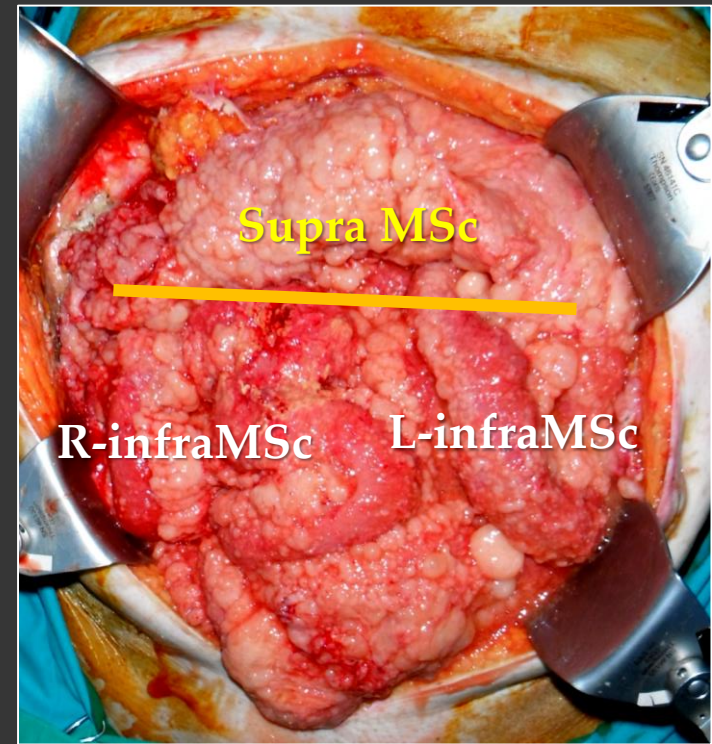
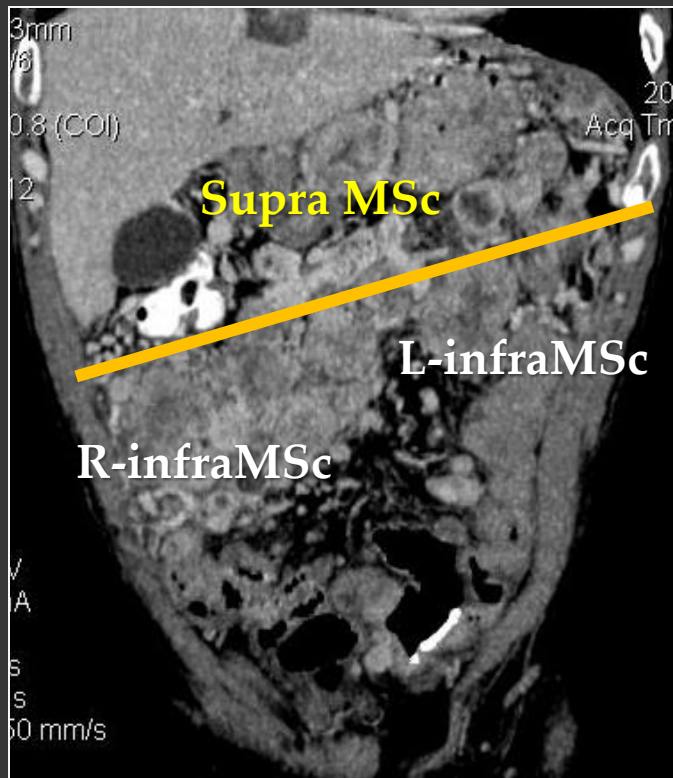
INFRAMESOCOLIC PERITONEAL REFLECTIONS - COMPARTMENTS

Reflections

- Transverse mesocolon
- Small bowel mesentery
- Greater omentum
- Mesocecum
- Ascending mesocolon
- Descending mesocolon

Compartments

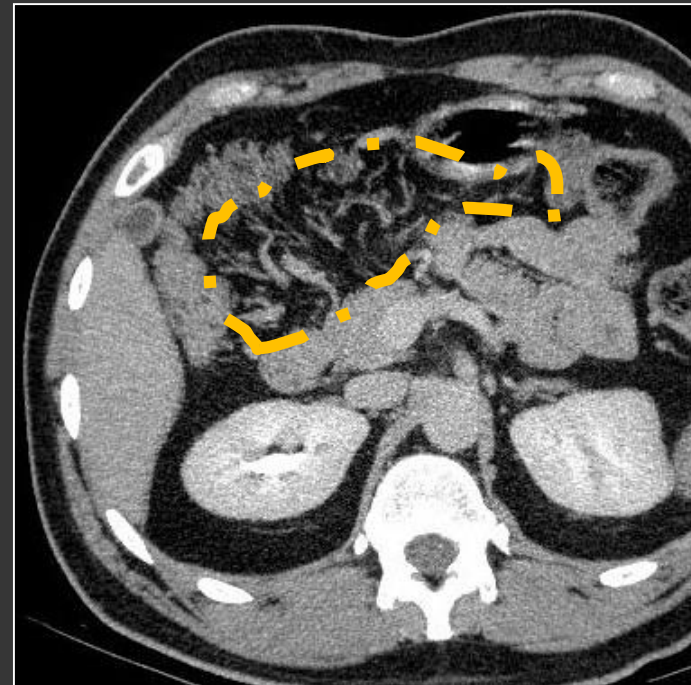
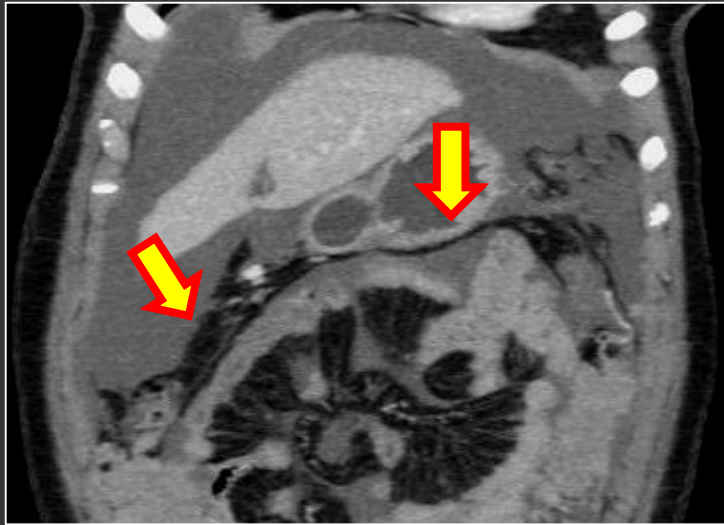
- R,L inframesocolic
- R,L paracolic gutters
- Previsceral



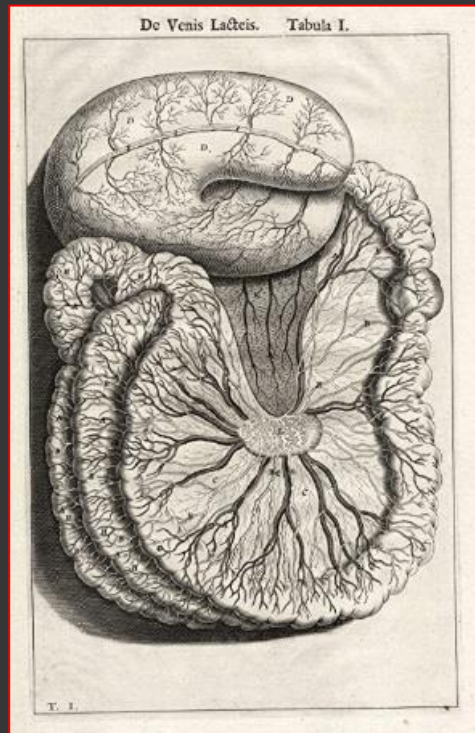
Supra Mesocolic compartment [Supra MSc]

R Infra Mesocolic compartment [R-infra MSc]

L Infra Mesocolic compartment [L-infra MSc]

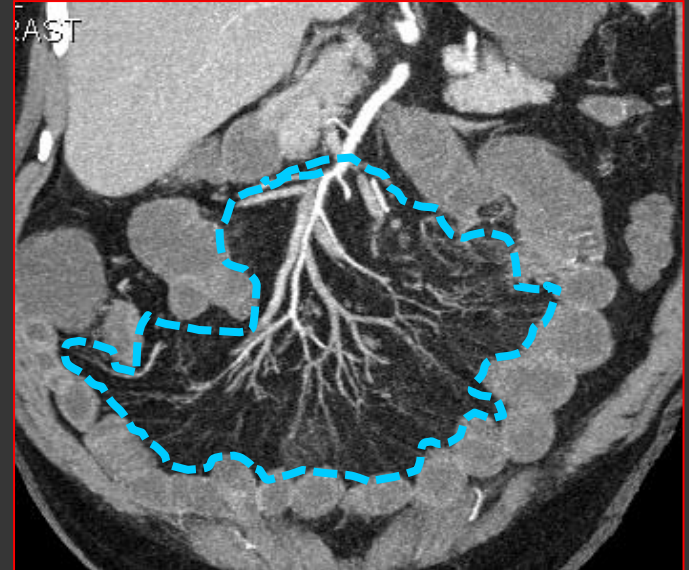


Transverse mesocolon

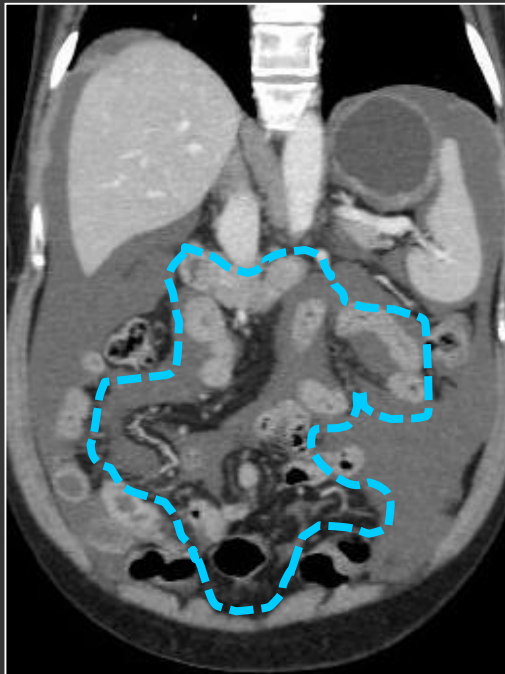


De humanis corporis fabrica
Adrianus Spigelius (1627)

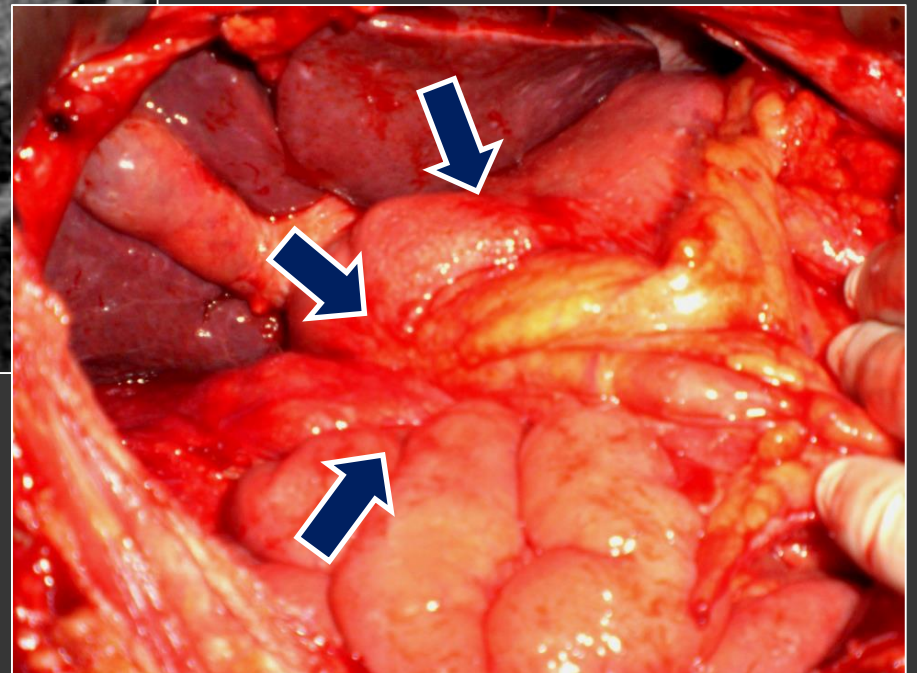
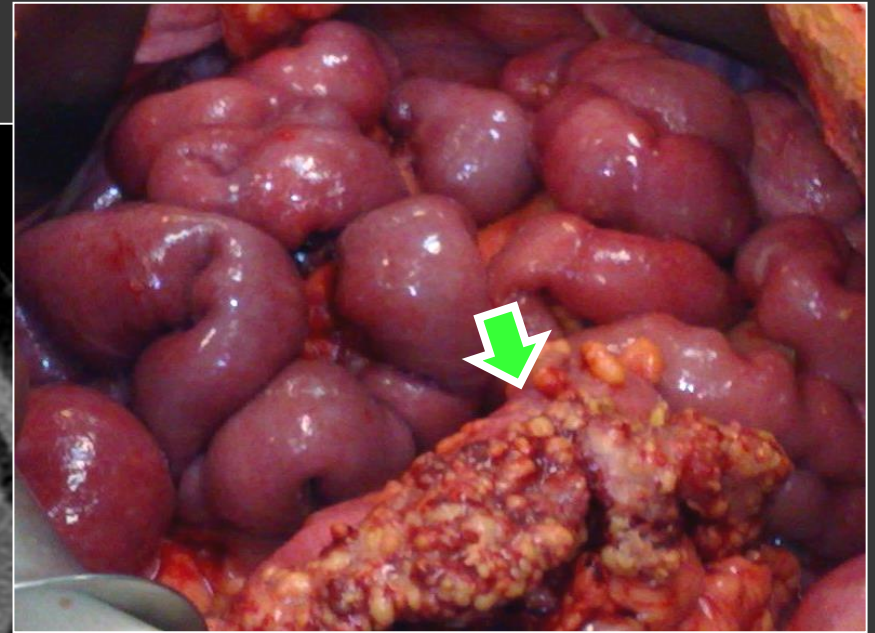
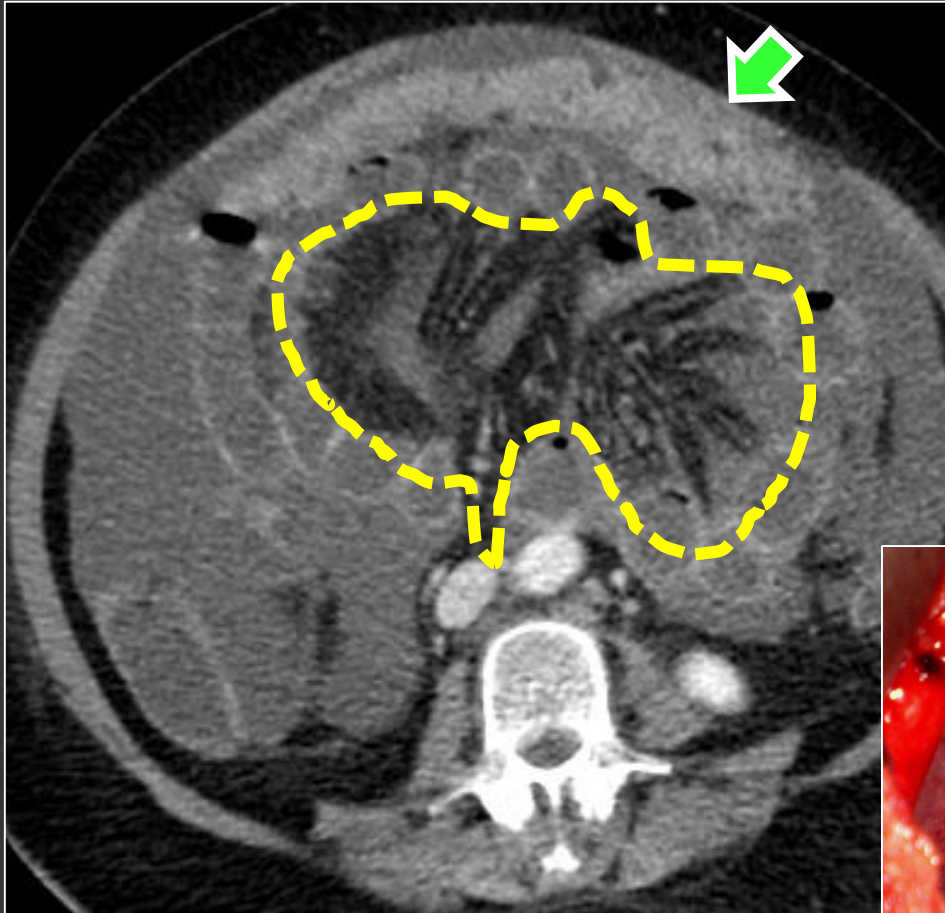
**small bowel
 mesentery**



**thickened small bowel route of
 mesentery -panniculitis**



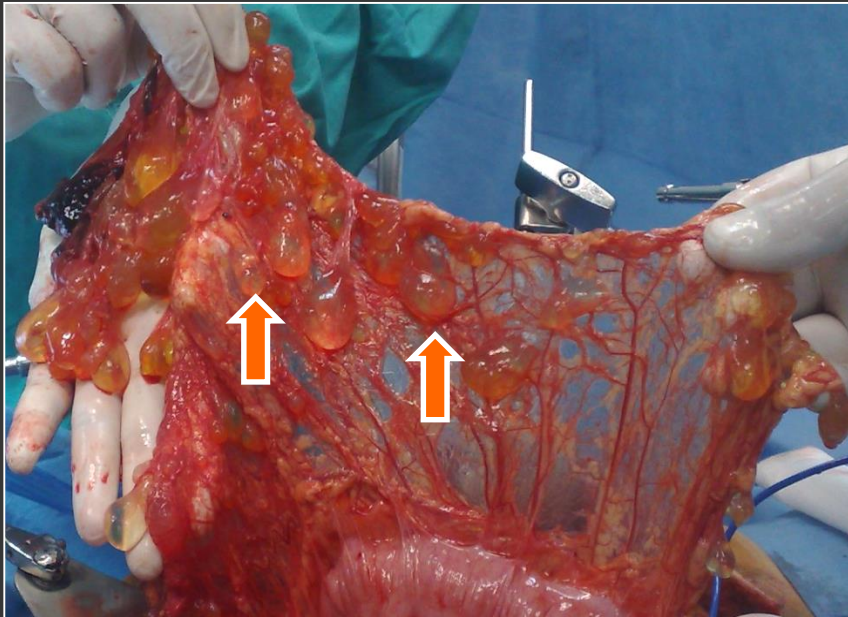
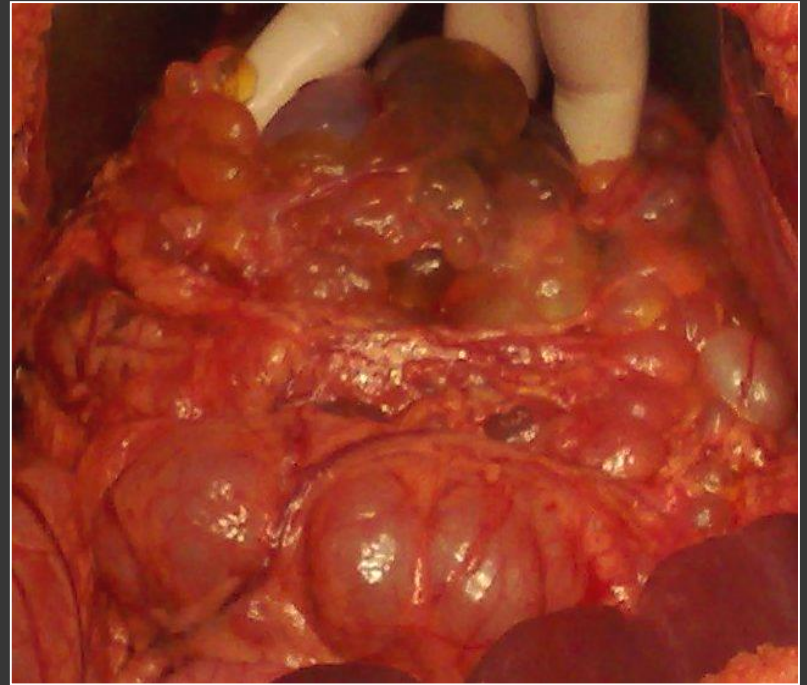
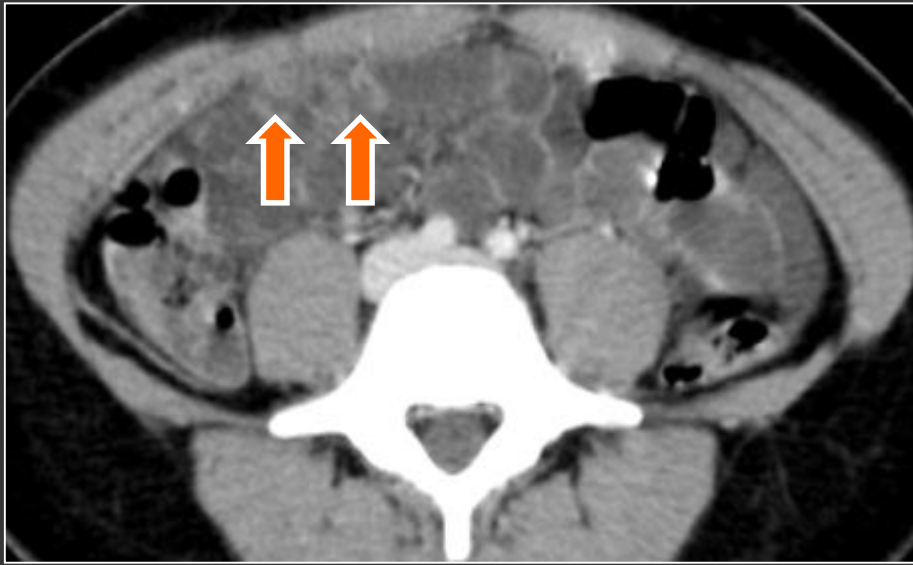
abnormal mesentery



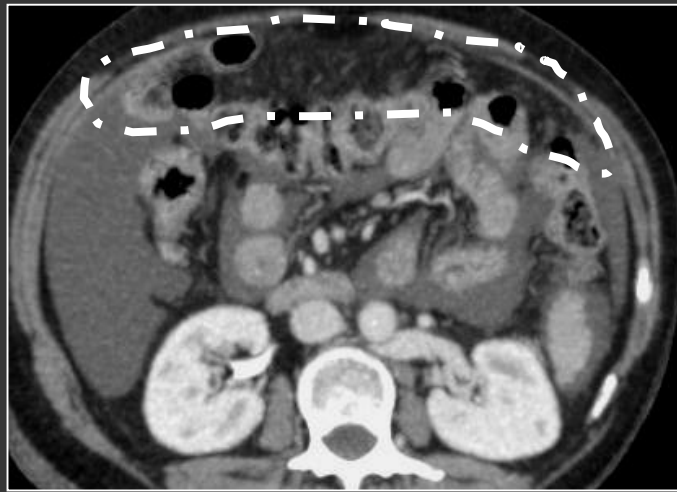
"frozen" mesentery

totally involved mesentery in a patient
with extensive peritoneal carcinomatosis

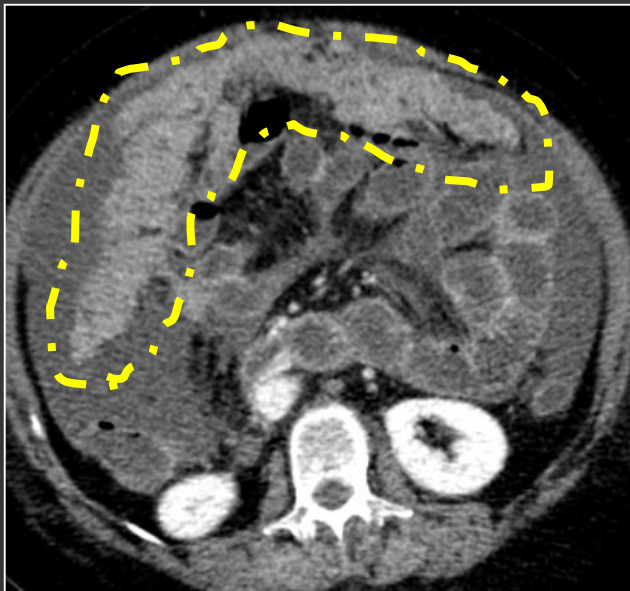
Green arrows indicate "omental cake"



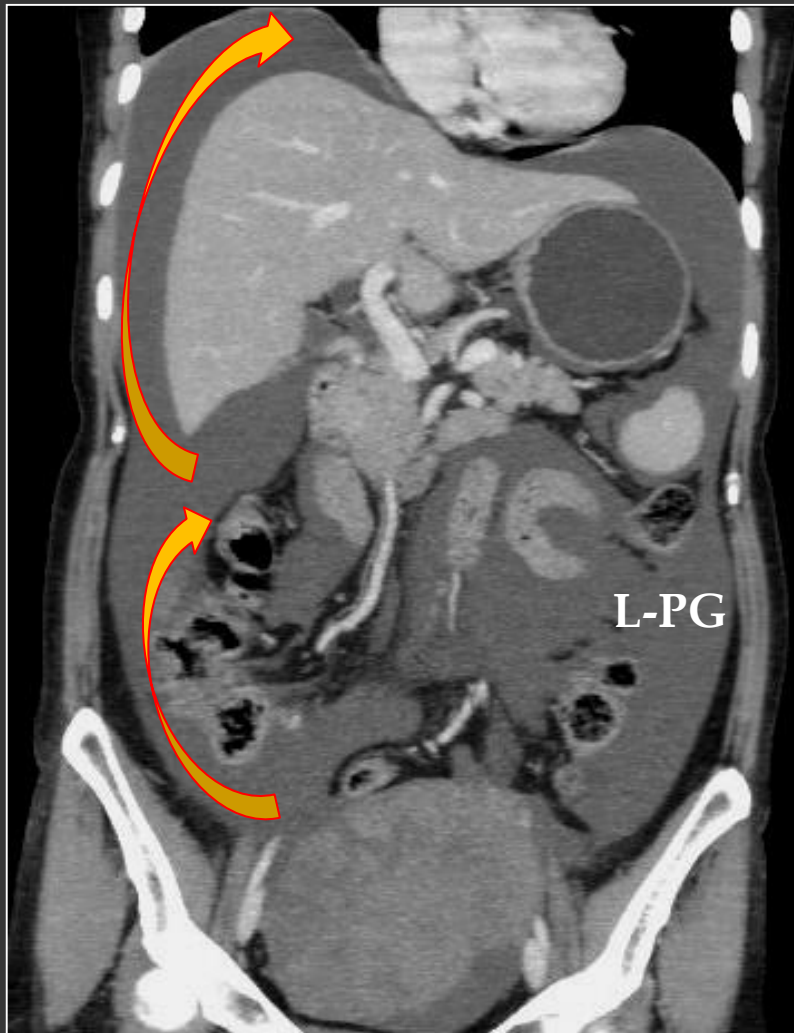
Omentum in a case of cystic peritoneal mesothelioma



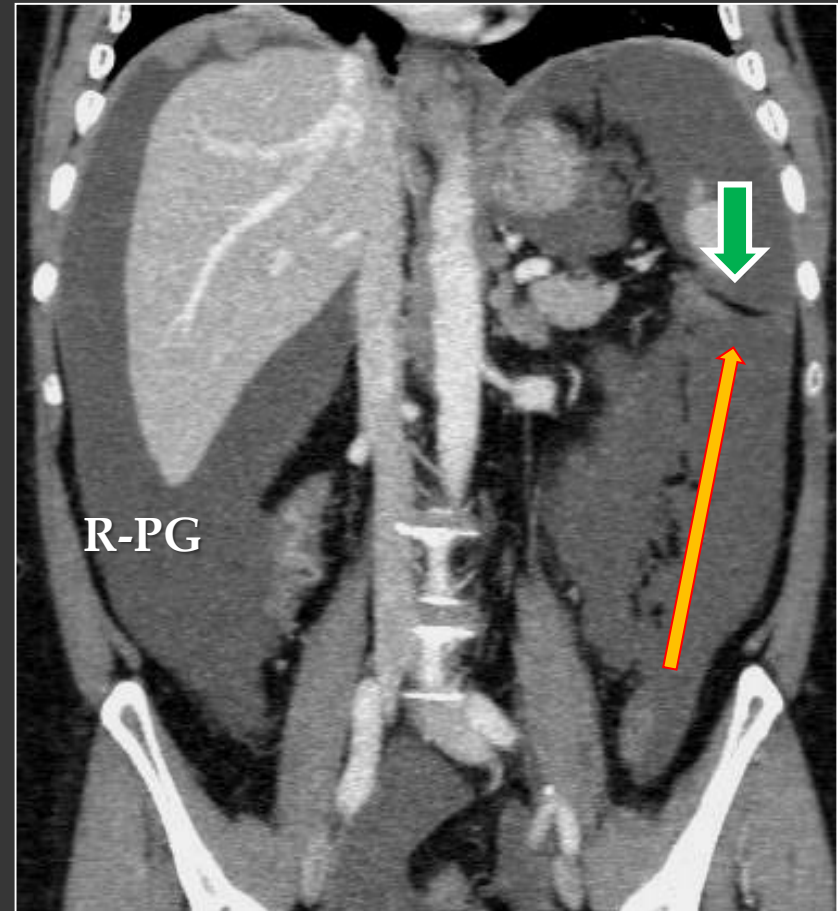
thickened
greater omentum



"omental cake"
in a patient with peritoneal carcinomatosis



Right Paracolic gutter [R-PG]
Left Paracolic gutter [L-PG]



Green arrow indicates the
 phrenicocolic ligament

Orange arrows indicate the routes of fluid
 circulation within peritoneal cavity

PELVIC PERITONEAL REFLECTIONS - COMPARTMENTS

Reflections

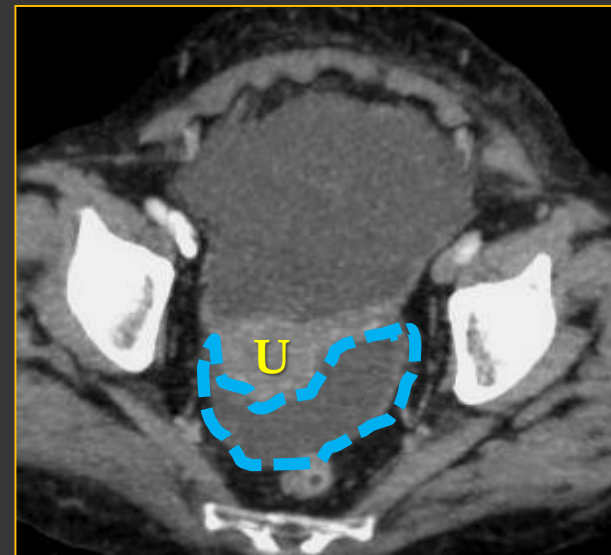
- Sigmoid mesocolon
- Peritoneal cover of
 - Urinary bladder
 - Uterus
 - Broad, round ligaments
 - Seminal vesicles
 - Umbilicovesical ligament

Compartments

- Anterior
 - Supravesical recess
 - Prevesical recess
 - Inguinal recesses
 - Retrovesical recess
- Posterior
 - Seminorectal or Uterorectal
 - Pararectal

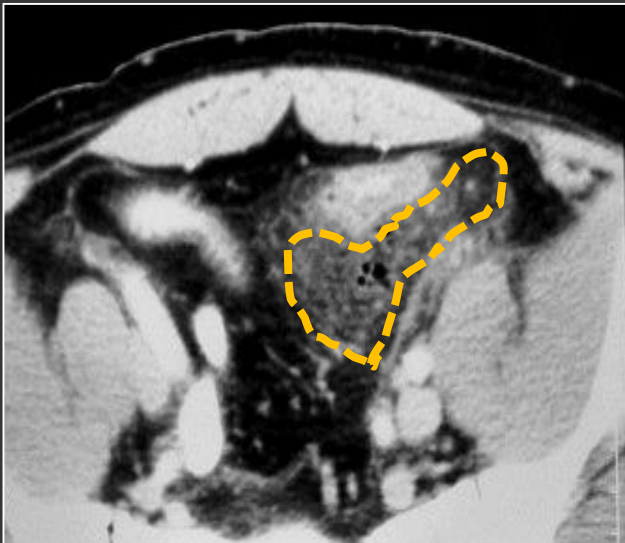


Sigmoid mesocolon

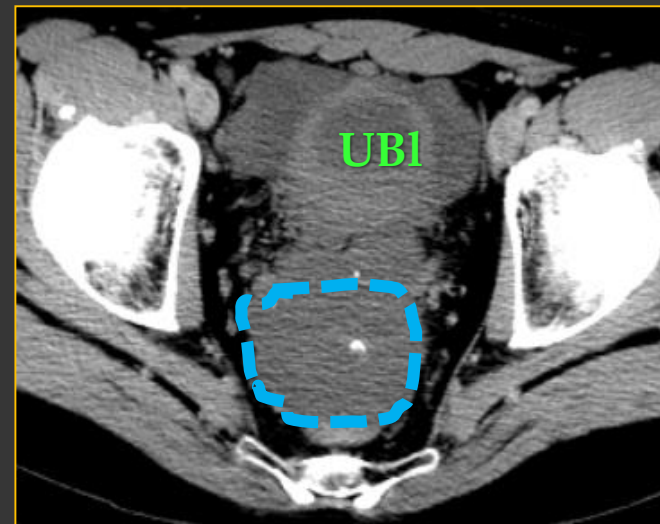


Pouch of Douglas

Uterus [U]

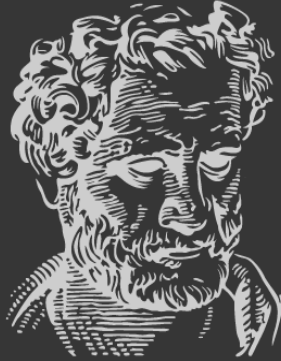


**Infiltrated sigmoid mesocolon in
acute diverticulitis**



Rectovesical Pouch of Douglas

Urinary bladder [Ubl]



ΔΗΜΟΚΡΙΤΕΙΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΡΑΚΗΣ

DEMOCRITUS
UNIVERSITY
OF THRACE



ARISTOTLE
UNIVERSITY OF
THESSALONIKI

Thank you!!!