GI

Anatomy

LEC no.

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THE PERITONEUM

RECAP:

Layers of anterior abdominal wall :

1-skin

2-superficial facia

3-deep facia

4-muscular layer

5-transversalis fascia

6-extraperitoneal fascia

7-parietal peritoneum

COLOR CODE

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معلومات خارجية

معلومات مهمة

General features

- The peritoneum is a thin serous membrane
- Consisting of:

1-Parietal peritoneum **which surrounds the abdominal cavity(anterior and posterior abdominal wall)like a balloon**

-lines the ant. Abdominal wall

2-Visceral peritoneum **which surrounds the viscera(complete coverage of the organ)**

Ex: stomach ,small intestine ,transverse colon ,sigmoid colon etc.

-covers the viscera

-Peritoneum is continuous below with parietal peritoneum lining the pelvis

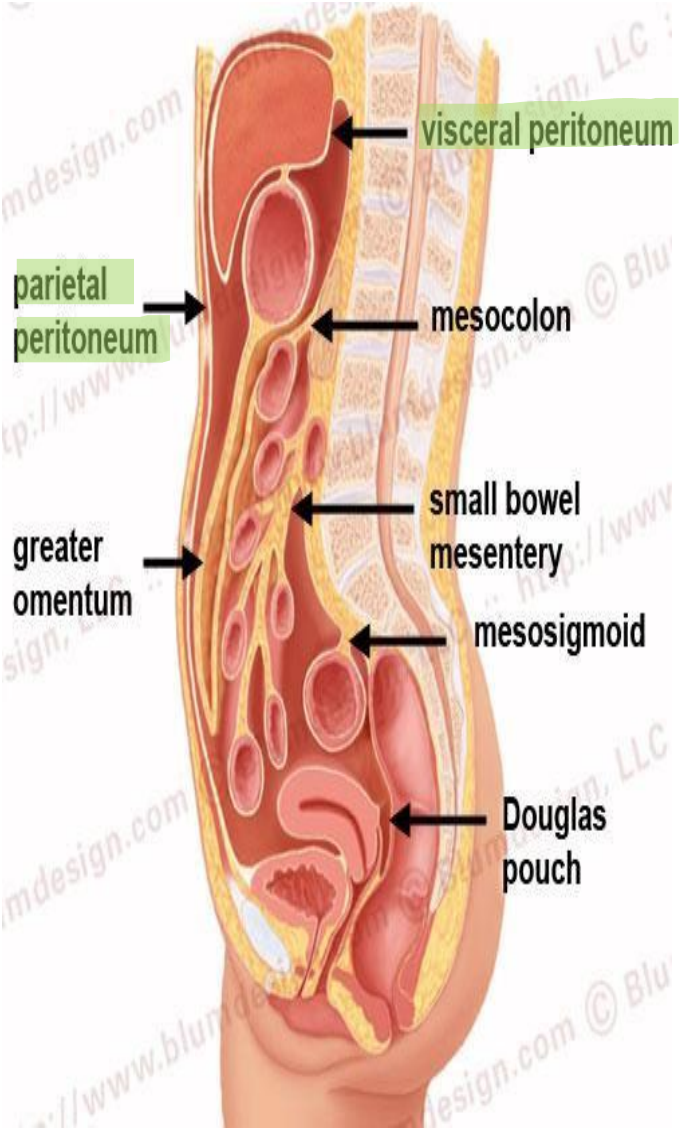
3-Peritoneal cavity

-the potential space between the parietal and visceral layer of peritoneum **they are attached to each other but if some air enters the space will appear and become bigger**

-in male, is a closed sac

-but in the female, there is a communication with the exterior through the uterine tubes, the uterus, and the vagina

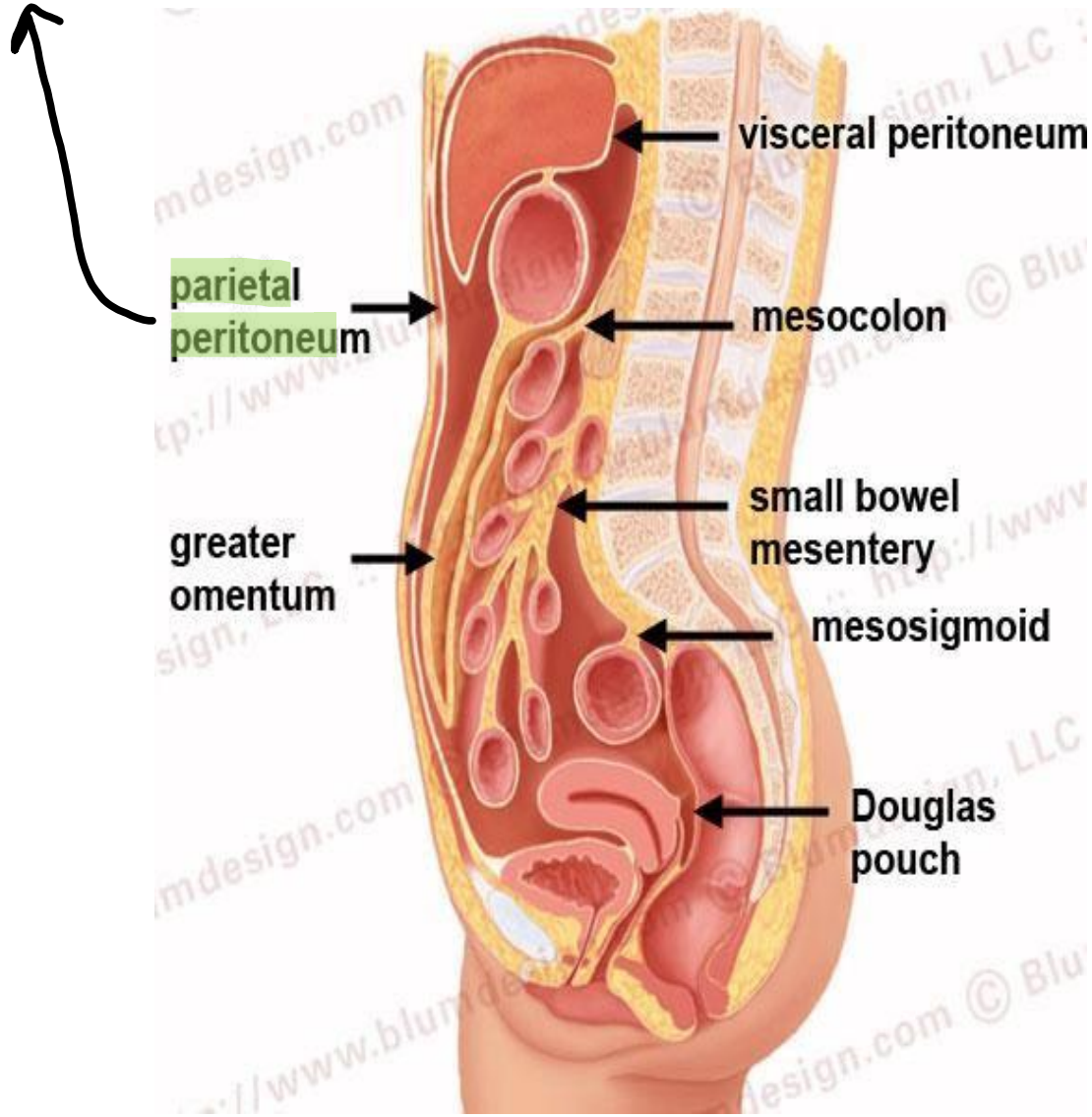
There are always secretions(serous fluid) between visceral and parietal layers for lubrication to prevent friction or injury



-->Parietal peritoneum makes invagination to cover the organs
So it converts from parietal to visceral *we will discuss about this later in the lecture*

Follow the image:
Parietal peritoneum starts above the liver below the diaphragm and then descends -covering the anterior abdominal wall- down to reach the pelvis where it covers the upper surface of urinary bladder then it covers the uterus
Then ascends again -covering the posterior abdominal wall-
then covers the small intestine
then back again to cover the posterior abdominal wall

Type of epithelium:
Simple squamous epithelium (mesothelium)



The peritoneum covers some organs in the abdominal cavity completely (we call these organs intraperitoneal) ex: transvers colon and stomach....

Other organs are covered by peritoneum thus at their anterior surface only (we call these organs retroperitoneal) ex: duodenum ,pancreas, kidneys and ascending colon....

Beige colored ---> peritoneum

*note there is difference between male & female peritoneal cavity.

Female have open cavity, bcz the fallopian tube which emerge from uterus need to enter abdomen cavity.

Male have closed cavity, no fallopian tube.

Peritoneum.....cont

- Peritoneum cavity(sac)divided into

1-Greater sac (in pink) **above the liver then deep to the anterior abdominal wall ,in front of the stomach and greater omentum, between the small intestine**

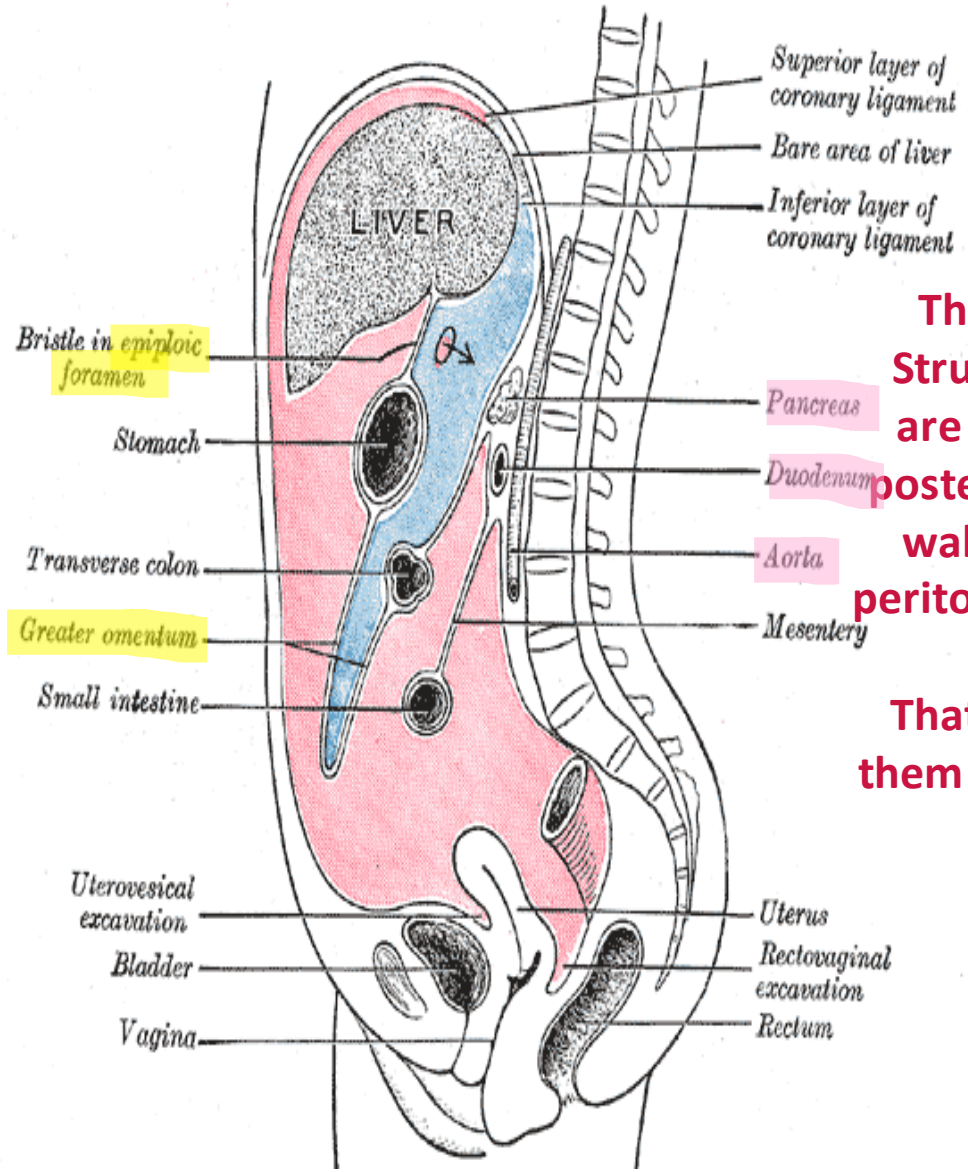
2-Lesser sac(in blue)

Located behind the liver , below the diaphragm , behind the stomach ,then between the layers of greater omentum (which is 2 layers descending from the greater curvature of the stomach then ascends upward and surround the transverse colon then ends anterior to pancreas that's why it is considered intraperitonial)

The 2 layers of peritoneum when they reach the transverse colon they split, one anterior to it and one posterior and rejoin again

- Communication between them(greater and lesser sacs) by the **epiploic foramen(omental foramen**
- **or winslow)**

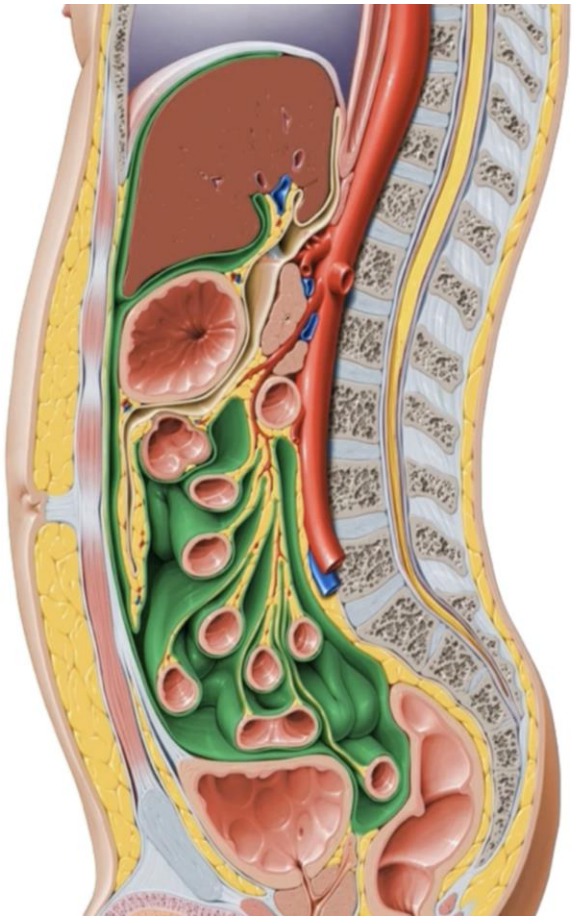
we will discuss this foramen in details later in the lecture



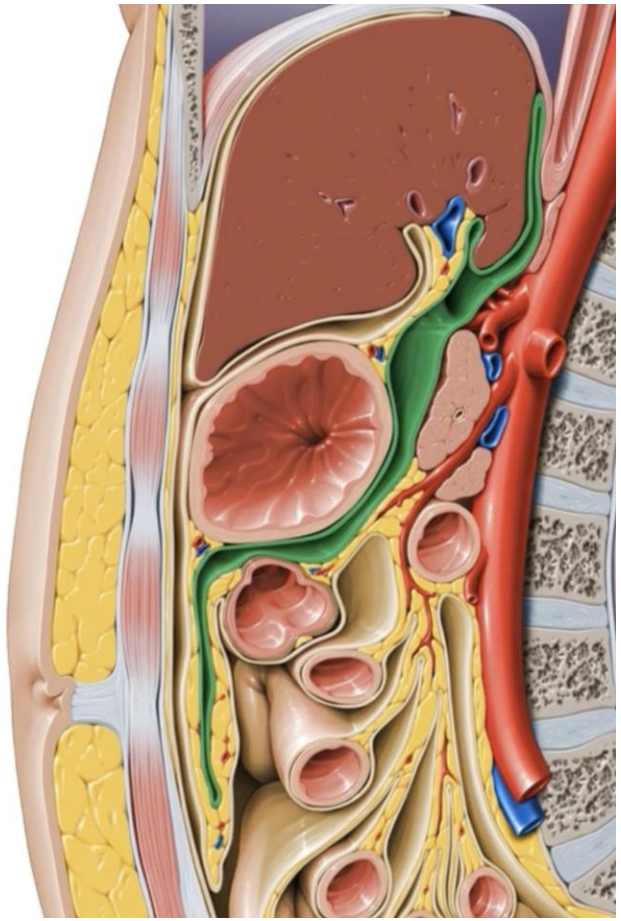
The highlighted Structures(in pink) are located at the posterior abdominal wall, the parietal peritoneum is in front of them. That's why we call them retroperitoneal organs

Additional for further understanding

Peritoneal cavity (sac)



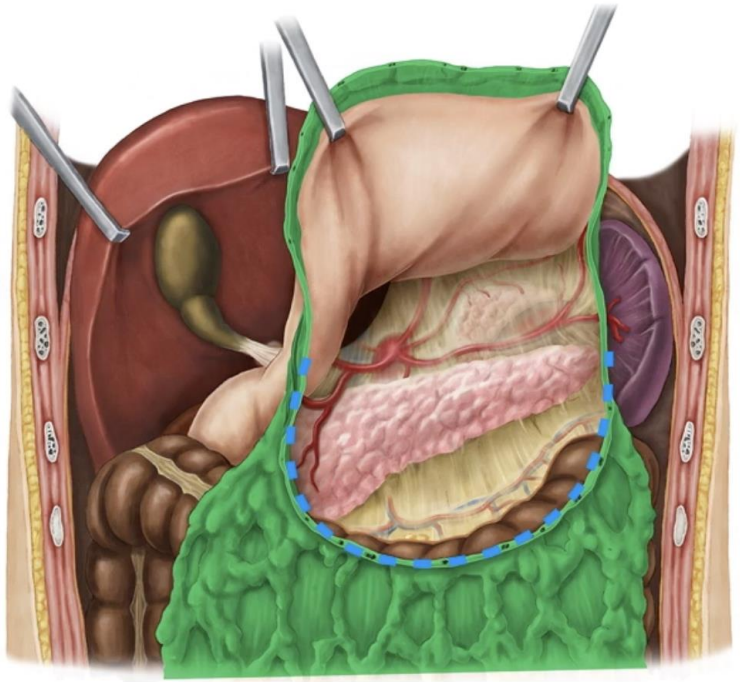
Greater sac

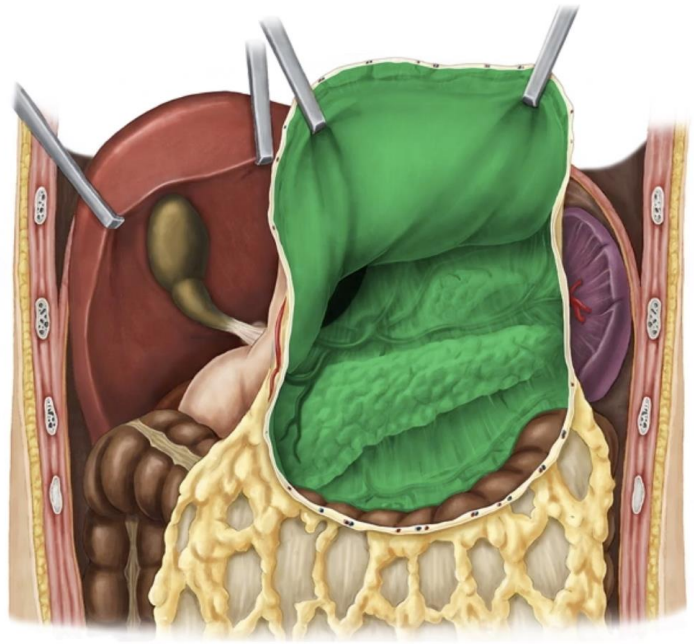


Lesser sac

Additional for further understanding

Firstly ,we will discuss in details about lesser sac then the greater sac





If we cut the greater omentum as in the left image we will find the lesser sac -anterior veiw- (the image on the right will help you to imagine the relations)

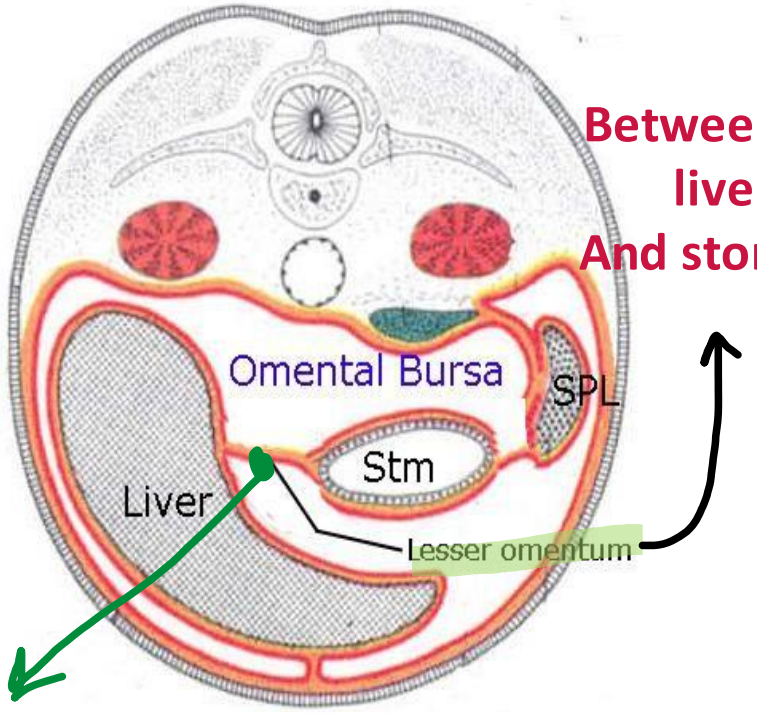
Lesser sac = omental bursa

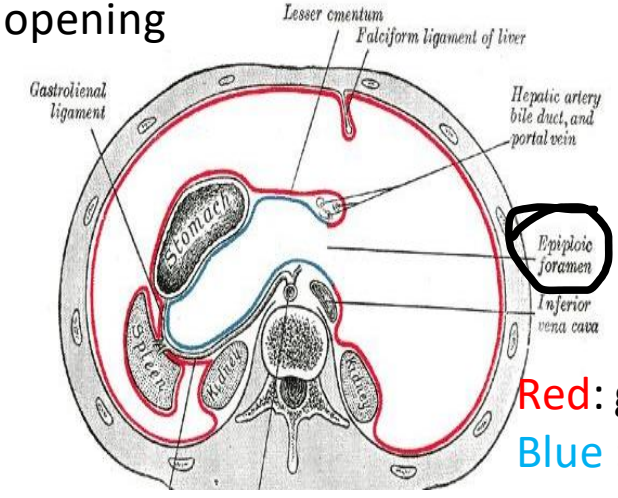
First structure in the stomach bed

- Deep to lesser omentum
- Located Behind the stomach **(any surgery for the pancreas or duodenum or stomach we will work in this sac by entering the foramen of winslow)**
- Between two layers of greater omentum(inferiorly)
- Under the diaphragm and liver (starting point)
- Deep to lesser opening (Epiploic opening **or foramen of winslow**) **if we are in the greater sac we can reach the lesser sac by this foramen**
- **We call the lesser sac in embryo-> omental bursa**
- **Most lateral structure in the lesser sac is the spleen and its ligament(lienorenal or splenorenal ligament) between kidney and spleen**

The Dr mentioned Q here: if we have tumor led to adhesion between stomach and pancreas, which structure will not be affected? Spleen, bc it is the most lateral.

- **Between stomach and the spleen there is gastrosplenic ligament which is 2 layers of peritoneum and its strong -->fixation of spleen**



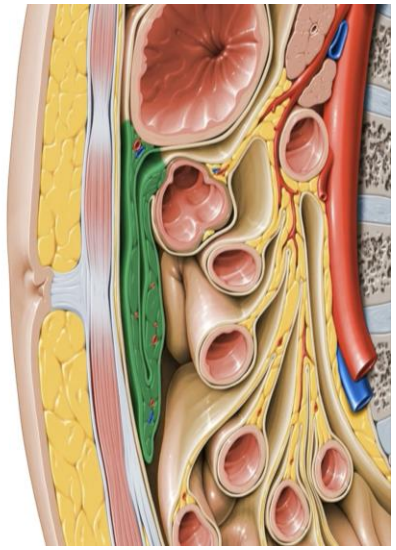


Red: greater sac
Blue : lesser sac

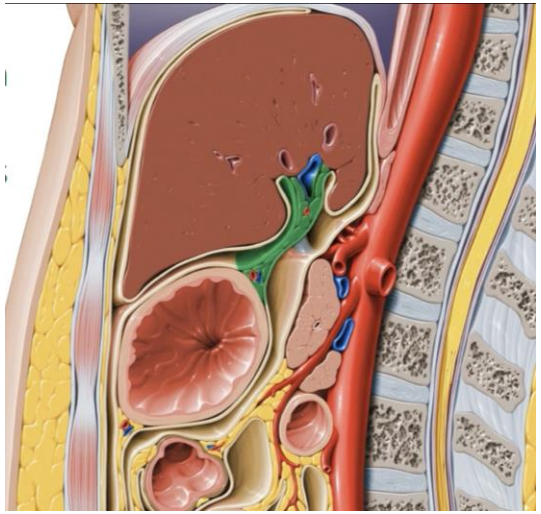
Omental bursa……cont

Walls of the lesser sac：

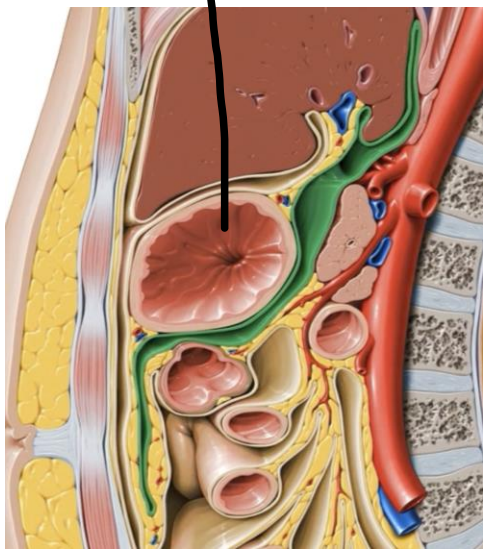
- **Superior:** peritoneum which covers the caudate lobe of liver and diaphragm
- **Anterior:** lesser omentum, peritoneum of posterior wall of stomach, and anterior two layers of greater omentum **(The lesser sac is between the 2 layers of greater omentum)**



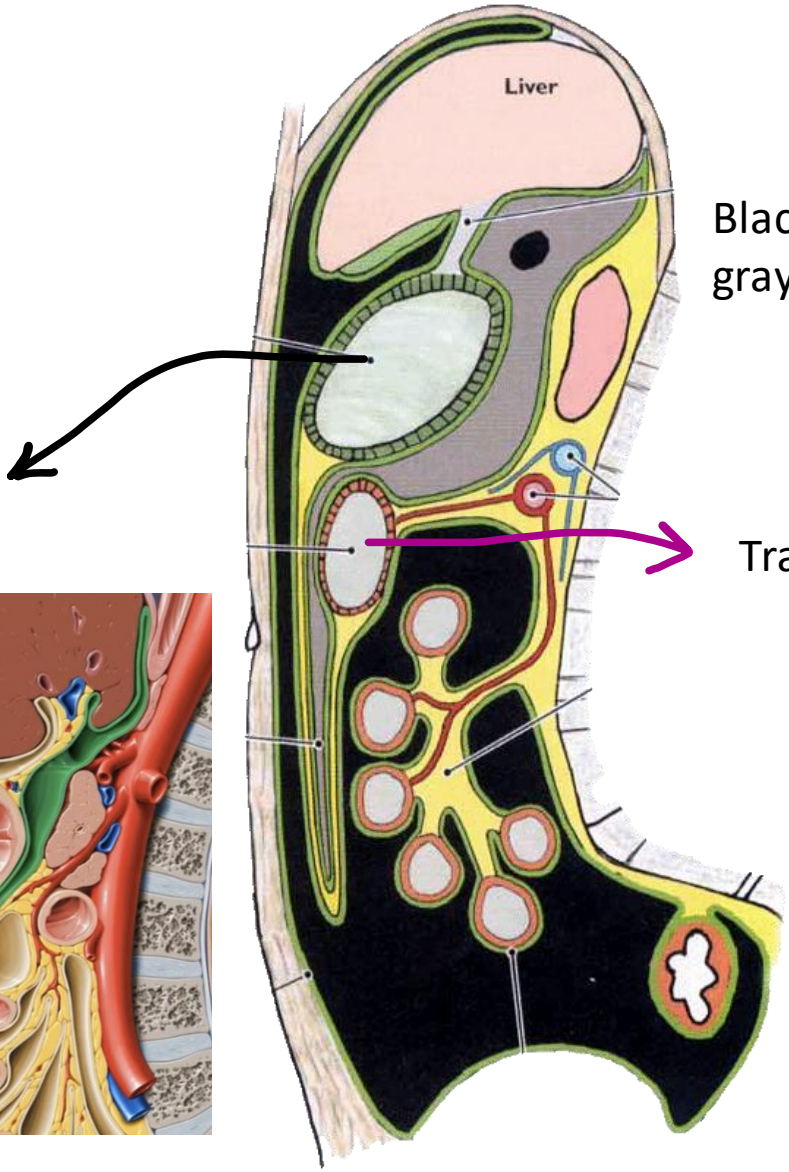
Greater omentum



Lesser omentum



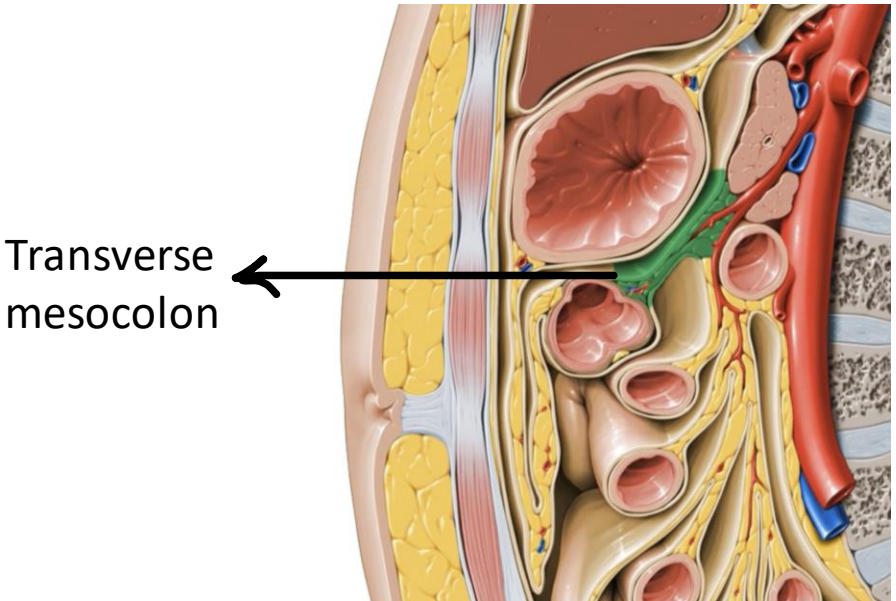
Lesser sac



Omental bursa……cont

- **Inferior:** conjunctive area of anterior and posterior two layers of greater omentum **(junction between the 2 layers of greater omentum)**

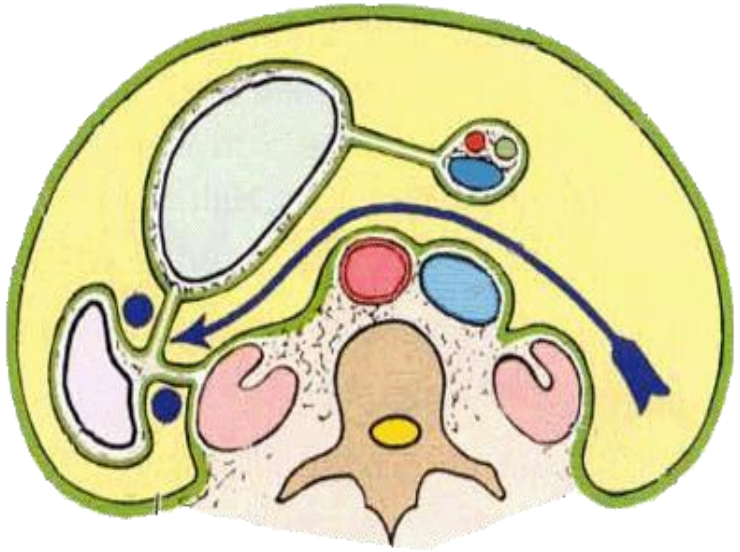
- **Posterior:** posterior two layers of greater omentum, transverse colon and transverse mesocolon **(when the 2 layers of peritoneum rejoin again after covering the transverse colon they form the mesocolon)**, peritoneum covering posterior abdominal wall.

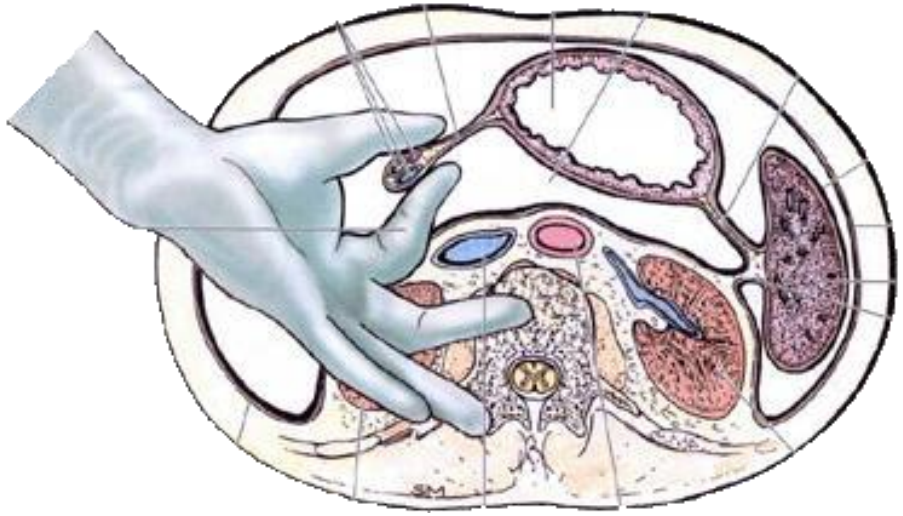


Omental bursa……cont

- **Left:** spleen, gastrosplenic Ligament**(between stomach and spleen) ,**splenorenal ligament **or lienorenal(between spleen and kidney)**

- **Right:** omental foramen**(foramen of winslow)**



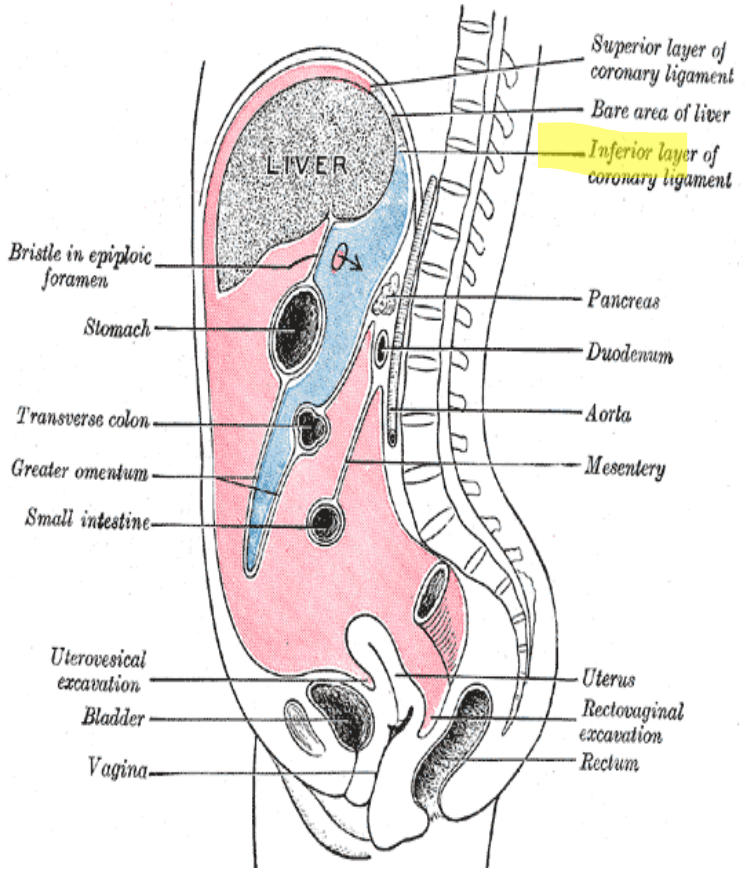


Greater sac

- Deep to ant. Abdominal wall
- Below the diaphragm
- Above pelvic viscera
- Out to:
- Liver is completely surrounded by peritoneum except bare area

  Bare area(dull area) is a point on the upper surface of liver which is not covered by peritoneum (all the liver will be glistening and shiny because the lining visceral peritoneum except this area)
- Stomach is completely surrounded by peritoneum
- Transvers colon **(completely surrounded by peritoneum)**
- Greater omentum: two layers of peritoneum from greater curvature of stomach
- Duodenum: just the anterior surface is covered by peritoneum**(it is retroperitoneal organ except first inch which is covered by the peritoneum surrounding the stomach and last inch which is covered by the peritoneum surrounding the jejunum)**
- Small intestine : peritoneum surrounds all the intestine

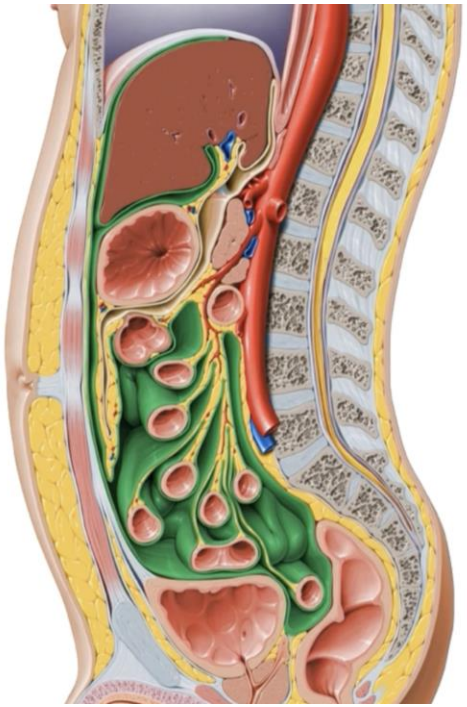
& form mesentery



Greater sac

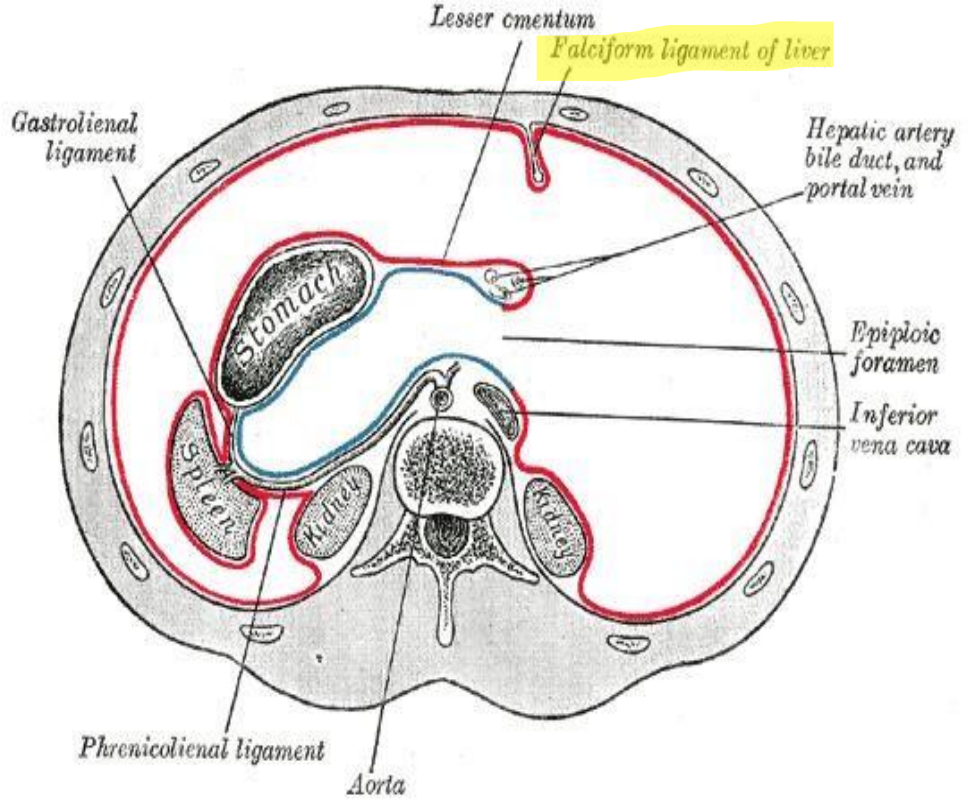
Now we will discuss the greater sac in more detail, it is Subdivided into :

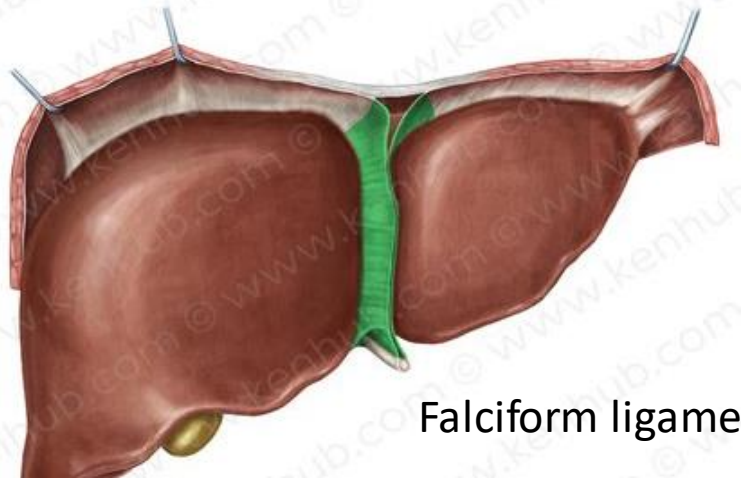
- Antero- superior part
- Postero - inferior part



- **Antero – superior** is divided by Falciform ligament of the liver into:
- Right part(space)
- Left part(space)

Falciform ligament is 2 layers of peritoneum divides the liver into right and left lobes connected with diaphragm and anterior abdominal wall (we can insert our finger in the right side of the ligament and the left side because it forms 2 spaces)

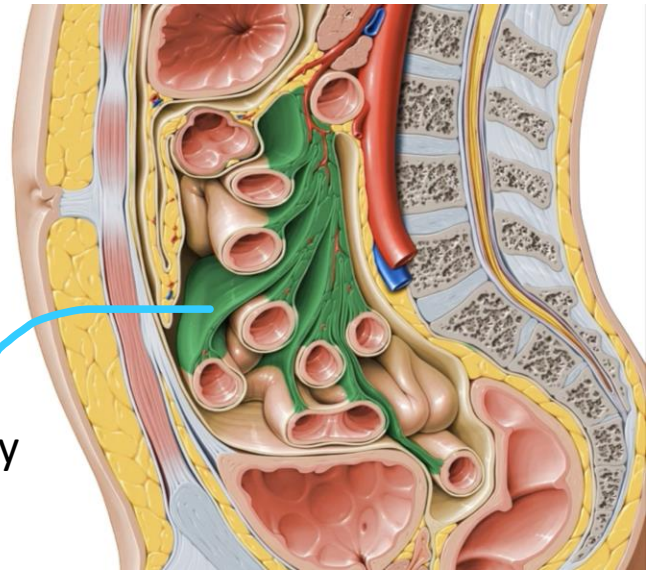


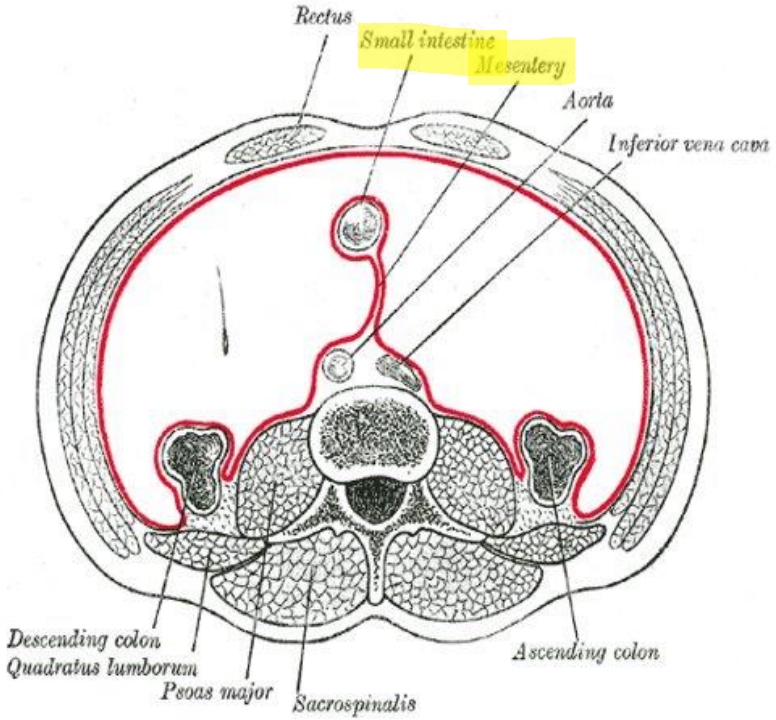


Falciform ligament

Greater sac……cont

- **Postero – inferior** is divided by mesentery & small intestine into:
- Right part(space)
- Left part(space)

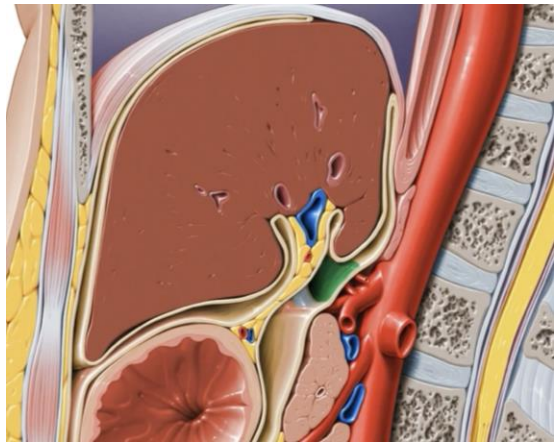


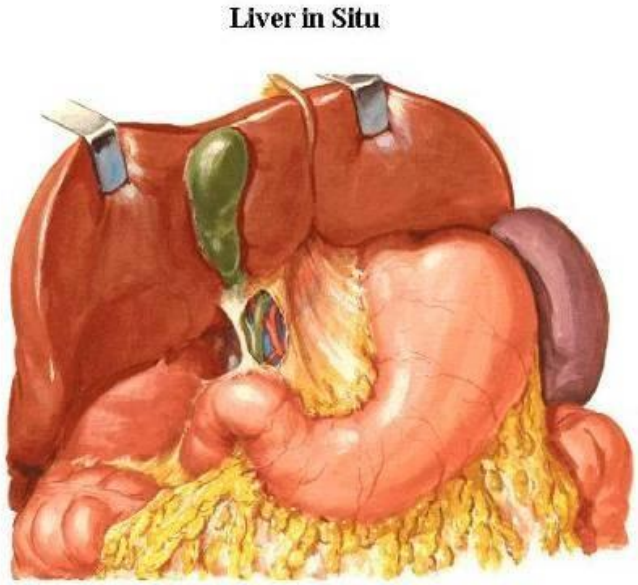


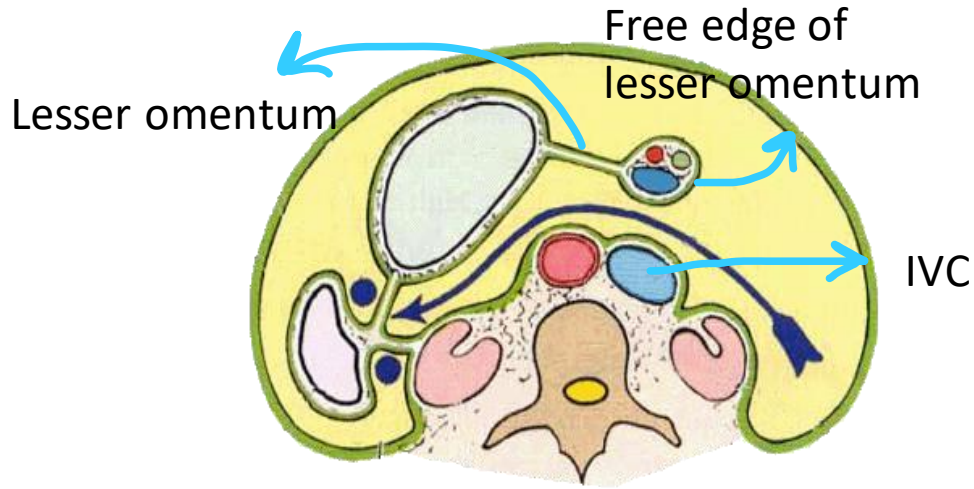
Omental (epiploic)foramen

This topic is important

- Foramen of winslow
- Position:
  - lies between the liver and duodenum
  - just above the first part of the duodenum
  - behind the lesser omentum (deep to lesser omentum)
  - infront of the inferior vena cava(IVC)and aorta
  - short, vertically flattened passage, about 3cm

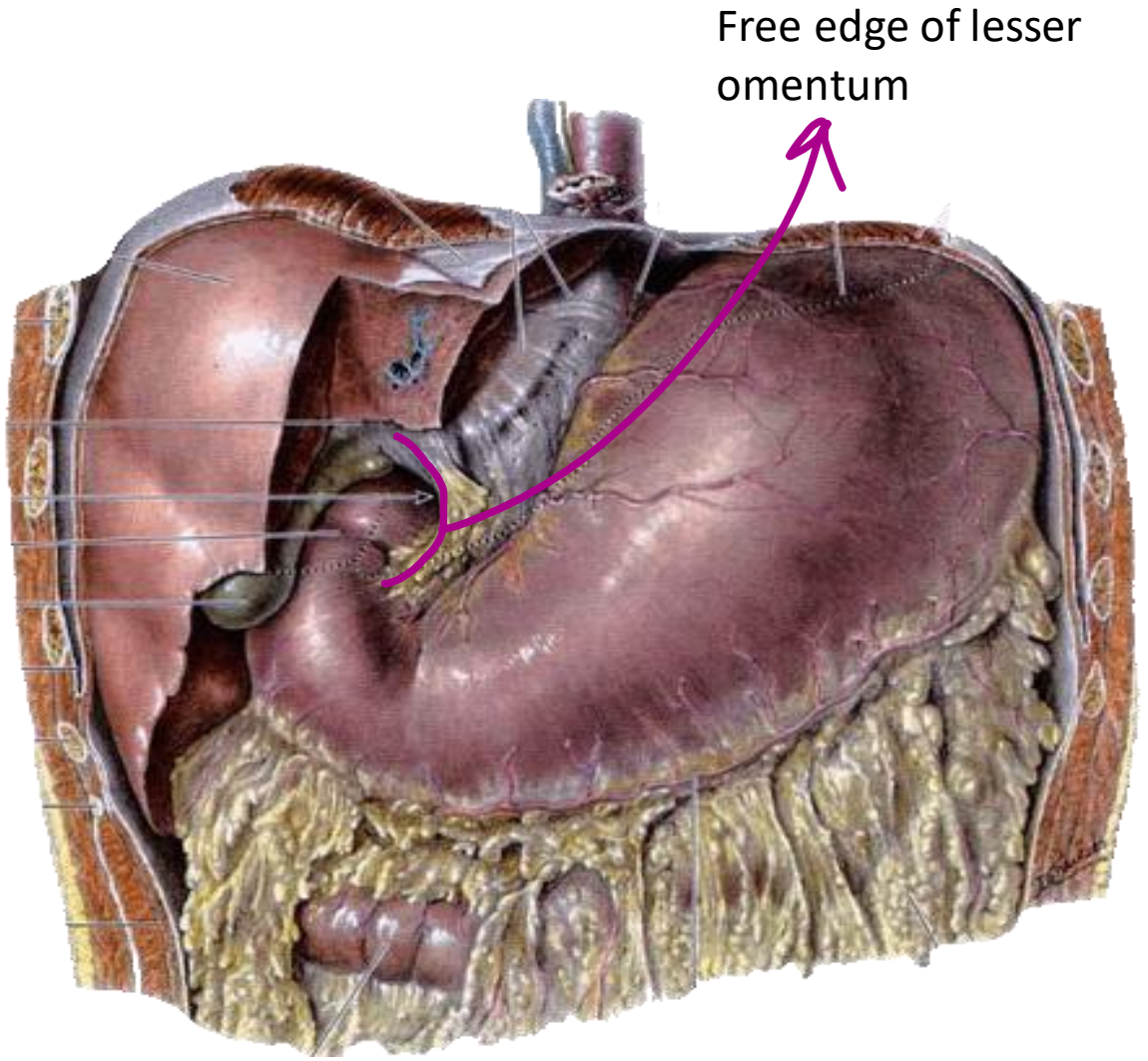






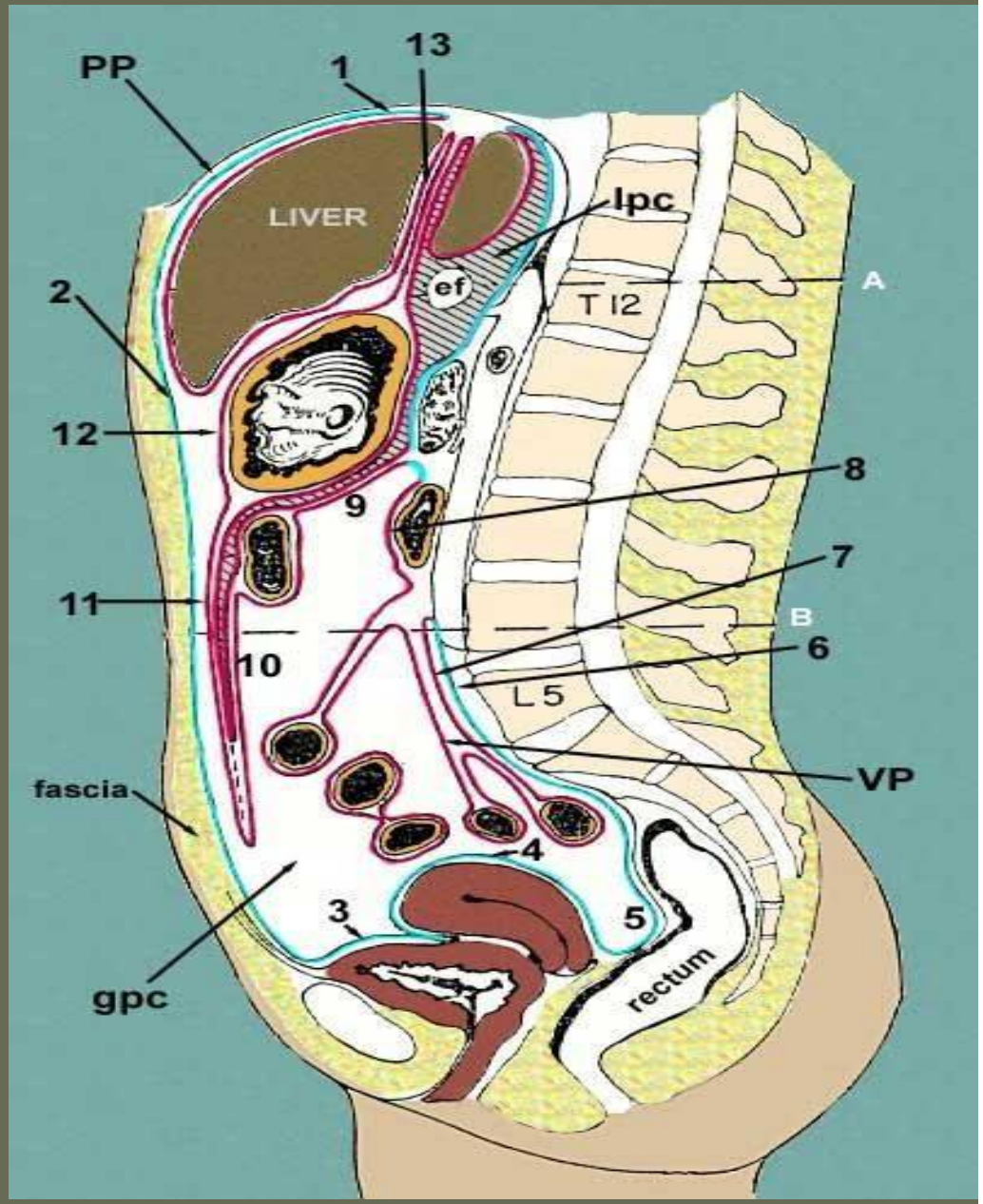
عكست الصورة لاني حسيت
هيك اوضح للتخيّل

Omental foramen



Epiploic foramen…cont

The omental bursa (lesser sac) communicates with the greater sac through the **omental foramen.**



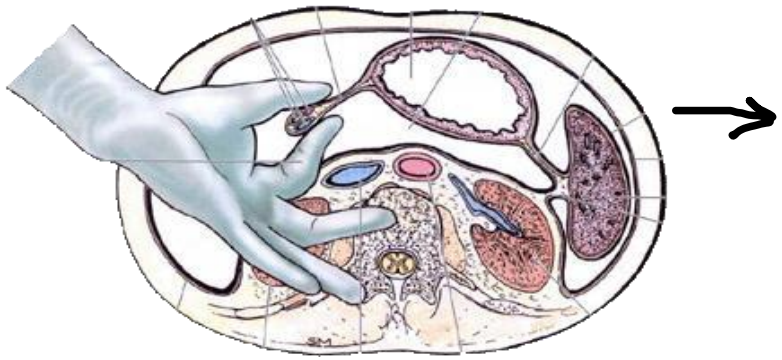
Epiploic foramen

important

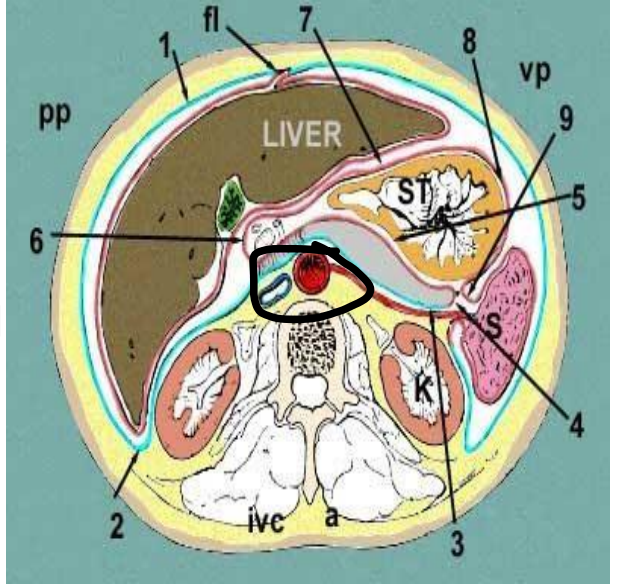
- Boundaries
- Anteriorly: Free border of lesser omentum(6) which contains:
  1 Bile duct(Rt & ant)
  2 Hepatic artery(Lt & anT)
  3 Portal vein(post.)

These 3 structures are important to Stop bleeding of liver during surgery after trauma, by using clamp.
بستعمل ملقط بسكر هم كلهم

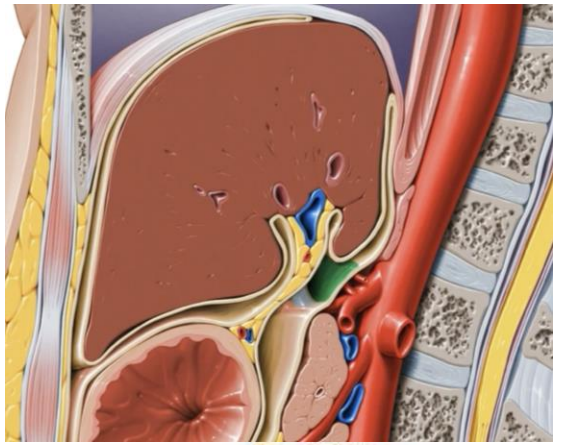
- Posteriorly: I.V.C
- Superiorly
  Caudate process of caudate lobe of liver
- Inferiorly: First part of duodenum



To understand Posterior boundary



To understand superior boundary



To understand anterior and inferior boundaries

Function of the peritoneum

- Secretes a lubricating serous fluid **(between visceral and parietal)** that continuously moistens the associated organs

- Fat storage **majority of peritoneum such as greater and lesser omentum and mesentery are filled with fat cells (which is important for energy)**

- **Defense role:** the presence of lymphatic vessels & nodes **any infection in the organs of abdominal cavity (viscera) will be surrouded by greater omentum which contains many lymphoid tissue to localize the infection and prevent it from spreading. Such as In case of appendectomy if the appendix wasn't surrounded by greater omentum it may not be infection**

- Support viscera **fixed**

The relationship between viscera and peritoneum

- **Intraperitoneal viscera**
- viscera is almost totally covered with visceral peritoneum
- example, stomach, 1st & last inch of duodenum, jejunum, ileum, cecum, vermiform appendix, transverse and sigmoid colons, spleen and ovary

Question: all of the following are intraperitoneal structures except :

a. stomach

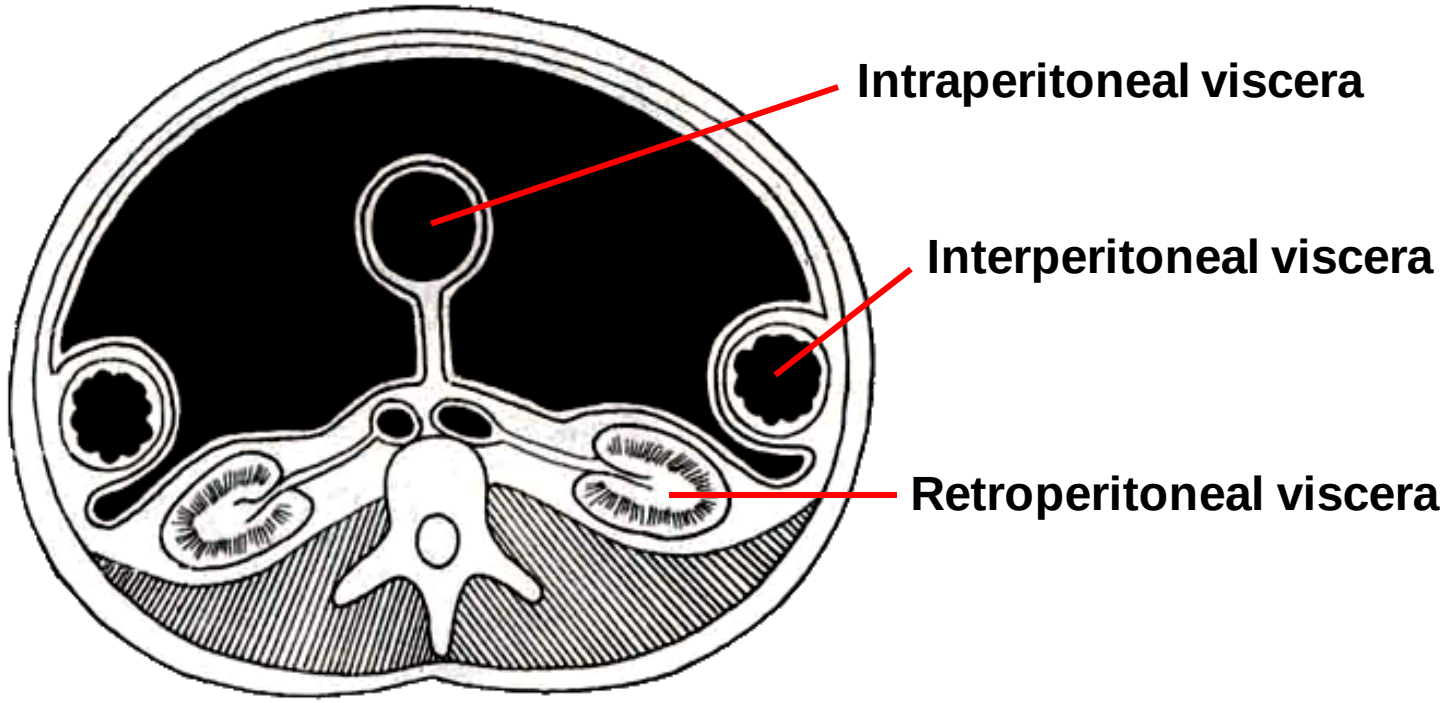
B. jejunum

c. ileum

d. first inch of duodenum

e. first part of duodenum

Ans: **E** because the first part is 2 inches



The relationship between viscera and peritoneum

Retroperitoneal viscera

- some organs lie on the posterior abdominal wall
- Behind the peritoneum (peritoneum is in front for support)
- they are partially covered by peritoneum on their anterior surfaces only
- **Example**

kidney, suprarenal gland, pancreas, descending and ascending
colon, upper 3rd of rectum

duodenum, and ureter, aorta and I.V.C

The relationship between viscera and peritoneum....cont

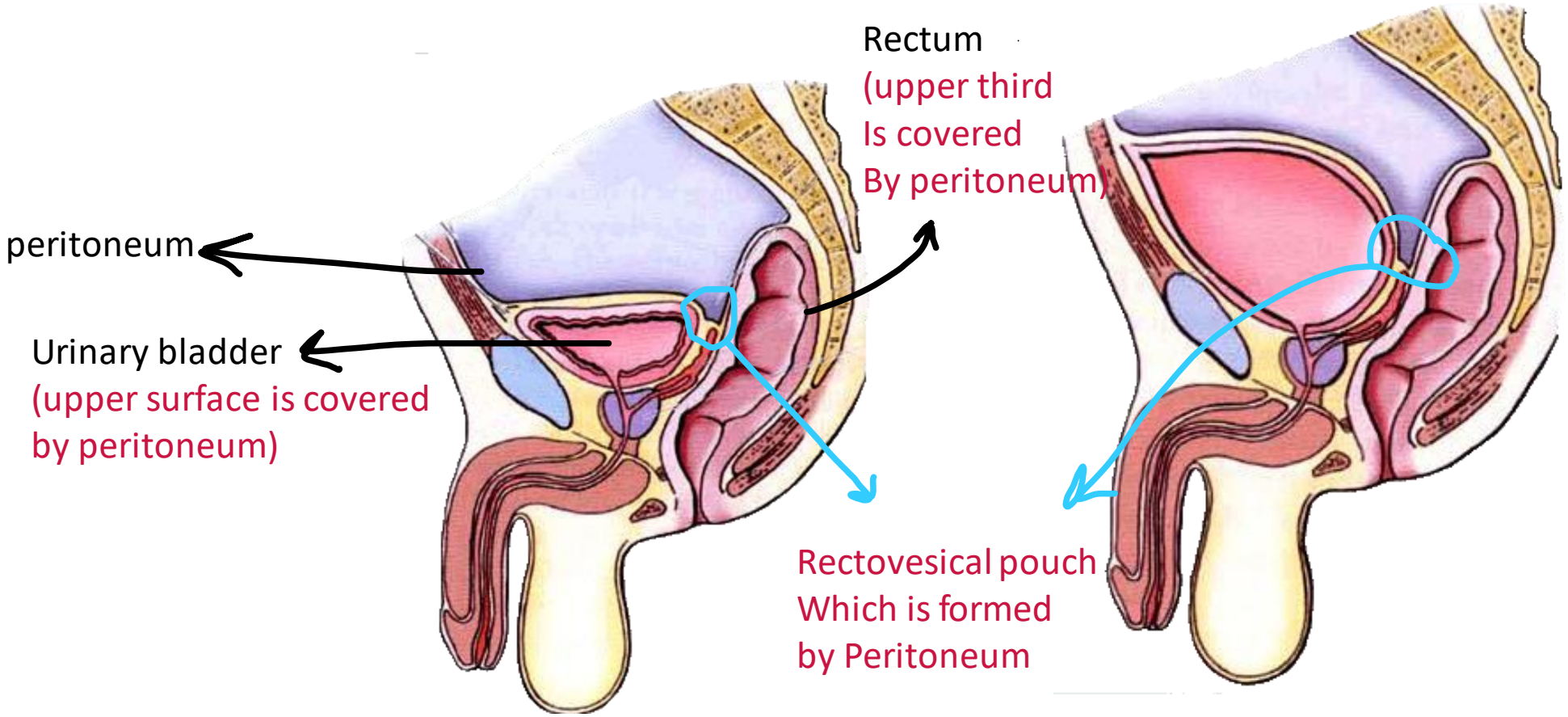
Interperitoneal viscera

- Such organs are not completely wrapped by peritoneum **(from the upper surface only for example)**
- one surface attached to the abdominal walls or other organs.
- **Examples:**

Liver**(bare area is not covered by peritoneum)**, gallbladder**(covered by peritoneum on the upper surface , peritoneum also covers the anterior surface of the gallbladder because its embedded in the liver)**, urinary bladder and uterus

(Uterus is covered anteriorly then peritoneum covers the fundus of uterus then it continue in the posterior abdominal wall)

Interperitoneal viscera



The peritoneal reflections or folds

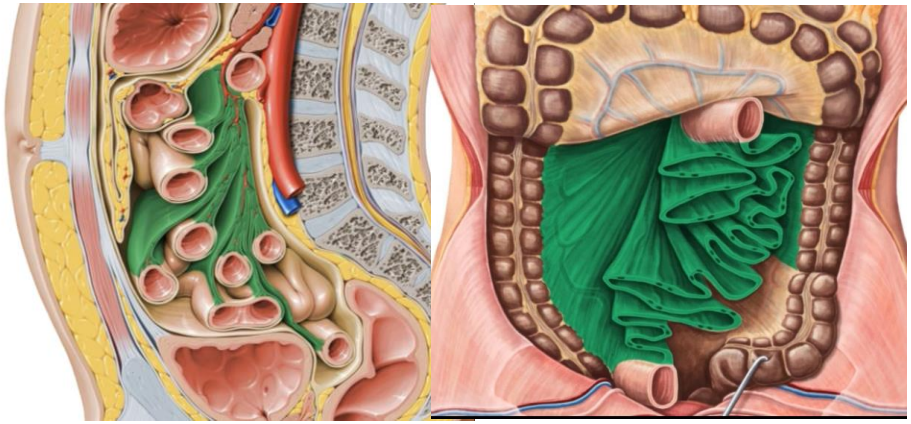
- **Parietal peritoneum converts into visceral peritoneum to surround the viscera which will form the folds that we will discuss now: mesentery and mesocolon**
- Certain terms, often arbitrary, are commonly used for the peritoneal reflections.
- A peritoneal reflection that connects the intestine and body wall is usually named according to the part of the gut to which it is attached.
- For example, the reflection to jejunum and ileum is termed the **mesentery**, that to the transverse colon is the **transverse mesocolon**.***check next slide to understand***
- Some peritoneal reflections between organs or between the body wall and organs, are termed ligaments or folds **such as gastrosplenic ,splenicorenal and the ligaments of liver** . Most of such ligaments or folds contain blood vessels. Broad peritoneal sheets associated with stomach are termed omenta.

-Ligaments are 2 layers of peritoneum attached to organs for fixation .In between these 2 layers there are fatty tissue ,lymphatic tissue ,nervers -sympathatic and parasympathatic- and lymph nodes.

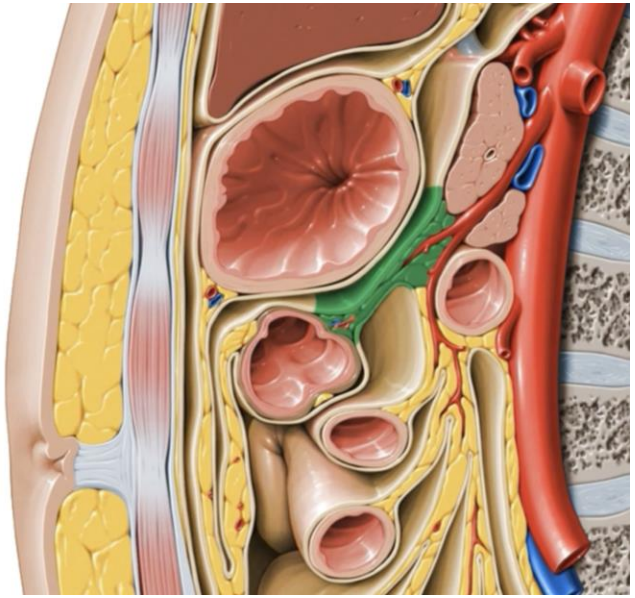
-Ligaments contribute in blood supply to the organs of attachment and venous drainage from these organs too

-Additionally ,there are some folds which result from the formation of these ligaments and mesentery .They have disadvantages ,for example around the duodenum they forms recesses or pouches which can cause internal hernia(part of small intestine in the pouch)

Mesentery of small intestine : 2 layers of peritoneum that extends from posterior abdominal wall surrounding jejunum and ileum (which are located in the free edge of mesentery)
So the root of mesentery is the posterior abdominal wall and its free edges contain jejunum and ileum .



Transverse mesocolon : 2 layers of peritoneum (the ascending 2 layers of greater omentum after covering the transverse colon they rejoin and forms the mesocolon and ends in the anterior border of pancreas)



Omenta(greater and lesser)formed by reflection of peritoneum similar to mesentery and mesocolon ,but the difference that it contains excess of fatty tissue and this is our next topic

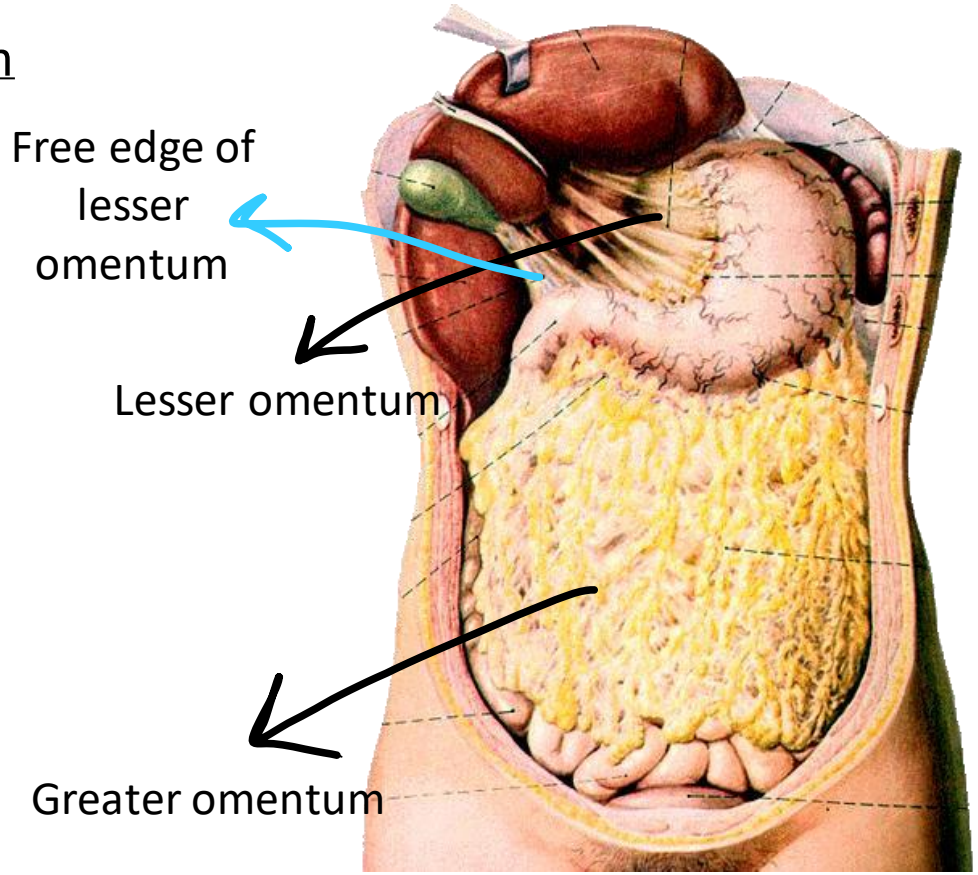
1- Omenta :

-Two-layered fold of peritoneum that extends from stomach to adjacent organs

-Two types of omenta : Lesser omentum and Greater omentum

First lets discuss everything about greater omentum that doctor mentioned then we will discuss the lesser omentum

-Greater omentum: From the greater curvature and first part of duodenum (descends as 2 layers in abdominal cavity and ascends as 2 layers to surround the transverse colon). Lesser sac is between these 4 layers (2 double layers).



-Contents between the descended layers:

- **Right and left Gastroepiploic vessels**
- **Lymph nodes & lymphatic vessels**
- Fat
- Autonomic N.S → **sympathetic + parasympathetic (vagus nerve)**

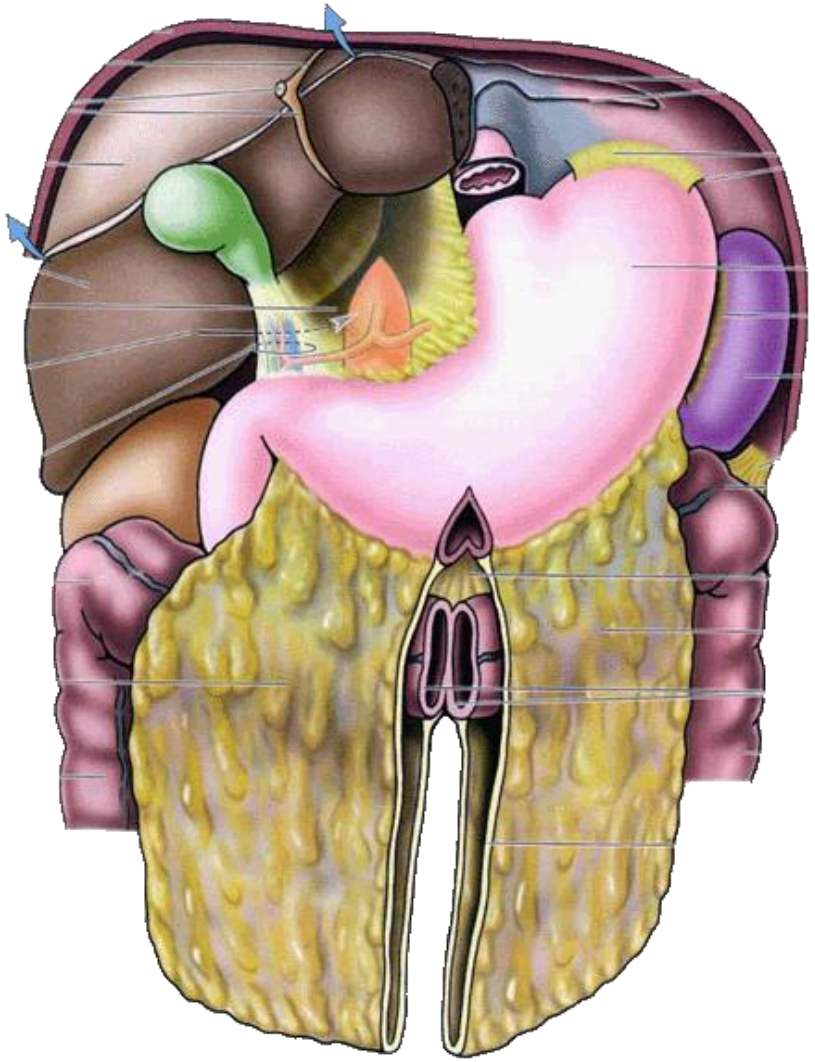
Greater omentum

-It is the largest peritoneal fold.

-It consists of a double sheet, folded on itself so that it is made up of four layers.

The anterior two layers descend from the greater curvature of stomach and superior part of duodenum and hangs down like an apron in front of coils of small intestine then turn up on the back of itself, and ascend to the transverse colon

- the two layers are separated to cover the anterior and posterior surfaces of transverse colon. Then they form the transverse mesocolon

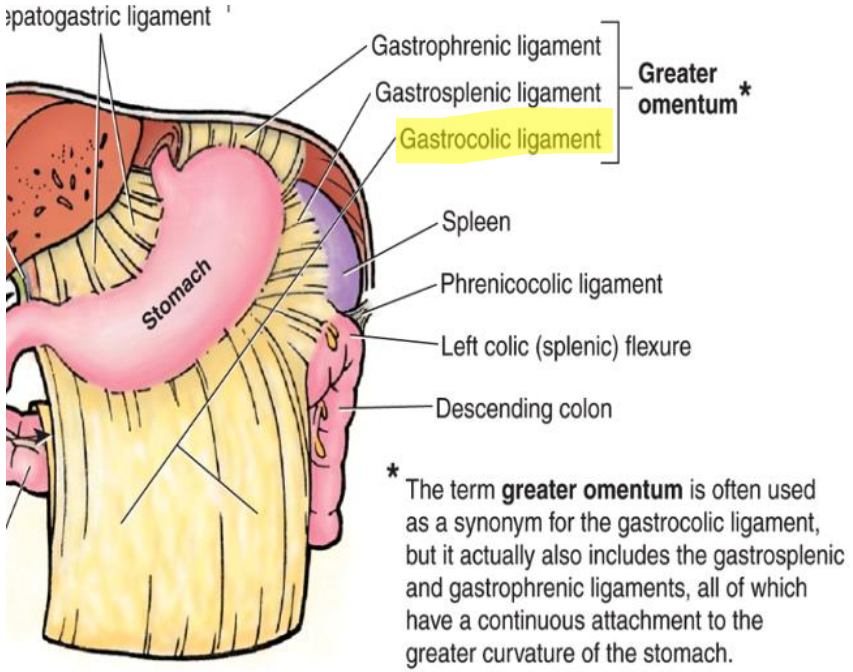


Transverse colon

Lesser sac

-Doctor repeated many times that 2 layers of greater omentum descend In the abdominal cavity and ascend again to cover the transverse colon **and when they rejoin again they form the mesocolon** and end at the anterior border of pancreas

- The upper part of the greater omentum which extends between the stomach and the transverse colon is termed the **gastrocolic ligament.**
- In adult, the four layers of greater omentum are frequently adhered together, and are found wrapped about the organs in the upper part of the abdomen



Functions of greater omentum

- protective function: The greater omentum contains numerous fixed macrophages, which performs an important protective function.
- storehouse **(storage)** for fat: The greater omentum is usually thin, and presents a cribriform apperarance, but always contains some adipose tissue, which in fatty people is present in considerable quantity. **(fat is important for energy)**
- migration and limitation **(localization of the infection)**: The greater omentum may limit spread of infection in the peritoneal cavity. Because it will migrate to the site of any inflammation in the peritoneal cavity and wrap itself around such a site, the greater omentum is commonly referred to as the "policeman" of the peritoneal cavity.***we mentioned this point earlier***

Lesser omentum

- Two-layered fold of peritoneum
- Extends from porta hepatis, fissure of ligamentum venosum and the diaphragm to lesser curvature of stomach and superior part of duodenum

Lesser omentum : from the porta hepatis of the liver and lesser curvature of the stomach

It has free edge which contains the 3 structure we have mentioned earlier.

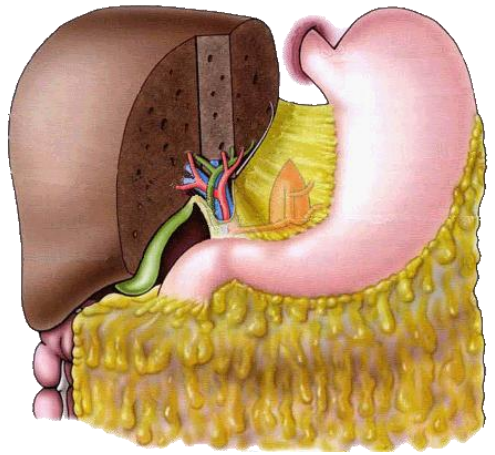
-Contents:

- **Blood vessels: Rt. & Lt. gastric vessels**
- **Lymph nodes & lymphatic vessels**
- Fat
- Autonomic N.S: **sympathetic + parasympathetic (right and left vagus nerve)**

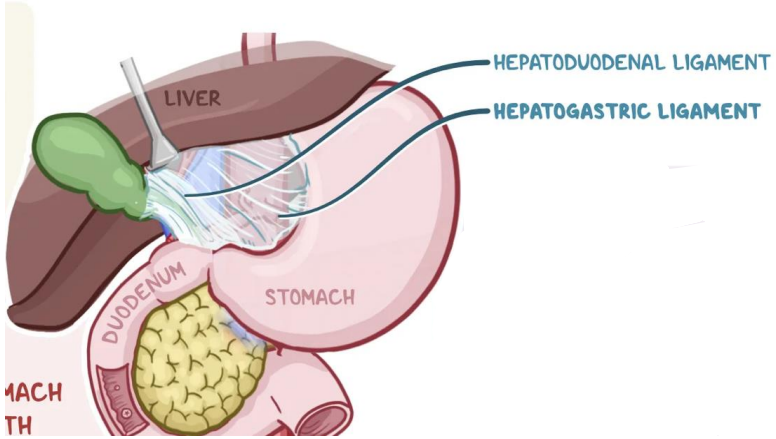
Lesser omentum

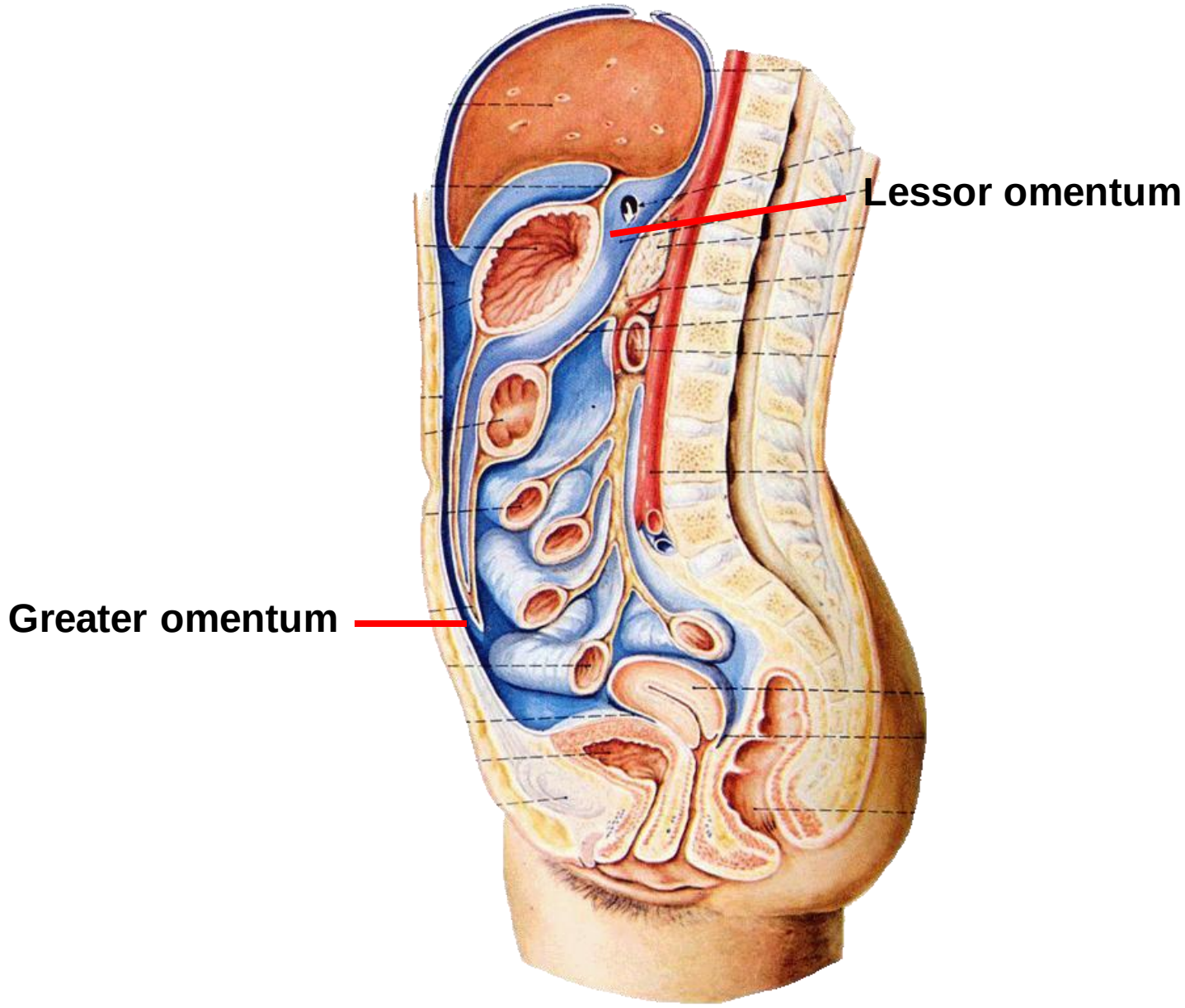
Some books separate lesser omentum into 2 ligaments

1-<u>Hepatogastric ligament</u>(lesser curvature)
from porta hepatis to lesser curvature of stomach
2-<u>Hepatoduodenal ligament</u>(first inch of duodenum)
Both ligaments form lesser omentum



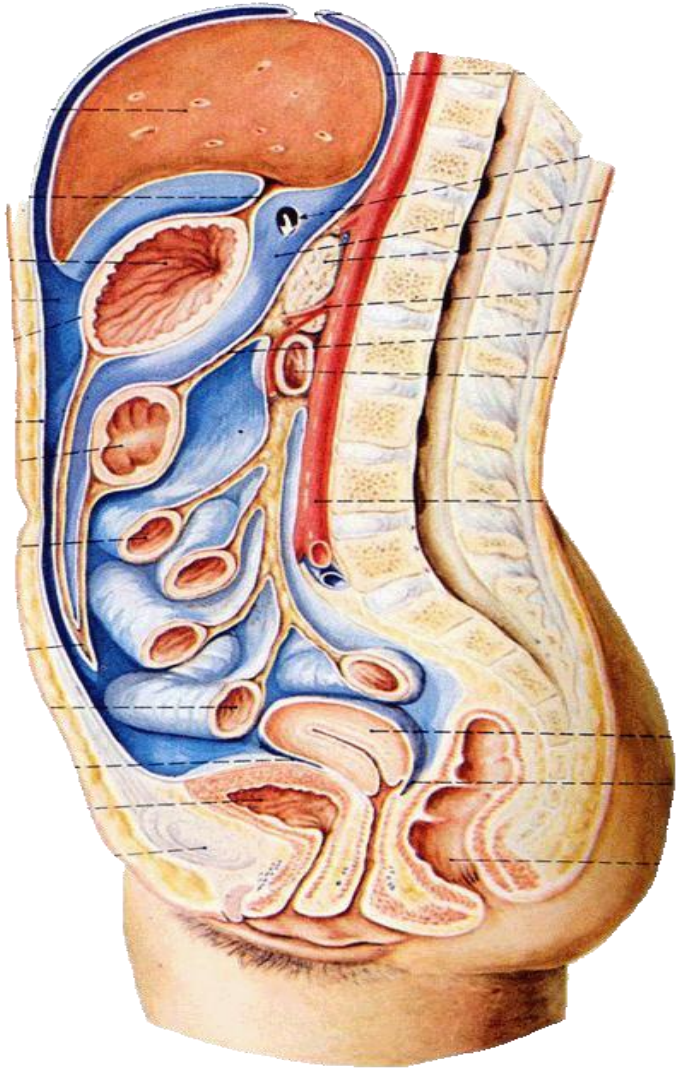
- Extends from porta hepatis to superior part of duodenum,
- at its free margine enclose 3 structures(3 key structures) **common bile duct Ant.**
proper hepatic a At the Lt. of the common bile duct
hepatic portal v post.

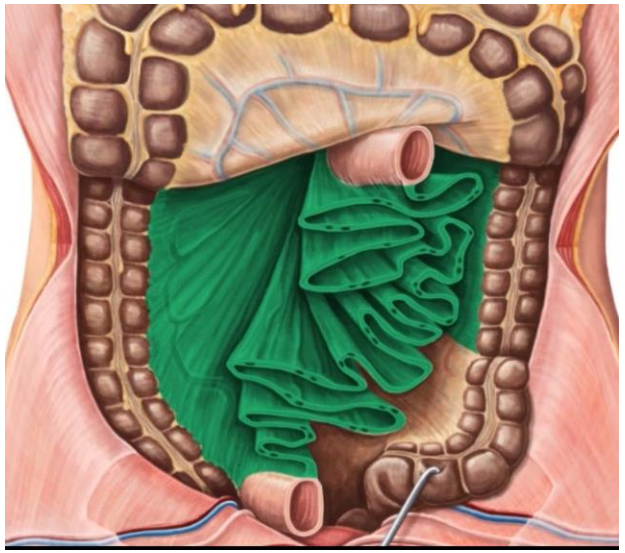



Lessor omentum
Greater omentum

2- Mesenteries of the peritoneum

Two-layered fold of peritoneum that attach the intestines to the posterior abdominal wall





The root of the mesentery (6 inches, 15 cm) it is starts as 2 layers o peritoneum, attach to the posterior abdominal wall at the duodenojejunal junction exactly at L2 one inch to the left, and ends at ileocecal junction in front of right sacroiliac joint. Contain jejunum & ilium.

- The breadth, width is about 8 inches.
- The free edge is 6 meters, Contain jejunum & ilium.

1- Mesentery of small intestine

suspends the small intestine from the posterior abdominal wall

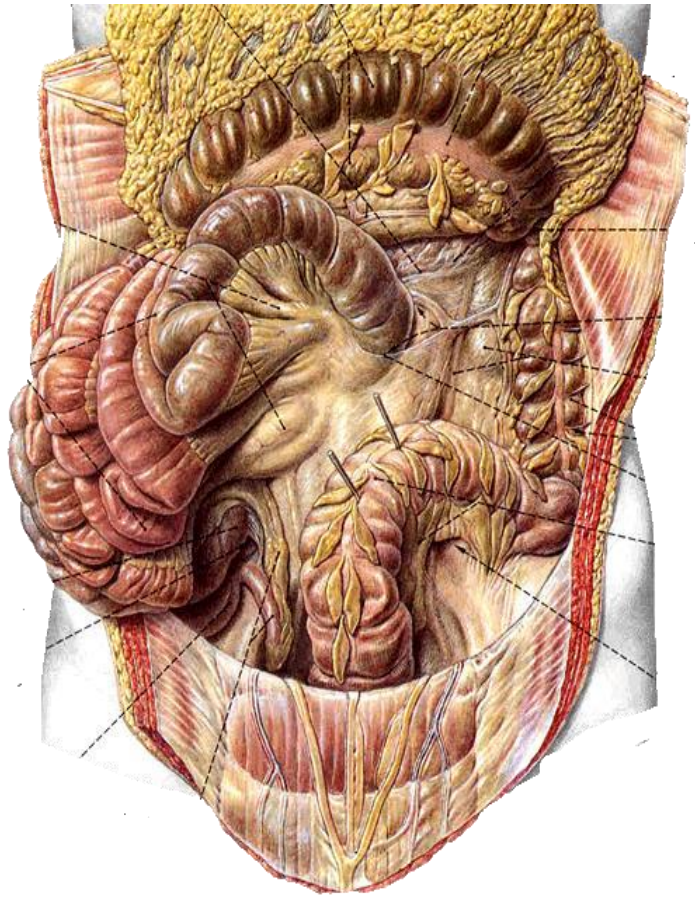
-Broad and a fan- shaped

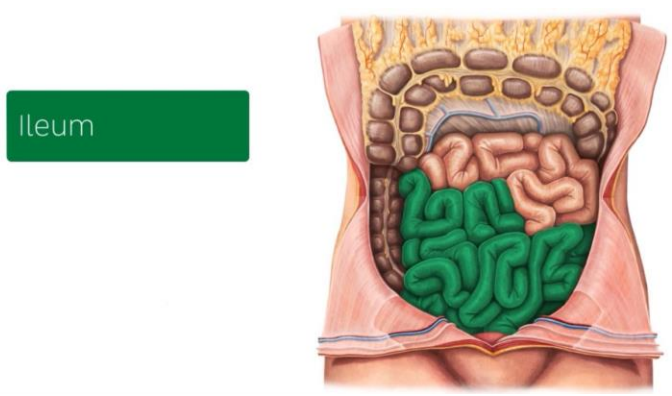
- Root of mesentery
  - 15 cm long
  - Directed obliquely from left side of L2 vertebra to right sacroiliac joint

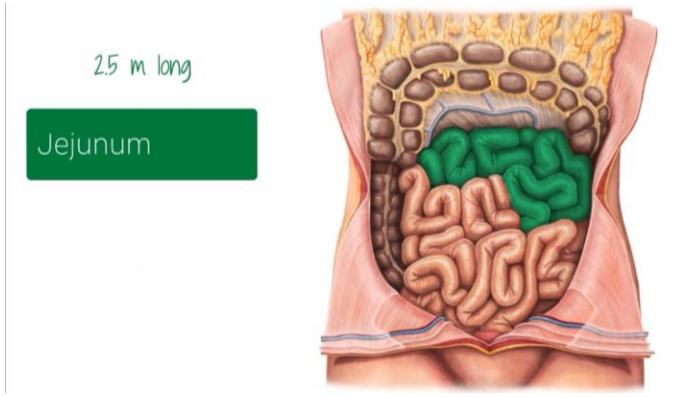
Mesentery of small intestine....cont

Contents of the mesentery

- the jejunal and ileal branches of the superior mesenteric artery &veins (make vasa recta & arcades)
- nerve plexuses
- lymphatic vessels
- the lymphatic nodes,
- connective tissue
- fat

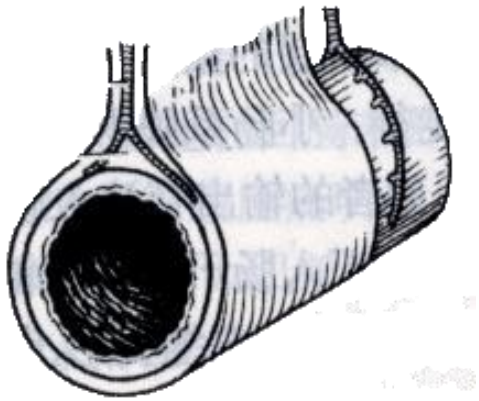


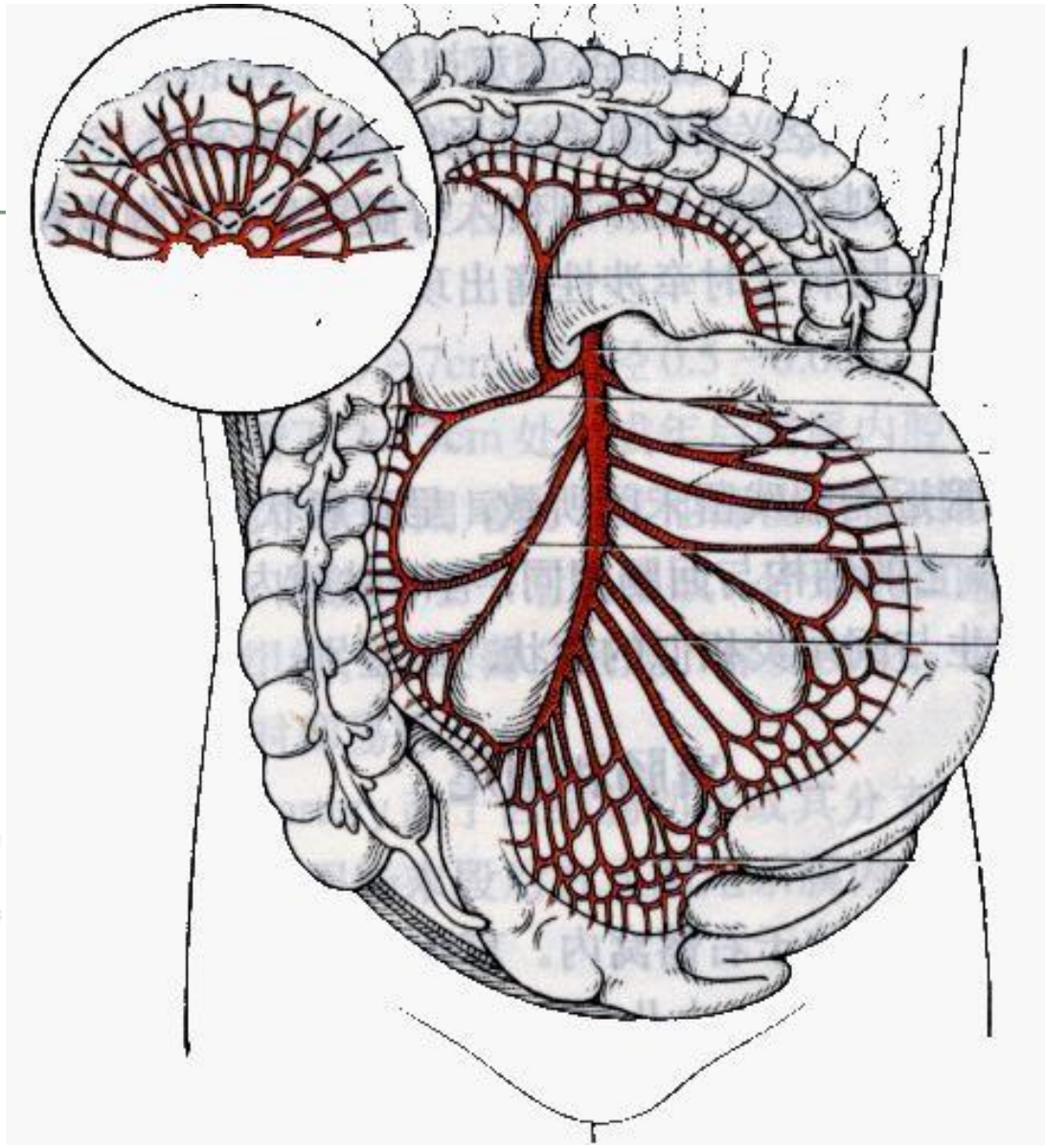




simple arcades, long vasa recta in **jejunum**

Complicated arcades, short vasa recta in **ilium**





*Arcades: spaces formed by the connection between vesseles.(شبابيك)

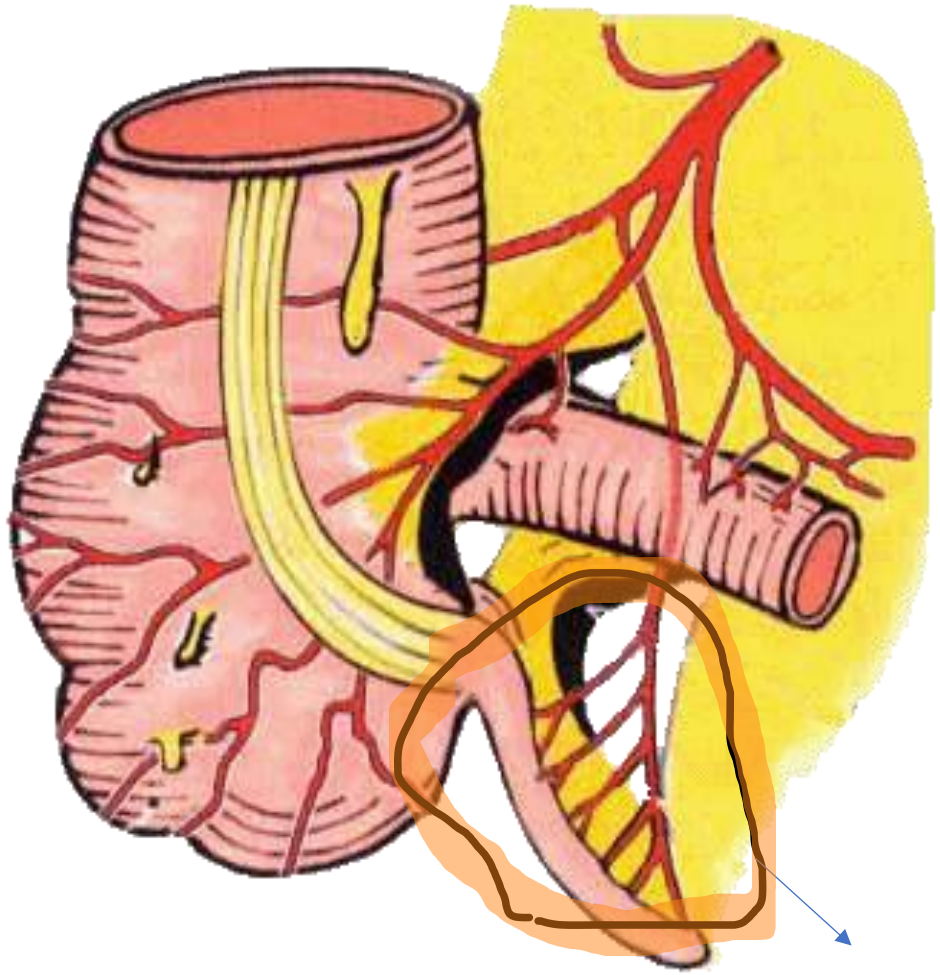
*Vasa recta: terminal branches to the small intestine.

Mesoappendix

- Triangular mesentery extends from terminal part of ileum to appendix

- Appendicular artery runs in free margin of the mesoappendix

  Have a branch from posterior cecal artery of superior mesentery called appendicular artery and opposite to it there is vein, these vessels be ligated in appendectomy.

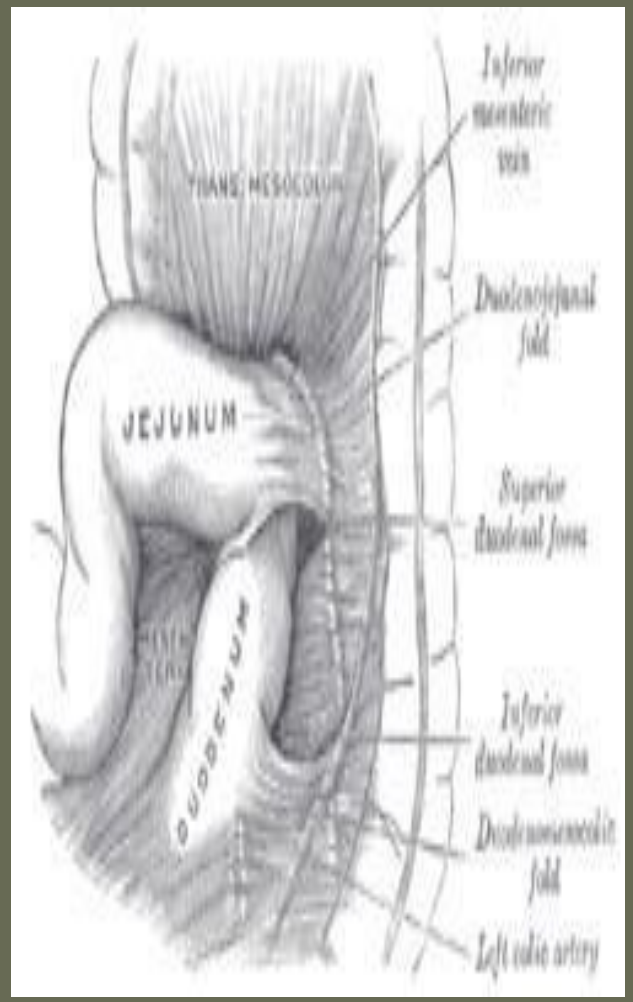


Mesoappendix in the edge of mesentery

3. The transverse mesocolon

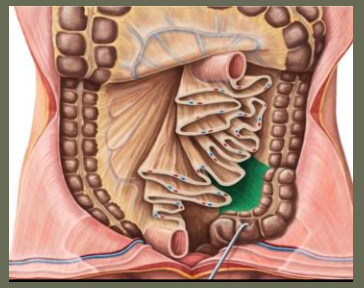
-It is a broad fold
Connects the transverse colon to the anterior border of the pancreas.
From greater omentum

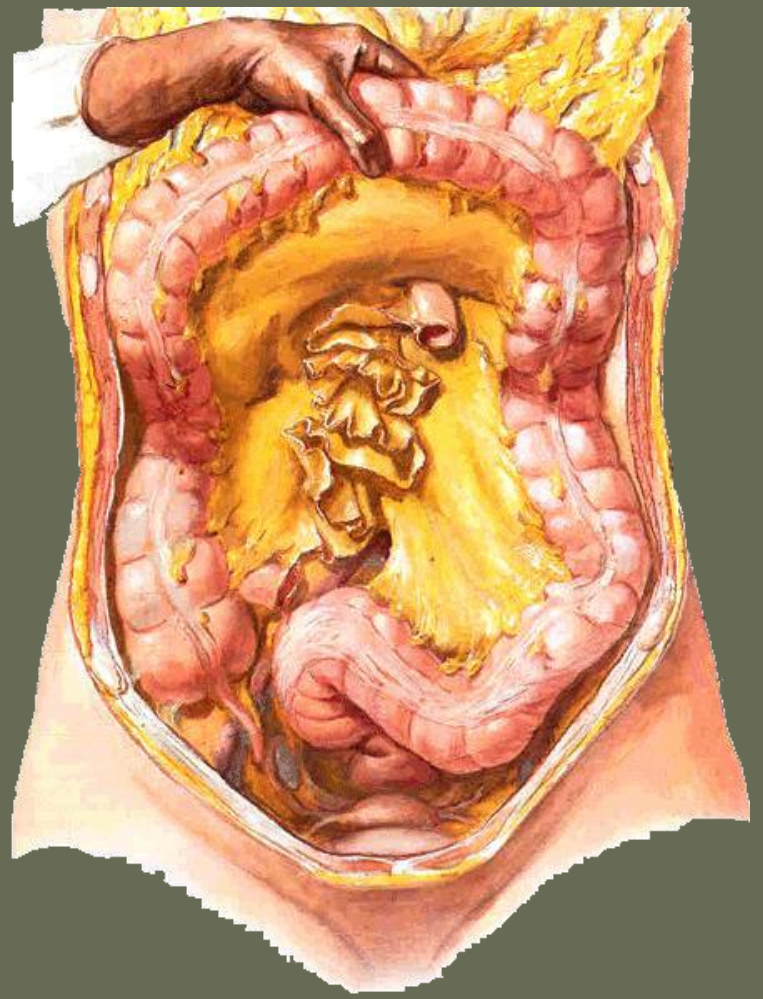
Contents
- The blood vessels
- Nerves
-lymphatic's of the transverse colon.



4- Sigmoid mesocolon

- It is a fold of peritoneum
- attaches the sigmoid colon to the pelvic wall.





Contents

- The sigmoid vessels
- Lymphatic vessels
- Nerves

- The left Ureter descends into the pelvis behind its apex.

ligaments of the peritoneum

*Ligament: 2 layers of peritoneum but stronger than mesentery.

1. The ligaments of the liver

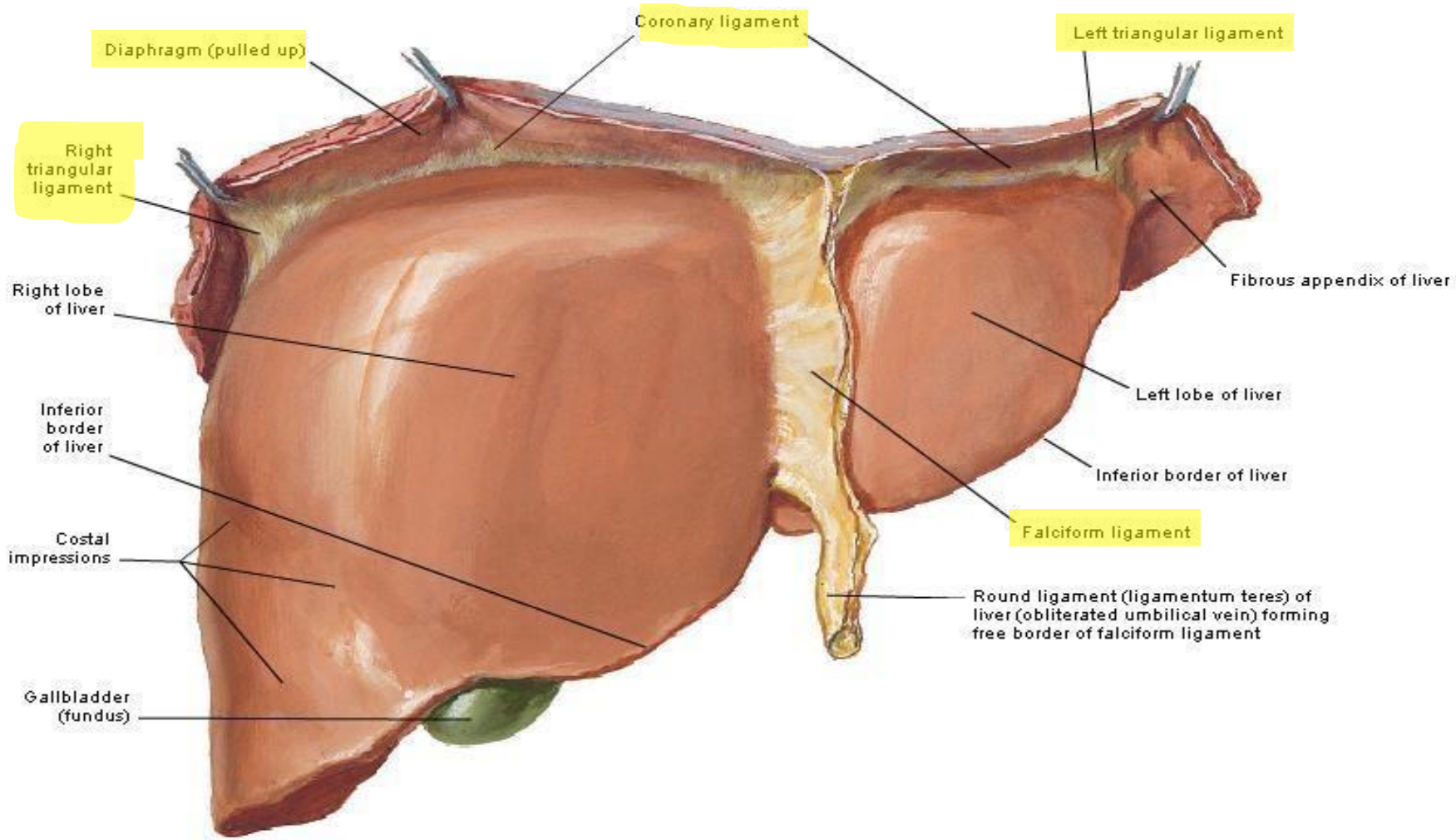
① The **falciform ligament of liver**
② The **ligamentum teres hepatis**
③ The **coronary ligament**
④ The **right triangular ligament**
⑤ The **left triangular ligament**
⑥ The **hepatogastric ligament**
⑦ The **hepatoduonedenal ligament**

Together form lesser omentum

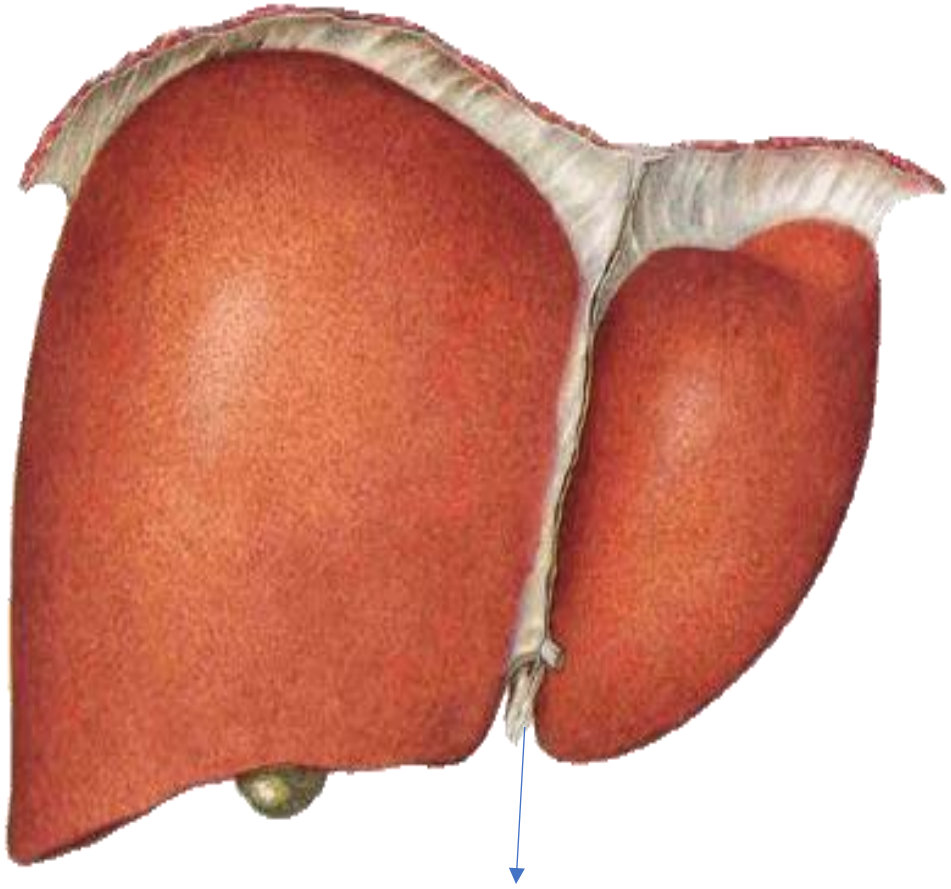
*These ligaments will be discussed during liver lec

Surfaces and Bed of Liver

Anterior View



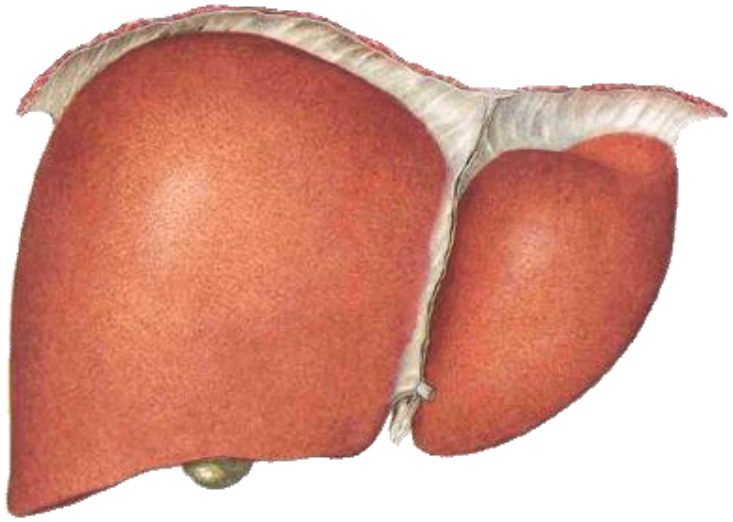
- **Falciform ligament of liver**
  - Consists of double peritoneal layer
  - Sickele shape
  - Extends from anterior abdominal wall (umbilicus) to liver
  - Free border of the ligament contains Ligamentum teres (obliterated umbilical vein)in the lower part between Lt & Rt lobes



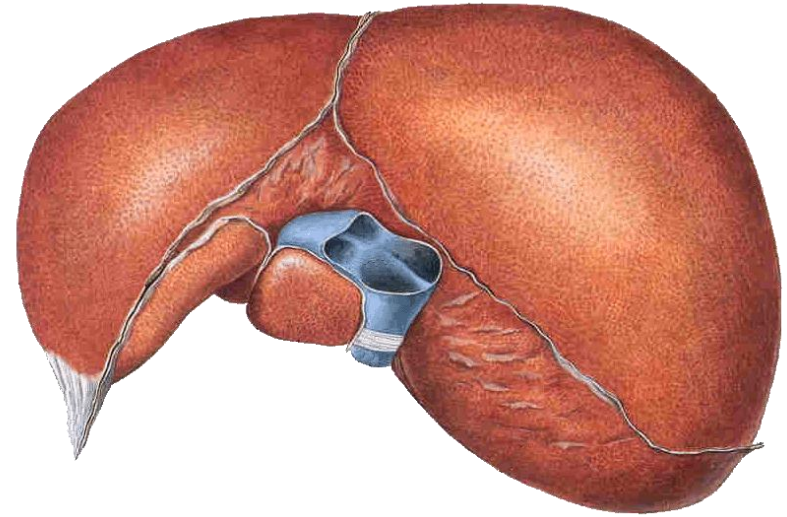
Ligamentum teres

- **Coronary ligament**

  the area between upper and lower layer of the coronary ligament is the bare area of liver which contract with the diaphragm.

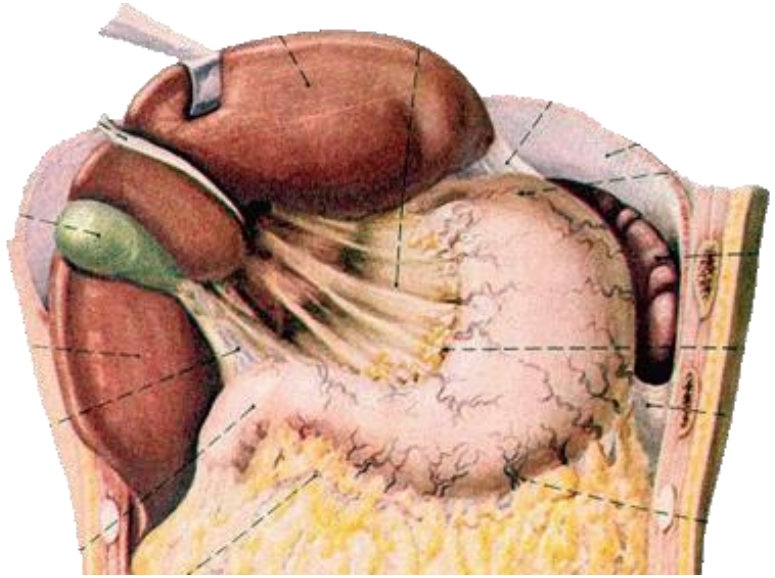


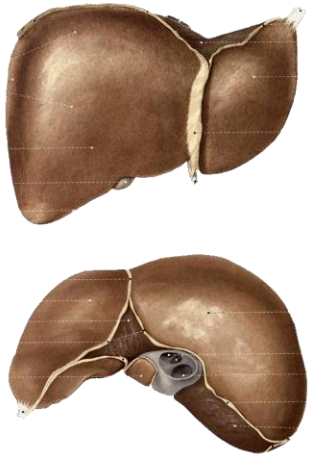
- **Left and right triangular ligaments** formed by left and right extremity of coronary ligament



- **Hepatogastric ligament**
- **Hepatoduodenal ligament**

(make Lesser omentum)





2- Ligaments of spleen

◉ Gastrosplenic ligament

- Connects the fundus of stomach to hilum of spleen.
- Contents

the short gastric & left gastroepiploic vessels pass through it.

■ Splenorenal ligament (or lienorenal)

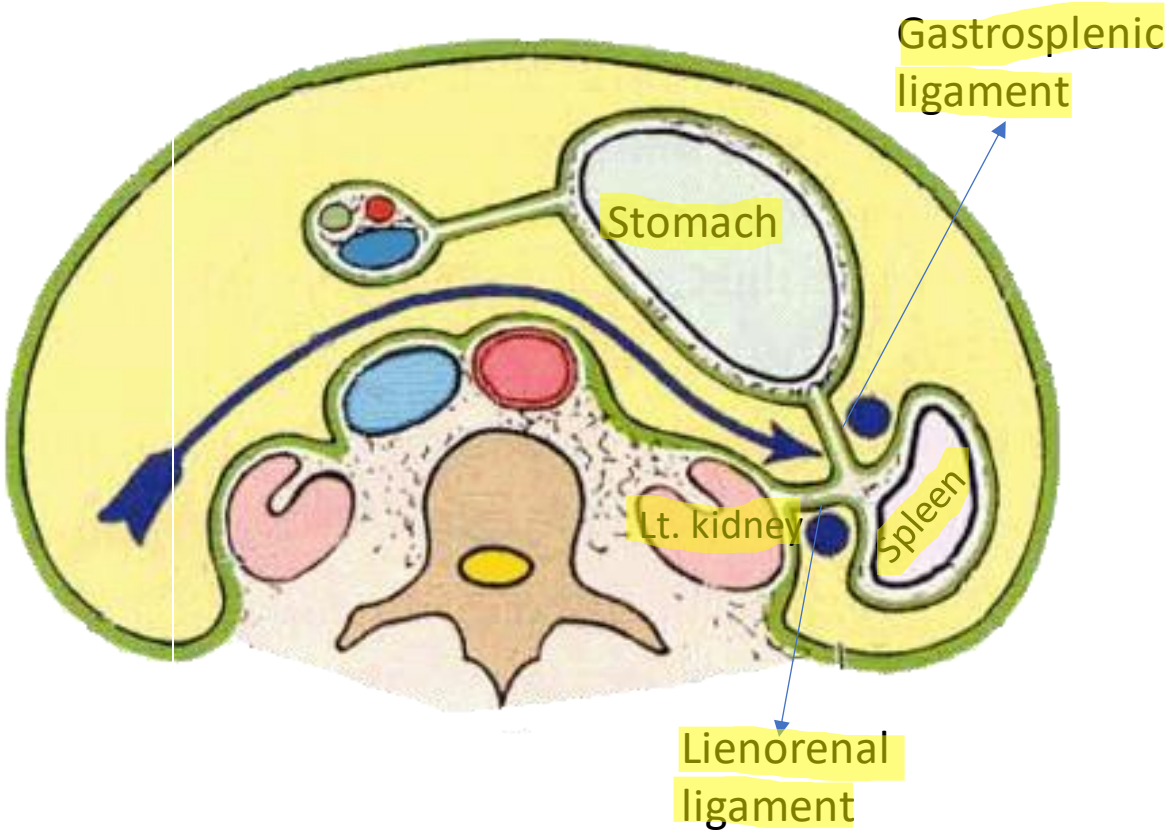
-extends between the hilum of spleen and left kidney.

- Contents

The splenic vessel

Lymphatic vessels ,nodes & nerve

the tail of pancreas



Important note !!

Any trauma on the left side can lead to fracture of ribs especially 9 & 10 & 11 , beneath these ribs there is the spleen which is a high vascular organ, the trauma lead to spleen rupture and then bleeding.

The treatment is splenectomy, but how this happens?
By cutting the splenic vessels in the splenorenal ligament (2 ligation and cut between them) then we can remove the spleen easily.

So splenorenal ligament considered important surgical point.

But note : when we do splenectomy you should preserve the tail of pancreas, any trauma on it make secretion of pancreas and cause infection in the abdomen(peritonitis: infection of all peritoneum)

- **Phrenicosplenic ligament** Between diaphragm & spleen
- **Splenocolic ligament** Between spleen & transverse colon

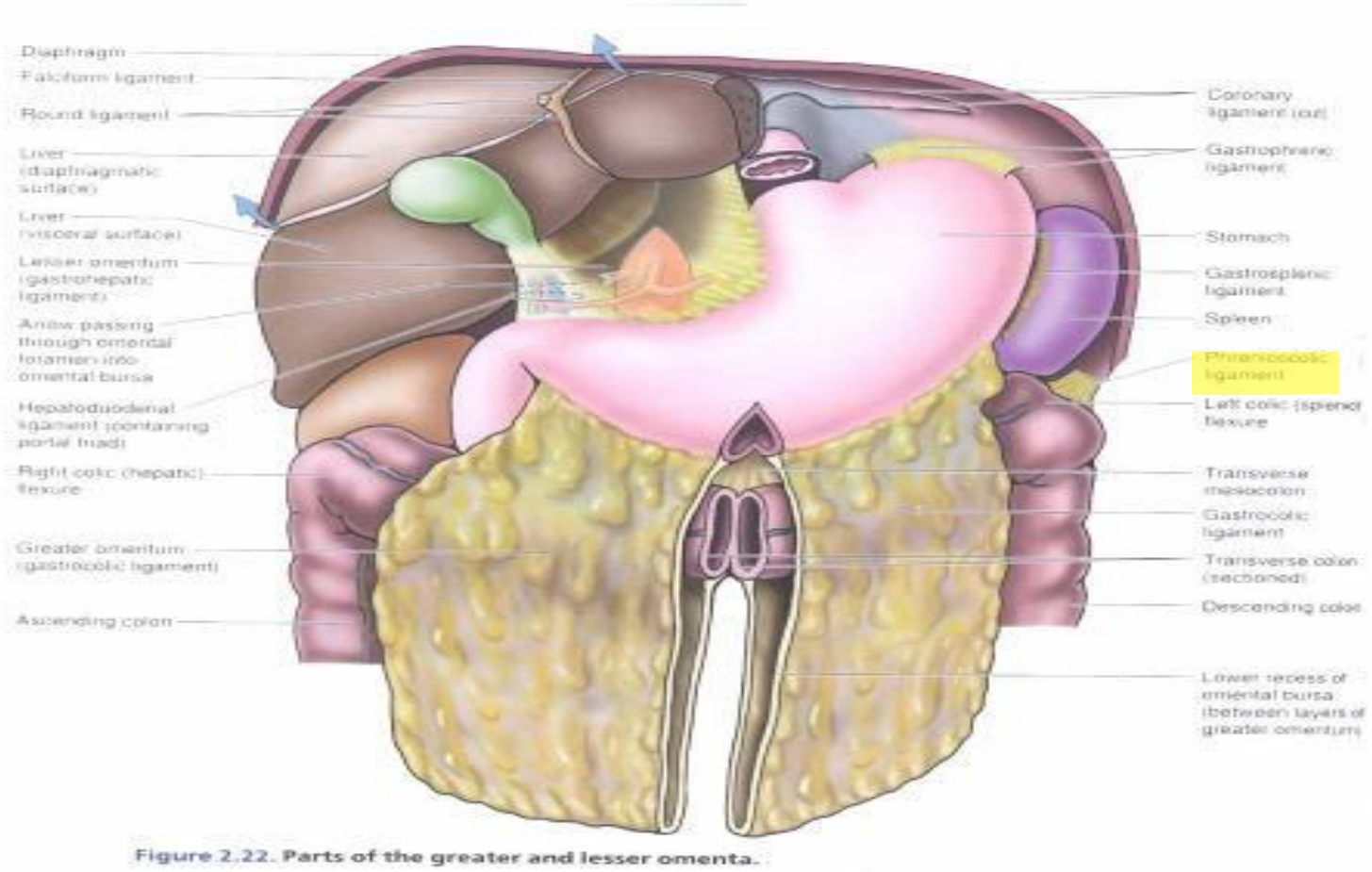
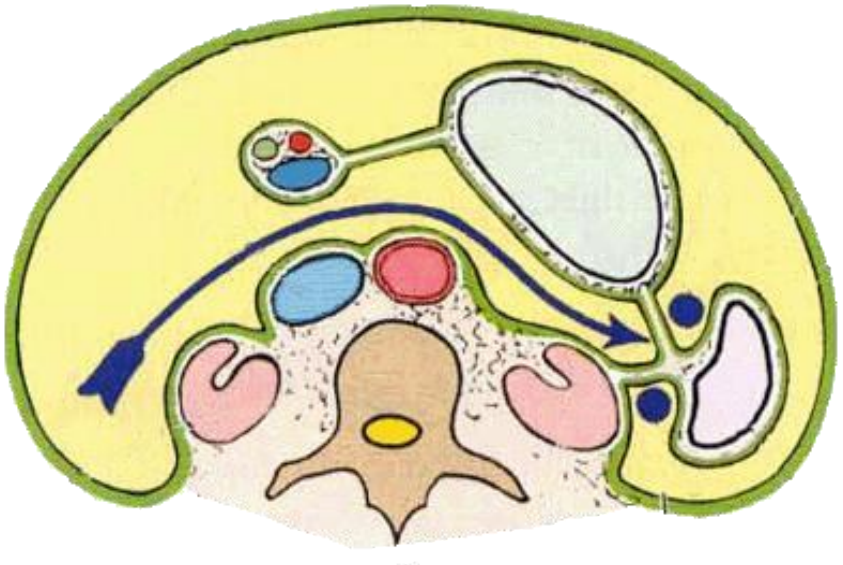
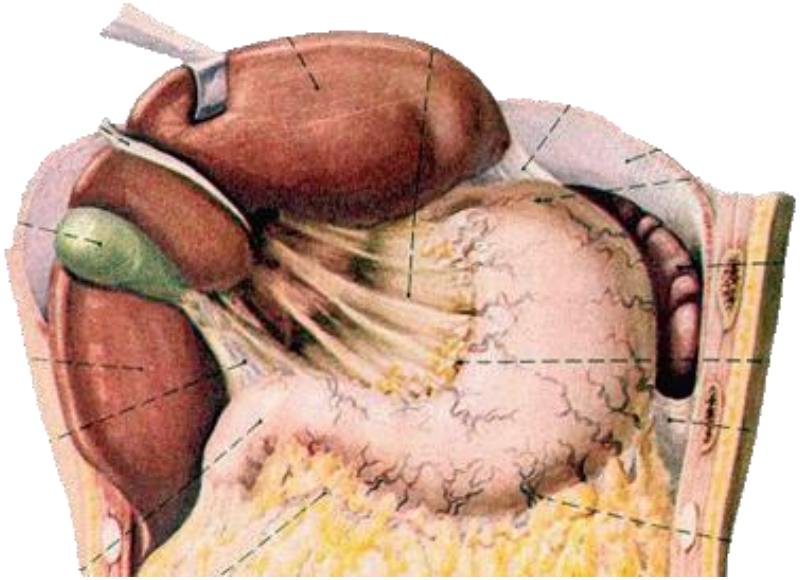


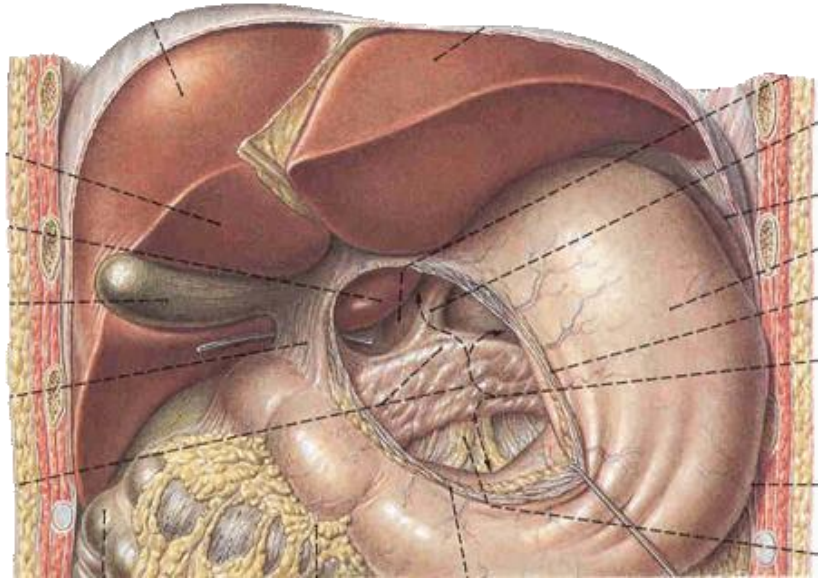
Figure 2.22. Parts of the greater and lesser omenta.

3- Ligaments of stomach

- Hepatogastric ligament
- Gastrosplenic ligament
- Gastrophrenic ligament
- Gastrocolic ligament
- **Gastropancrestic ligament**

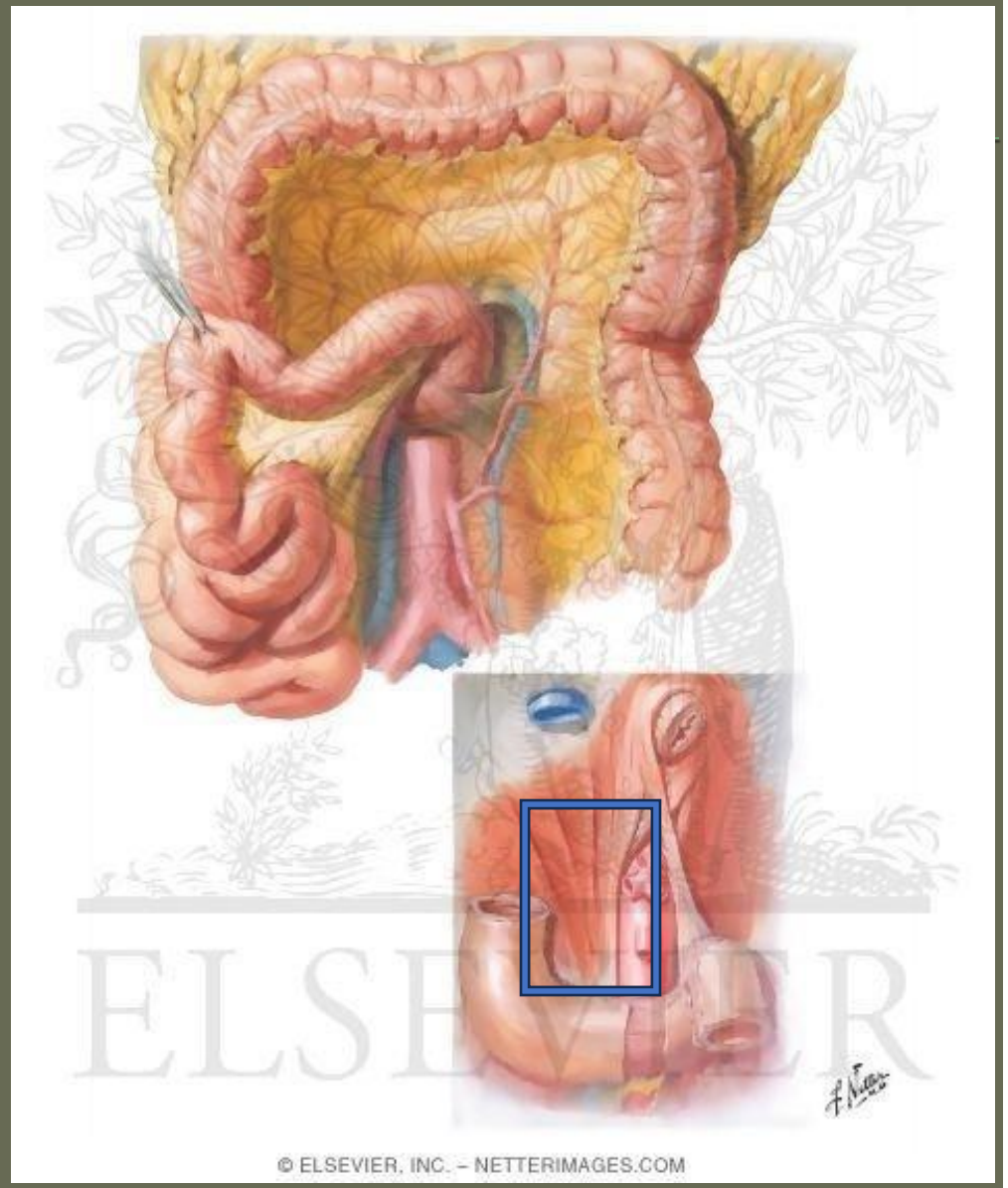






The **suspensory ligament of duodenum in embryo** Sometimes named **Treitz ligament at the junction between duodenum(retroperitonial) & Jejunum (intrperitonial) This ligament attach to the right crus of diaphragm.**

It is a landmark for the surgeon that this area between duodenum & jejunum



5. The **phrenicocolic ligament**

It is a fold of peritoneum which is continued from the left colic flexure to the diaphragm opposite the 10^{th} and 12^{th} ribs.

This ligament separate between lower & upper abdomen to prevent the spread of infection only in the left side .

4- The Peritoneal Recesses & fossa

- In certain parts of the abdomen (at the junction between intraperitoneal and retro peritoneal organs) the transition from a retroperitoneal organ to an intraperitoneal creates a fold of peritoneum, peritoneal fold may create recesses or fossae of the peritoneal cavity behind it.
- They are sometimes found in relation to the duodenum, cecum and sigmoid colon.

- From a surgical point of view the omental bursa can be considered to belong to this category, with its opening at the epiploic foramen, bounded in front by the free border of the lesser omentum.

- These recesses are of surgical importance(disadvantage) since they may become the site of internal herniae, that is, a piece of intestine may enter a recess and may be constricted (strangulated) by the peritoneal fold granding the entrance to the recess.

4- The Peritoneal Recesses & fossa

The internal hernia worse than external hernia because external hernia makes bulge and appear, while internal does not, so it is difficult to diagnose internal hernia.

if there is pressure on the walls of the small intestine that enter the fossa, internal hernia will become strangulated hernia (the intestine is constricted or strangulated by the peritoneal fold granding the entrance to the recess → cut of blood supply to that part of the intestine).

The cut of the blood supply in strangulated hernia will cause gangrene (degeneration of cells) in the part of the small intestine that is herniated, and this requires urgent surgical intervention where we remove the gangrenous part of the small intestine and connect the two healthy parts together.

A person with internal hernia (especially kids) will have a feeling of discomfort and slight pain but if it progresses to strangulated hernia there will be severe pain.

The Peritoneal Recesses & fossa ....cont

1. Duodenal Recesses

- The superior duodenal recess or fossa
- The inferior duodenal recess or fossa
- The paraduodenal recess or fossa
- The duodenojejunal recess or fossa

Internal hernia happen in duodenum bc it is retroperitoneal except the first and last inches and the jejunum is intraperitoneal so there are recesses around it

2. Cecal recesses

- The superior ileocecal or fossa
- The inferior ileocecal or fossa
- The retrocecal recesses or fossa (located behind the cecum and it is the most important one bc it is the most common site of appendix, (appendix frequently found there)
- The rectocolic recess or fossa

The ilium connect to cecum ,both are intraperitoneal, but internal hernia happen here bc the cecum is fixed in the right iliac fossa

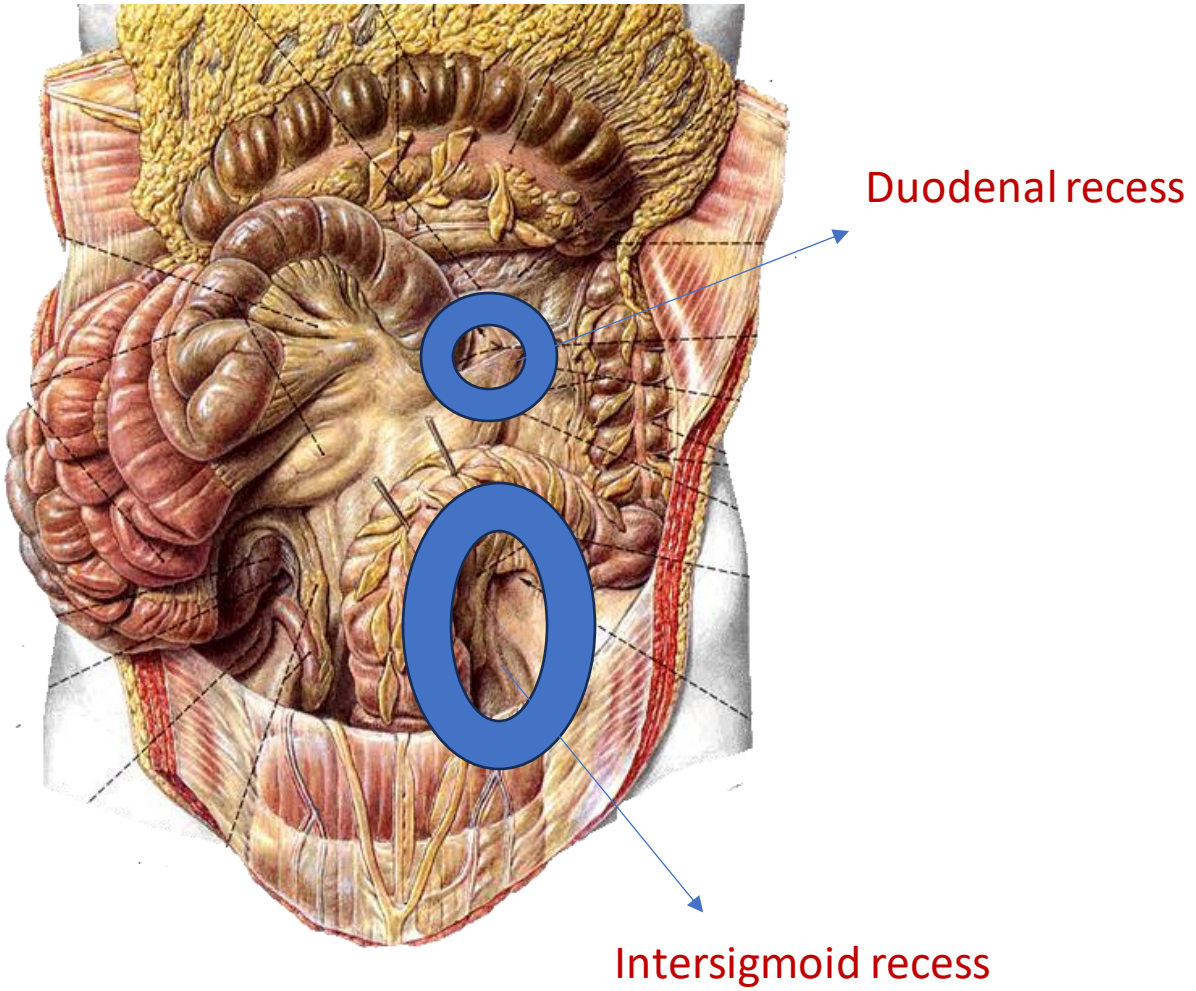
3. The intersigmoid recess

Sigmoid colon intraperitoneal but the descending colon is retroperitoneal so recesses may form

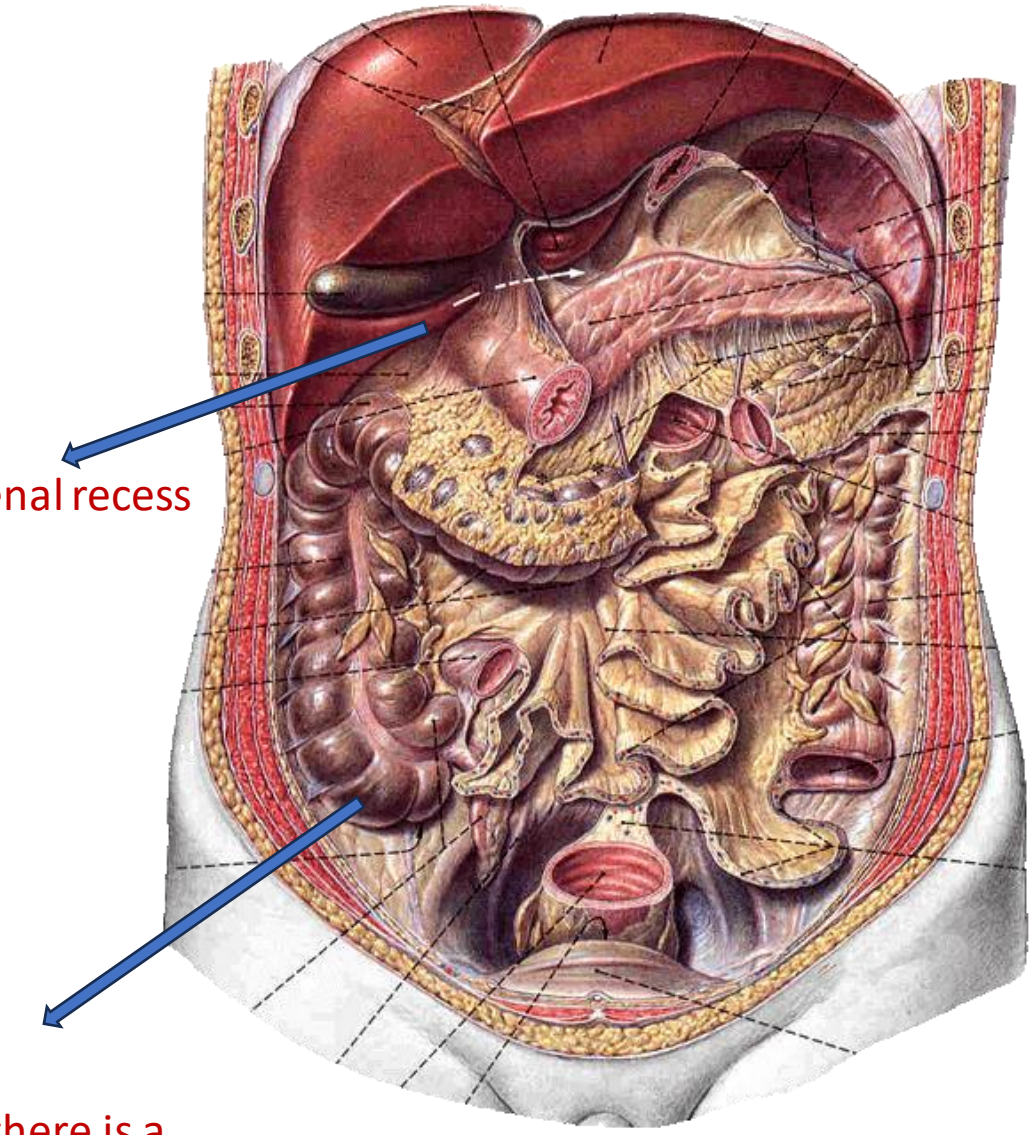
Folds and recesses of posterior abdominal wall

- **Superior duodenal fold** and **recess**
- **Inferior duodenal fold** and **recess**
- **Intersigmoid recess**

formed by the inverted V attachment of sigmoid mesocolon



- **Retrocecal recess** in which the appendix frequently lies
- **Hepatorenal recess (also called Morisons pouch)** lies between the right lobe of liver, right kidney, and right colic flexure, and is the lowest parts of the peritoneal cavity when the subject is supine

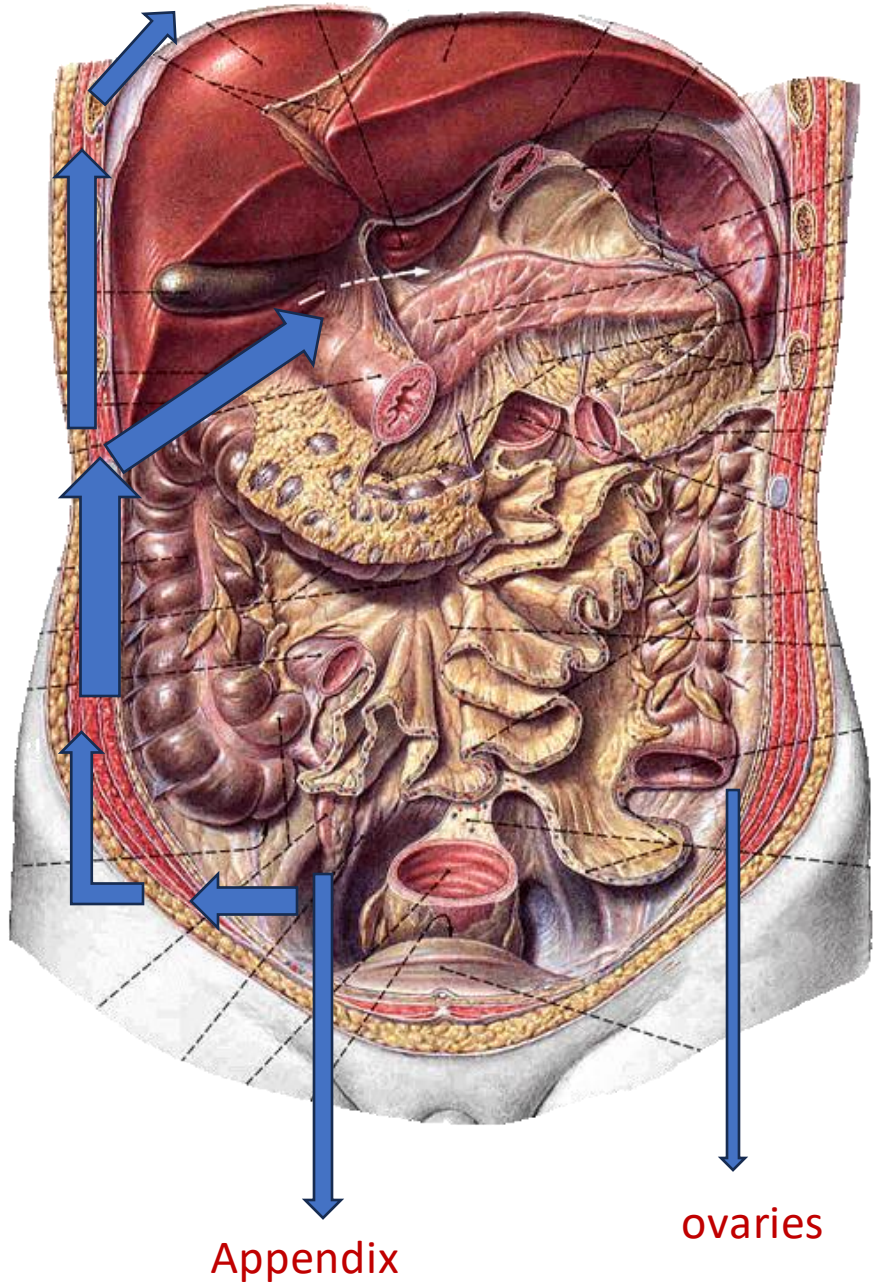


Behind the cecum there is a space , called retrocecal recess

Sometimes the infection of appendix spread from right side to upward, either to morisons pouch or
right subdiaphragmatic , making abscess.
مقشعر ,ركبه ببطنه ,المريض بكون نايم على اليمين
(follow the arrows on the pic)

But it is never go to the lift side bc the falciform ligament attach to diaphragm and anterior abdominal wall

It also does not spread from ovaries to subdiaphragmatic bc the phrenicocolic ligament, but can spread to pelvis.



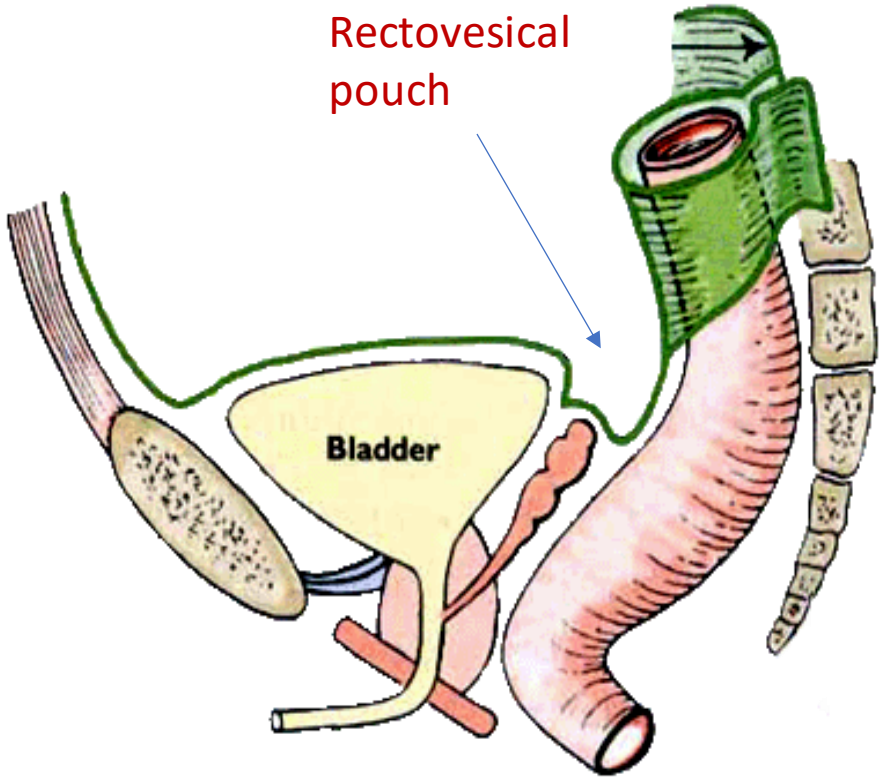
Pouches

- In the lesser pelvis, the peritoneum dips downwards forming a larger fossa, named pouch.
- Clinical importants→ internal abdominal hernia

Pouches differ from recess ,
poches open to abdominal cavity.

Pouches

- In male
- **rectovesical pouch**
- lies between rectum and urinary bladder (or the seminal vesicles and ampullae ductus deferentes).
- The rectovesical pouch is the lowest part of the peritoneal cavity in anatomical position in male.
- Sometimes the intestine enter it, but no hernia happen bc the pouch opens to the abdomen



Pouches

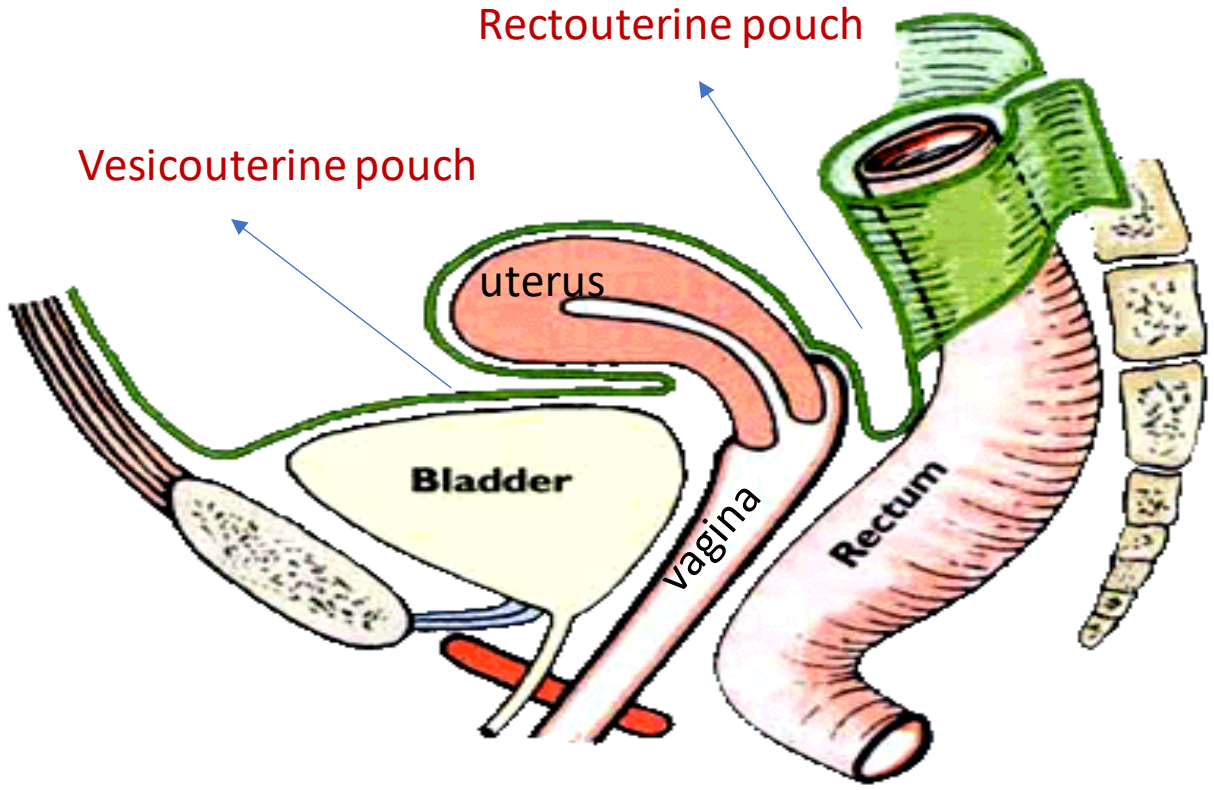
In female

- 1- Rectouterine pouch

Or Douglas pouch or rectouterine or rectovaginal pouch

between rectum and uterus

The rectouterine pouch is formed between the anterior surface of the rectum and the posterosurfof the uterus and the upper part of vagina.



- 2- Vesicouterine pouch
- between bladder and uterus (horizantly, it is not important bc nothing enter it)

It is formed between the anteroinferior surface of the uterus and the superior surface of the urinary bladder

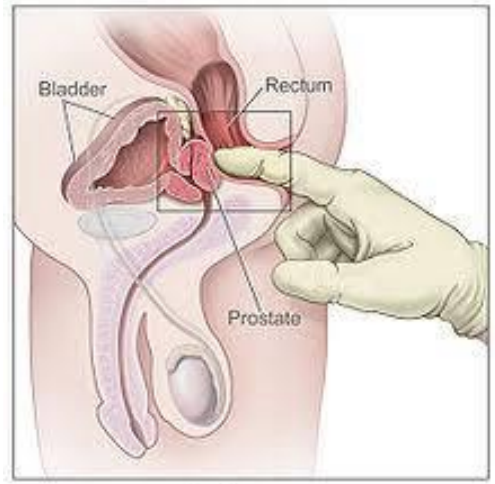
Per rectal examination (PR)

We enter the index through the rectum upwards and feel anything in the pouch .

If there is tumor in the sigmoid colon , the tumor makes the sigmoid heavy and lies on the Douglas pouch, so we apply the per rectal test and feel the tumor.

In male especially elderly should be tested by the per rectal examination, to feel the prostate (lies anterior to rectum) , to know if there is hypertrophy or calcification or tumor.

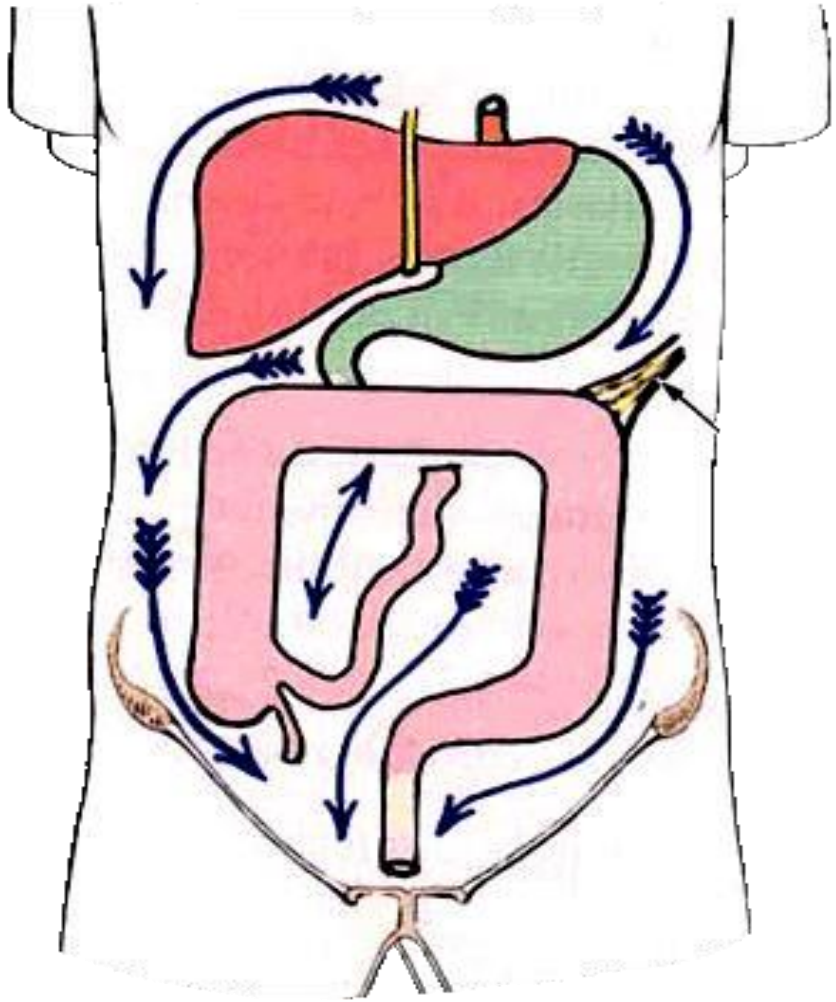
In conclusion: recesses, fossae, and pouches are spaces formed by the folding of the peritoneum and internal hernia is a disadvantage of these spaces.



Peritoneal subdivisions

The transverse colon and transverse mesocolon divides the greater sac into:

- Supracolic compartments (devided by the falciform ligament to right& left subdiaphragmatic)
- Infracolic compartments.
- Rt.extraperitoneal space.(bara area of liver & diaphragm)

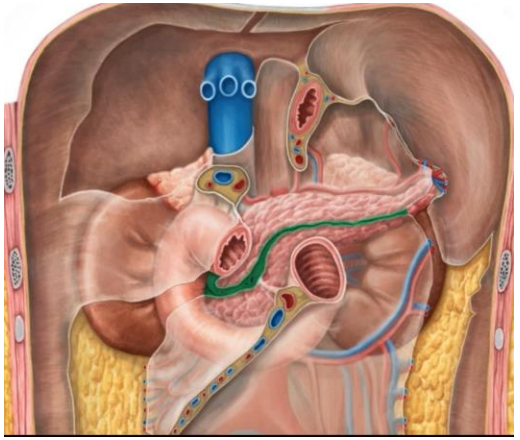


Supracolic compartments

Subphrenic space

Sub hepatic space

Remember that mesentery of transverse colon is bound to the anterior border of the pancreas, this mesentery divides the abdominal cavity to upper & lower part



Rt. Subdiaphragmatic

Lt. Subdiaphragmatic

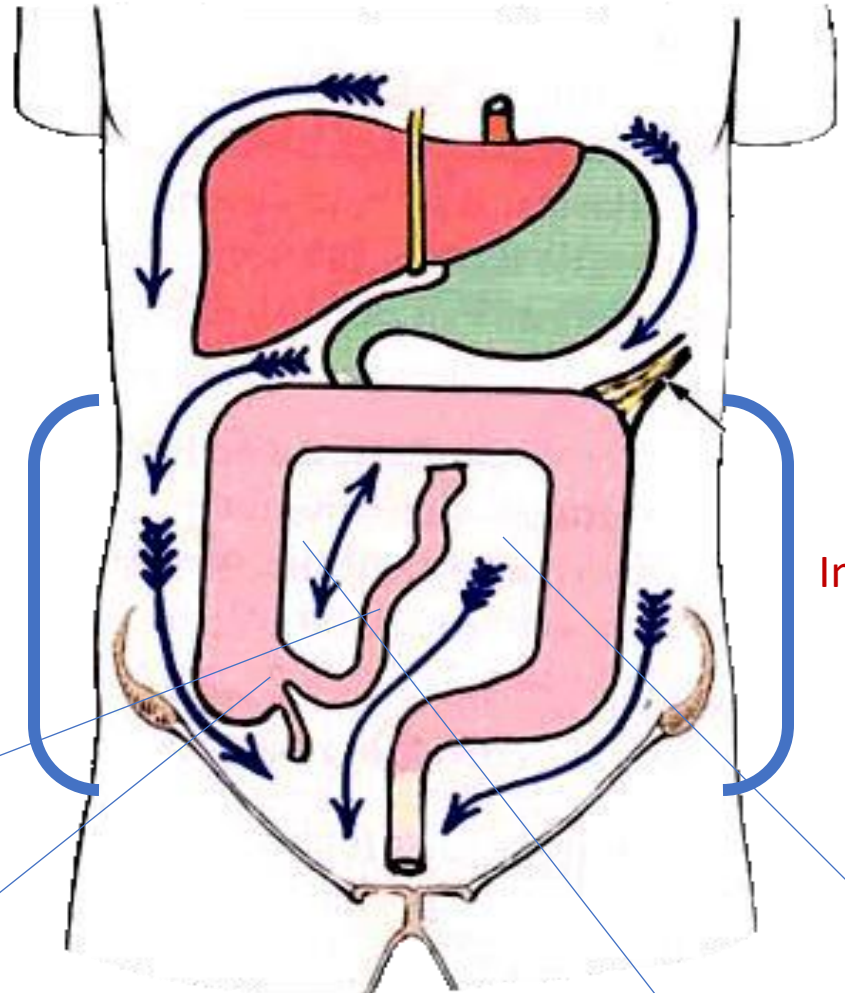
Behind the stomach there is lesser sac

Supracolic compartment

Morisons pouch

Phrenicocolic ligament(attach to the diaphragm leading to separation between upper &lower part on the left side)

Remember the dark blue arrows very well, there directions represent possible infection direction.



Infracolic compartment

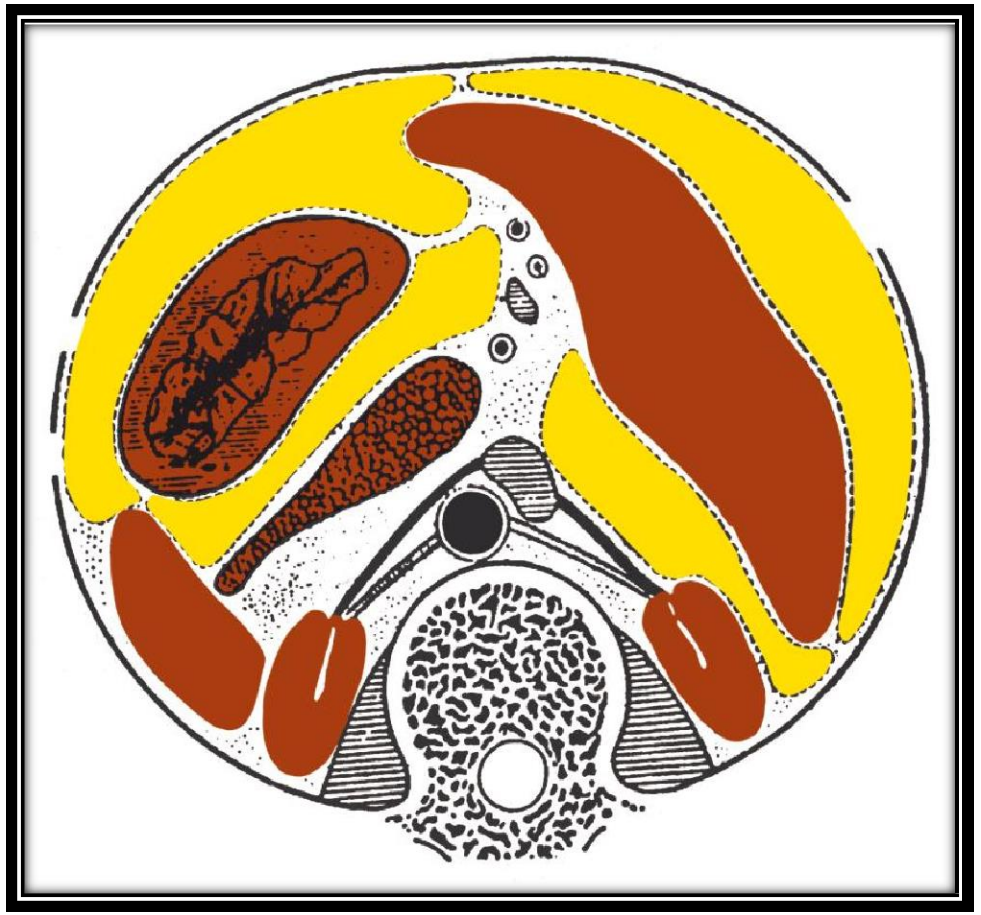
ilium

cecum

Lt. Infracolic compartment
(open to pelvis)

Rt. Infracolic compartment(closed)

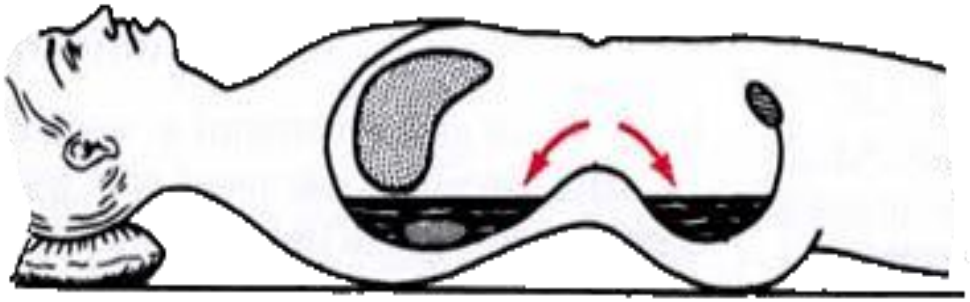
- Subphrenic space
  - Divided by the attachment of Falciform ligament into
- Rt.subphrenic space
- Lt.subphrenic space

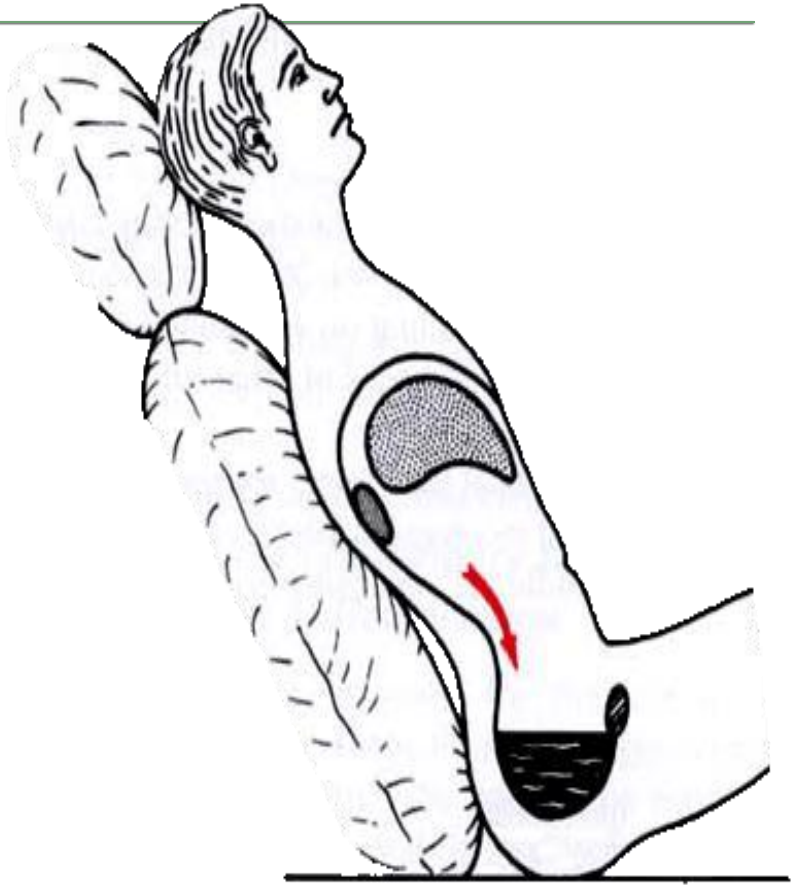


- Subhepatic space divided into:
- Rt.subhepatic space(morison's pouch)
- Lt.subhepatic space(lesser sac)

- When a person is sleeping on his back fluid in the abdomen will gather in 2 cavities, one in the abdomen and one in the pelvis.

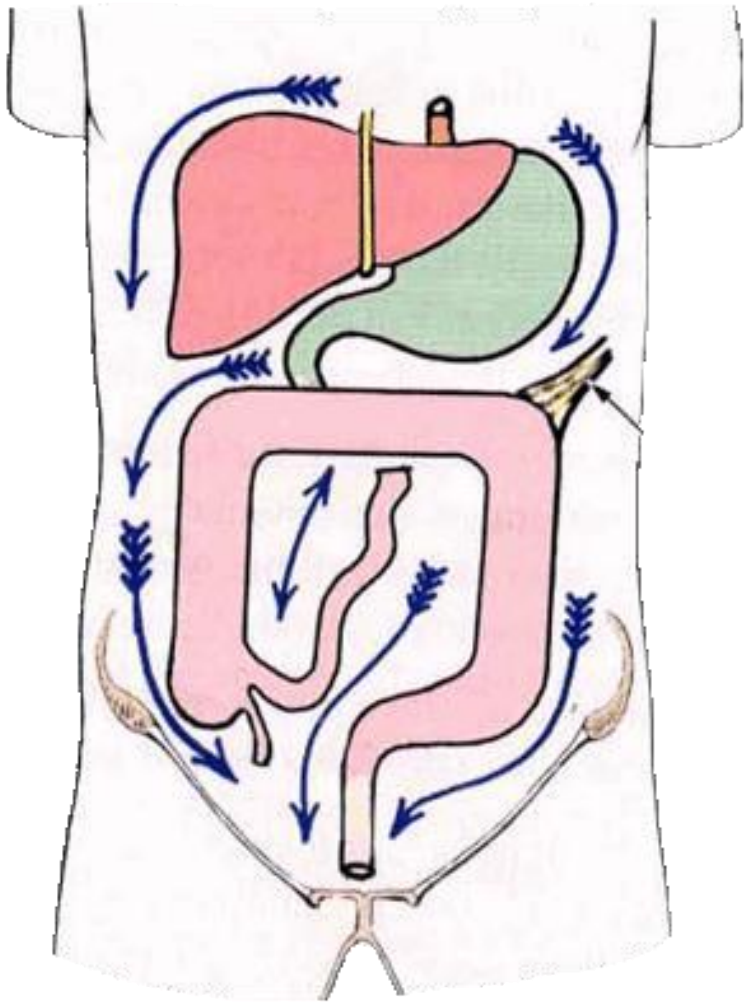
- If the person is setting up fluid will gather in the pelvis, The fluid descends to the pelvis.





Infracolic compartment

- lies below the transverse colon and transverse mesocolon
- Divided by root of the mesentery of small intestine into:
- Rt. Infracolic compartment
- Lt. infracolic compartment



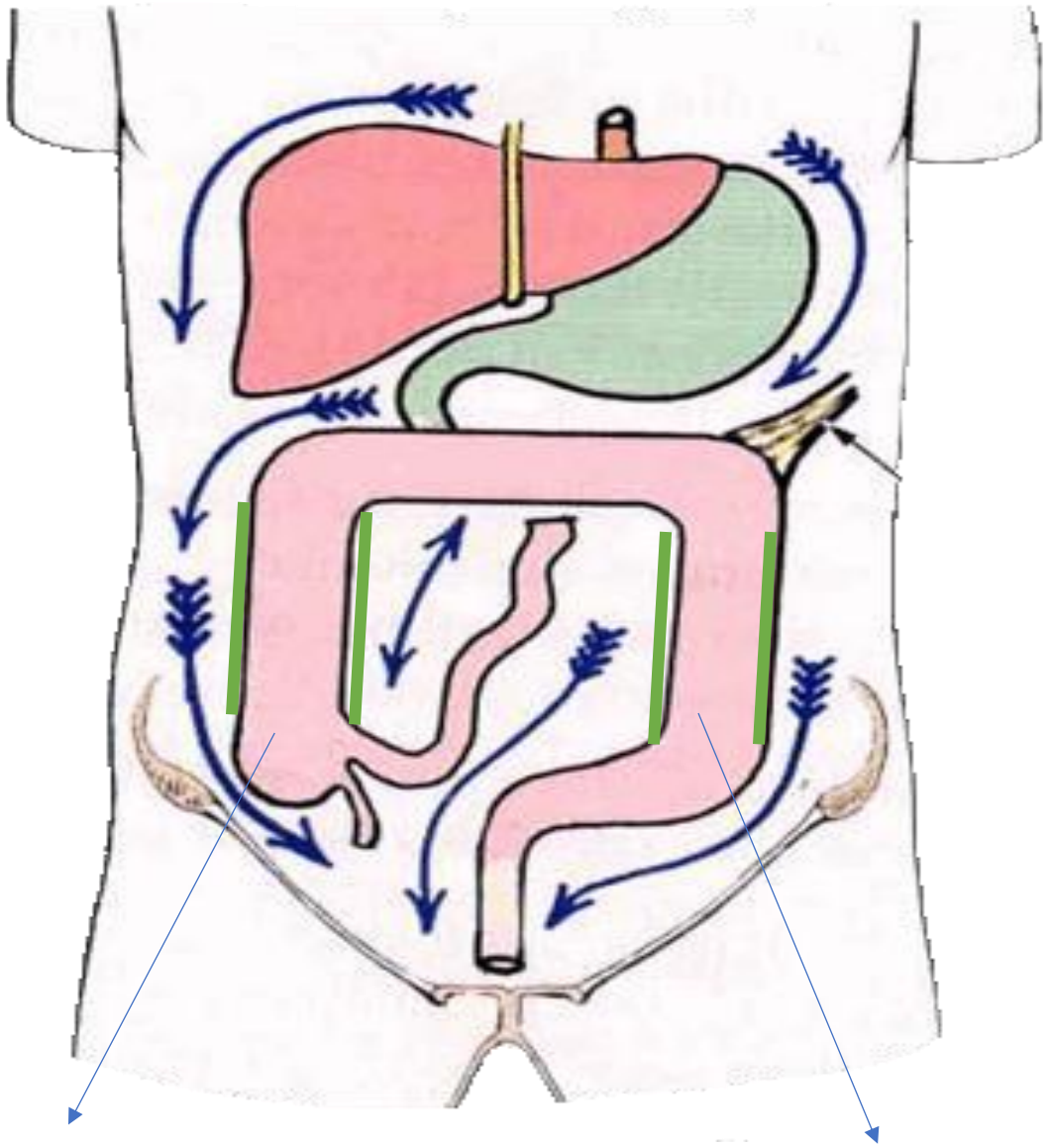
Infracolic compartments

- **Right paracolic sulcus** (gutter(in green)=groove formed by peritoneum) found around descending & ascending colon, these 2 organs are retroperitoneal , peritoneum on the anterior surface and fix them in the post. Abdominal wall, making gutter(groove) on the edges and any fluid can flow there

- Subdivide into:
- - Rt.medial.paracolic
- - Rt.Lateral.paracolic

- Rt.Lateral.paracolic communicates with the hepatorenal recess and the pelvic cavity.

- It provides a route for the spread of infection between the pelvic and the upper abdominal region. But Only to pelvic in the left side



Medial & lateral gutter to ascending colon

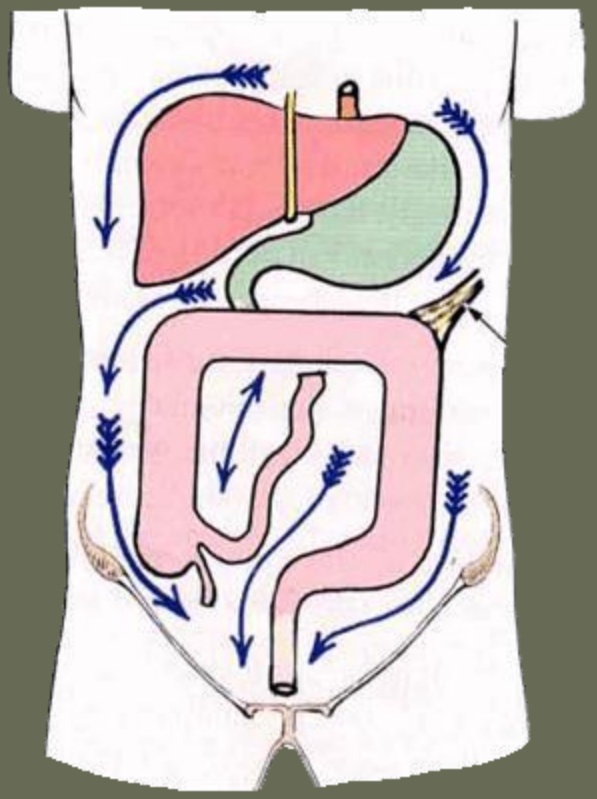
Medial & lateral gutter to descending colon

Left paracolic (gutter)

Subdivide into:
- Lt.medial.paracolic
- Lt.Lateral.paracolic

- Lt. lateral paracolic separated from the area around the spleen by the phrenicocolic ligament(a fold of peritoneum that passes from the colic flexure to the diaphragm)

- Lt.medial.paracolic open to the outside through the pelvis



Past paper

The lesser omentum contains all the following structures EXCEPT:
a. The left gastric artery.
b. The hepatic artery.
c. Common bile duct.
d. Branches of the vagus nerves.
e. The right gastroepiploic artery.

Answer: e

-Wrong about epiploic foramen:
a. between the greater sac and the lesser sac.
b. quadrate lobe is superior to it

Answer: b

Wrong statement about mesentery of small intestine
a. Contains jejunal and ileal branches of superior mesenteric artery and vein
b. suspends the small intestine from the posterior abdominal wall
c. Root of mesentery directed from L1 to right sacroiliac joint
d. Broad and a fan-shaped
Answer: c

تغذية راجعة يرجى الإطلاع على هذا الرابط لتقديم ,ولأن رأيكم يهمنا

https://docs.google.com/forms/d/e/1FAIpQLSdN9YK7ry3f5EtqmJAzL1lqa9ogsCGEEVrFH9DfBd8lIAN1Eg/viewform?usp=sf_link

ولا تنسوا الدعاء لأهلنا في غزة

Thank you