



The Omentum

Gastrointestinal block-Anatomy-Lecture 5

Editing file



Objectives

 **At the end of the lecture, students should be able to:**

- Brief knowledge about peritoneum as a thin serous membrane and its main parts; parietal and visceral.
- The peritoneal cavity and its parts the greater sac and the lesser sac (Omental bursa).
- The omentum, as one of the peritoneal folds
- The greater omentum ,its extends, and contents.
- The lesser omentum, its boundaries, and contents
- The Omental bursa, its boundaries.
- The Epiploic foramen, its boundaries.

Color guide :

Only in boys slides in **Green**

Only in girls slides in **Purple**
important in **Red**

Notes in **Grey**



The Peritoneum

- It is a thin serous membrane
- Lining the wall of the abdominal and pelvic cavities, (**the parietal peritoneum**).
- Covering the existing organs, (**the visceral peritoneum**).
- The potential space between the two layers is the **peritoneal cavity**.

1

- The peritoneal cavity is the largest one in the body.
- Divisions of the peritoneal cavity :
 - **Greater sac**: extends from diaphragm down to the pelvis.
 - **Lesser sac**: lies behind the stomach.
 - Both cavities are interconnected through the epiploic foramen.

2

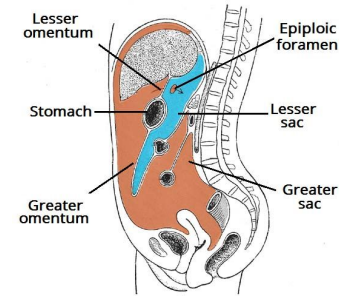
- **In male** : the peritoneum is a closed sac .
- **In female** : the sac is not completely closed because it communicates with the exterior through the uterine tubes, uterus and vagina.

3

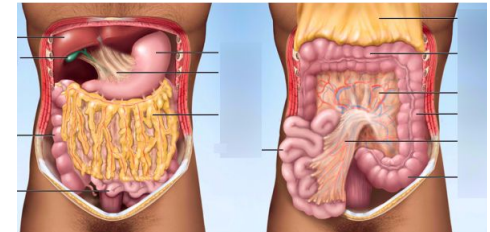
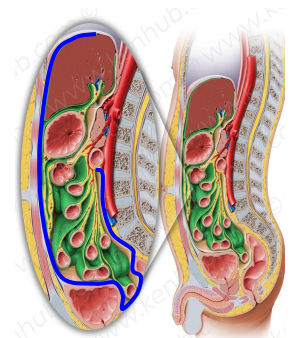
4 types of peritoneal folds :

- **Omenta**.
- **Mesenteries**.
- peritoneal **Ligaments**.

all permit blood, lymph vessels, and nerves to reach the viscera



© teachmeanatomy
The 3D Approach to Human Anatomy, 2nd Edition, 2018



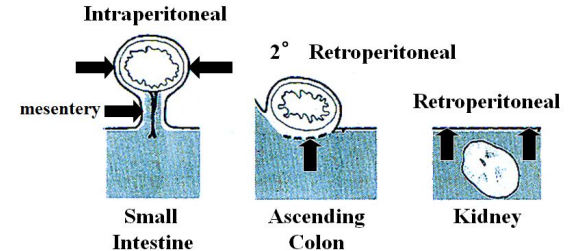
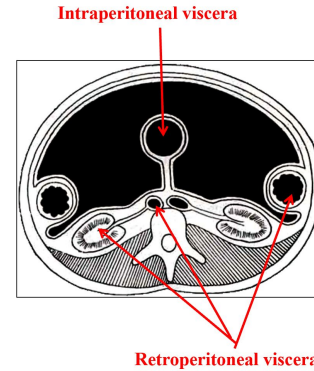
Omenta

Mesenteries

Intraperitoneal and retroperitoneal structure:

describe the relationship between various organs and their peritoneal covering.

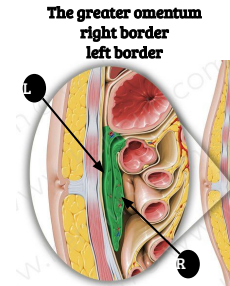
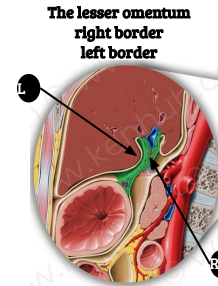
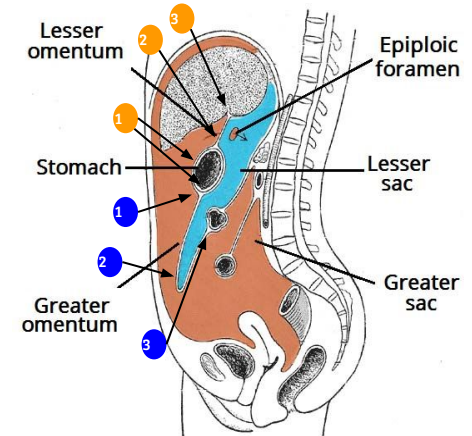
Intraperitoneal	Retroperitoneal
<p>Is entirely surrounded by the visceral peritoneum and has a supporting mesentery :</p> <ul style="list-style-type: none"> ● Stomach ● 1st Part Of Duodenum ● Liver ● Gallbladder ● Spleen ● Jejunum ● Ileum ● Transverse Colon ● Sigmoid Colon ● Uterus ● Ovaries 	<p>Structure that lies behind the parietal peritoneum or partially covered by the peritoneum and has no supporting mesentery.</p> <ul style="list-style-type: none"> ● Primary retroperitoneal organs: <ul style="list-style-type: none"> ○ Aorta ○ Inferior Vena Cava ○ Kidneys ○ Suprarenal Glands ○ Urinary Bladder ○ Vagina ○ Rectum. ● Secondary retroperitoneal organs: develop in mesenteries, but get pushed against the body wall (parietal peritoneum) during growth so that only half of their surface is covered by peritoneum : <ul style="list-style-type: none"> ○ Pancreas ○ Duodenum ○ Ascending Colon ○ Descending Colon.



Omenta

Two layered fold of peritoneum connecting the stomach to another viscus.

	The lesser omentum	The greater omentum
		The largest peritoneal fold, with cribriform appearance,
Attaches	the lesser curvature of the stomach to the liver.	the greater curvature of the stomach to the transverse colon.
Course	<p>(1) It is continuous with the two layers of peritoneum which cover the anterior & posterior surfaces of stomach and 1st part of the duodenum.</p> <p>(2) Ascend as a double fold to the porta hepatis of liver, and (3) fissure for ligamentum venosum</p>	<p>It consists of a double sheet of peritoneum, folded on itself so that it is made up of four layers (2 anterior, 2 posterior).</p> <p>(1) The two layers which descend from the greater curve of the stomach and commencement of the duodenum, pass downward in front of the small intestines, then (2) turn upon themselves, and (3) ascend to the transverse colon, where they separate and enclose it.</p>
Left Border	To the left of porta hepatis it is carried to the diaphragm.	continuous with the gastrosplenic ligament.
Right Border	is a free margin; constitutes the anterior boundary of the epiploic foramen	extends as far as the commencement of the duodenum.
Content	<ul style="list-style-type: none"> ★ Close to the right free margin, are the hepatic artery, common bile duct, portal vein, lymphatics, and hepatic plexus ★ At the attachment to the stomach, run the right and left gastric vessels. 	<ul style="list-style-type: none"> ● Adipose tissue. ● Right & left gastroepiploic vessels and The anastomosis between them ● Lymph nodes



Omental bursa (lesser sac)



It is a part of the peritoneal cavity behind the stomach. its **Boundaries** :

Anterior wall

**from above to downward*

caudate lobe of the liver

lesser omentum

back of the stomach

anterior two layers of the greater omentum.

Posterior wall

**from below upward*

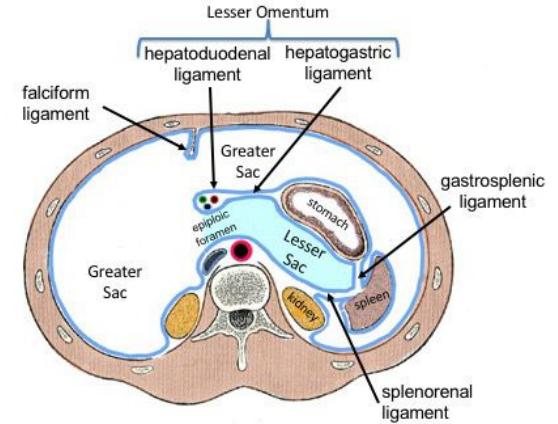
posterior two layers of the greater omentum

transverse colon

ascending layer of the transverse mesocolon

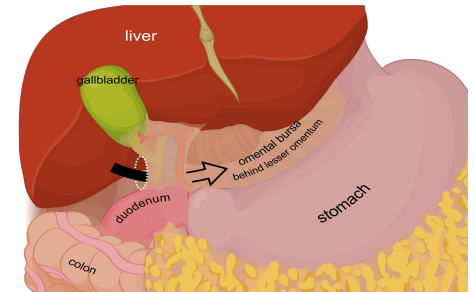
upper surface of the pancreas

upper end of the left kidney suprarenal gland



Epiploic foramen: it is the communication between the greater and lesser sacs .

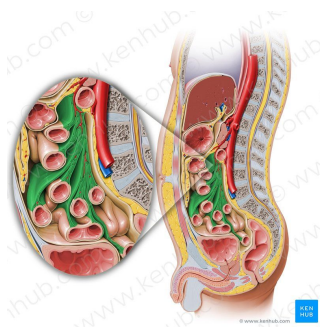
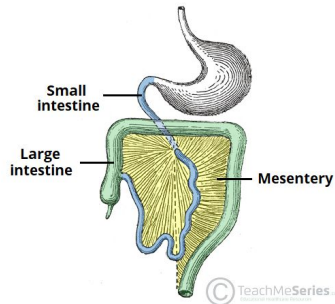
In front	Behind	Above (roof)	Below (floor)
free border of the lesser omentum, with its contents between its two layers: <ol style="list-style-type: none"> 1. hepatic artery 2. common bile duct 3. portal vein 	peritoneum covering the inferior vena cava.	peritoneum on the caudate process of the liver.	peritoneum covering of the <ol style="list-style-type: none"> 1. commencement of the duodenum 2. hepatic artery, before ascending between the two layers of the lesser omentum.



Mesentery and Ligaments

Mesentery

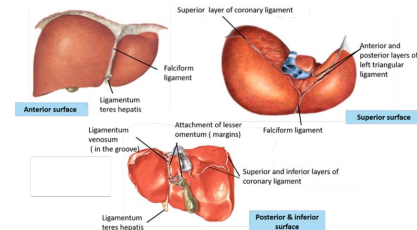
- ❖ Two-layered fold of peritoneum suspends the small intestine from the posterior abdominal wall
- ❖ its doubling up of visceral peritoneum and wrapping around an organ, then attaches it to posterior abdominal
- ❖ Broad and a fan-shaped
- ❖ Intestinal border: folded, 7cm long
- ❖ Root of mesentery:
 - 15 cm long
 - **Directed obliquely** from **duodenojejunal flexure** at the level of left side of L2 to the **ileocecal junction** in the right iliac fossa at the level of **right sacroiliac joint**.



Ligaments

- ❖ Two-layered folds of peritoneum that attach solid viscera to the abdominal wall and diaphragm
- ❖ its doubling up of visceral peritoneum and connecting viscera to the viscera or the abdominal wall
- ❖ **Ligaments of liver:**

- 1 Falciform of liver
- 2 Coronary ligament
- 3 Left and right triangular ligaments
- 4 Ligamentum teres

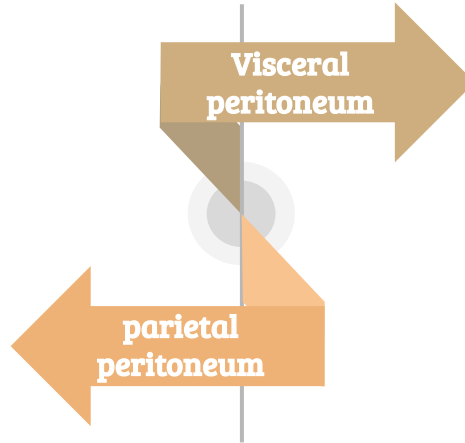


Nerve supply of peritoneum

- The parietal peritoneum **lining the anterior abdominal wall** is supplied by:
 - Thoracic nerves **T7-12** (Lower 6 intercostal nerves) **and L 1** (iliohypogastric nerve)
- The **central part** of the diaphragmatic peritoneum is supplied by
 - phrenic nerves, **C3,4, and 5**
- **Peripheral part of the diaphragmatic peritoneum** supplied by
 - intercostal nerves **T7-11**
- **pelvic wall** by
 - obturator nerve **L2,3, and 4**

Clinical point :

- it **sensitive** to: pain, temperature, touch and pressure.
- Abdominal pain originating from the parietal peritoneum is therefore of the somatic type, it is usually severe, and can be accurately localized



- Supplied by **autonomic afferent nerves** that supply the viscera or traveling in the mesenteries.

Clinical point :

- its **sensitive** only to stretch and tearing.
- The visceral peritoneum, including the mesenteries, it is due to stretch caused by over distension of a viscus and pulling on a mesentery that gives rise to the sensation of pain.
- leading to poorly localized, poorly characterized pain. (dull, cramping, aching)
- **Peritoneal Dialysis:**
Because the peritoneum is a semi permeable membrane :
It allows transfer of substances across itself.
It has been made use of in patients with acute renal insufficiency.

QUIZ



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
A	A	A	C	D	C	A	B

Q1: Which one of the following arteries pass along the free margin of the lesser omentum?

- A. Hepatic
- B. Gastroduodenal
- C. Left gastric
- D. Right gastric

Q2: The peritoneal cavity behind the stomach is

- A. Lesser sac
- B. Greater sac
- C. Greater omentum
- D. Lesser omentum

Q3: Which artery lies between the 2 fold of greater omentum?

- A. Left gastroepiploic artery
- B. gastroduodenal artery
- C. cystic artery
- D. Left gastric artery

Q4: Which of the following structures lies anteriorly to the omental bursa?

- A. anterior of the stomach
- B. Upper right border of the kidney
- C. caudate lobe of the liver
- D. Pancreas

Q5: Which one of the following parts of large intestine has a mesentery?

- A. Ascending colon
- B. Descending colon
- C. Rectum
- D. Sigmoid

Q6: Which one is completely covered with peritoneum?

- A. Descending colon
- B. Ascending colon
- C. Transverse colon
- D. Rectum

Q7: Which one of the following is the anterior relation of the epiploic foramen?

- A. Lesser omentum
- B. Greater omentum
- C. Greater sac
- D. Lesser sac

Q8: the left Border of the greater omentum ?

- A. to the left of porta hepatis it is carried to the diaphragm.
- B. continuous with the gastrosplenic ligament.
- C. is a free margin; constitutes the anterior boundary of the epiploic foramen
- D. extends as far as the commencement of the duodenum.



Members board



Team leaders

 **Abdulrahman Shadid**

Boys team:

- **Mohammed Al-huqbani**
- **Salman Alagla**
-  **Ziyad Al-jofan**
-  **Ali Aldawood**
-  **Khalid Nagshabandi**
- **Sameh nuser**
- **Abdullah Basamh**
- **Alwaleed Alsaleh**
- **Mohaned Makkawi**
- **Abdullah Alghamdi**

● **Ateen Almutairi**

Girls team :

- **Ajeed Al Rashoud**
- **Taif Alotaibi**
- **Noura Al Turki**
- **Amirah Al-Zahrani**
- **Alhanouf Al-haluli**
- **Sara Al-Abdulkarem**
- **Renad Al Haqbani**
- **Nouf Al Humaidhi**
- **Jude Al Khalifah**
- **Nouf Al Hussaini**
- **Danah Al Halees**
- **Rema Al Mutawa**
- **Maha Al Nahdi**
- **Razan Al zohaifi**
- **Ghalia Alnufaei**

