

وسهلا



أهلا

يُمنع أخذ السلايدات بدون
إذن المحرر واي اجراء
يخالف ذلك يقع تحت طائلة
المسؤولية القانونية
جميع المعلومات للاستخدام
التعليمي فقط

الأستاذ الدكتور يوسف حسين

كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

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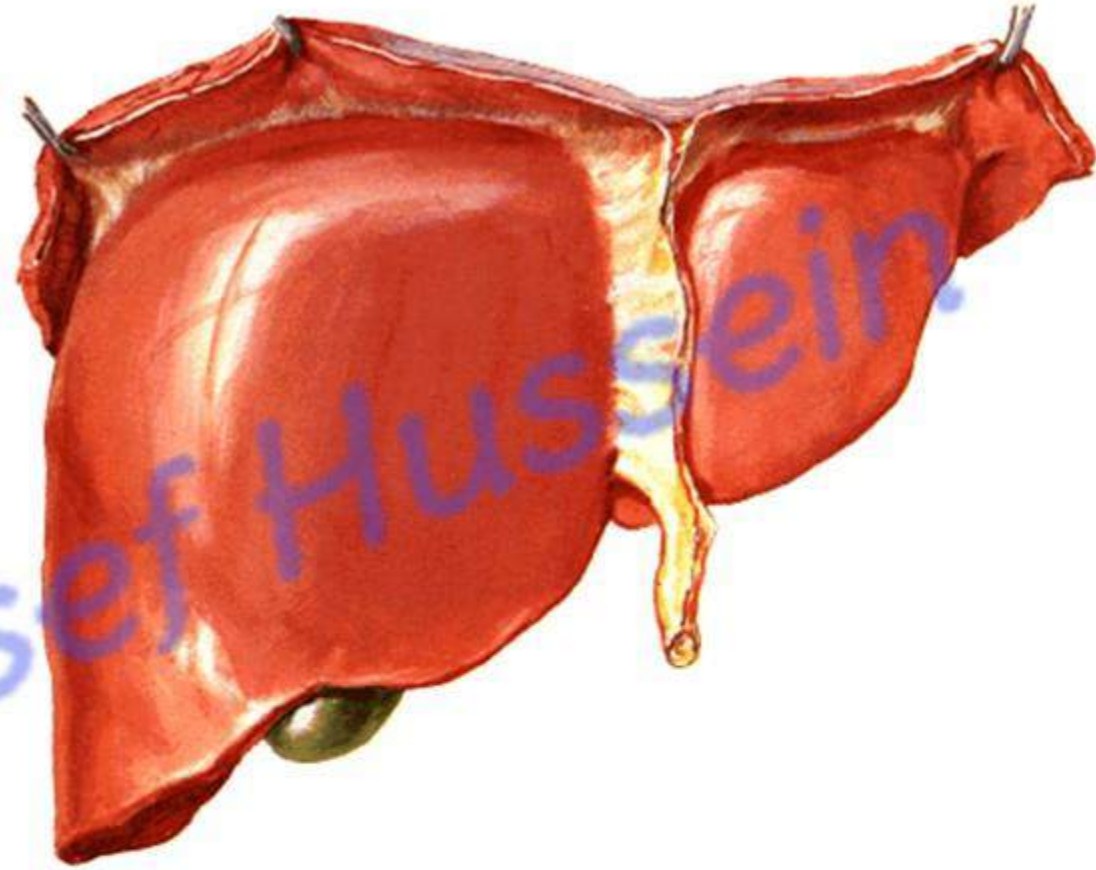
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Liver

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- Liver is the largest visceral organ and is the largest gland of the body
- Its **weight** in the male about 1.5 kg, in the female about 1.3 kg
- **Highly vascular organ**
- **Easily lacerated in the living subjects with severe hemorrhage**



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Regions of Abdominal Area

Right
hypochondriac
region

Epi-
gastric
region

Left
hypochondriac
region

Right
lumbar
region

Umbilical
region

Subcostal plane **L3**

Left
lumbar
region

Right
iliac
region

Hypo-
gastric
region

Intertubercular plane **L5**

Left
iliac
region

- **Position of the liver**

- The whole of the right hypochondrium
- parts of the epigastrium and left hypochondrium

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Surfaces of Liver

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Superior surface

Wedge-shaped

**** Surfaces:**

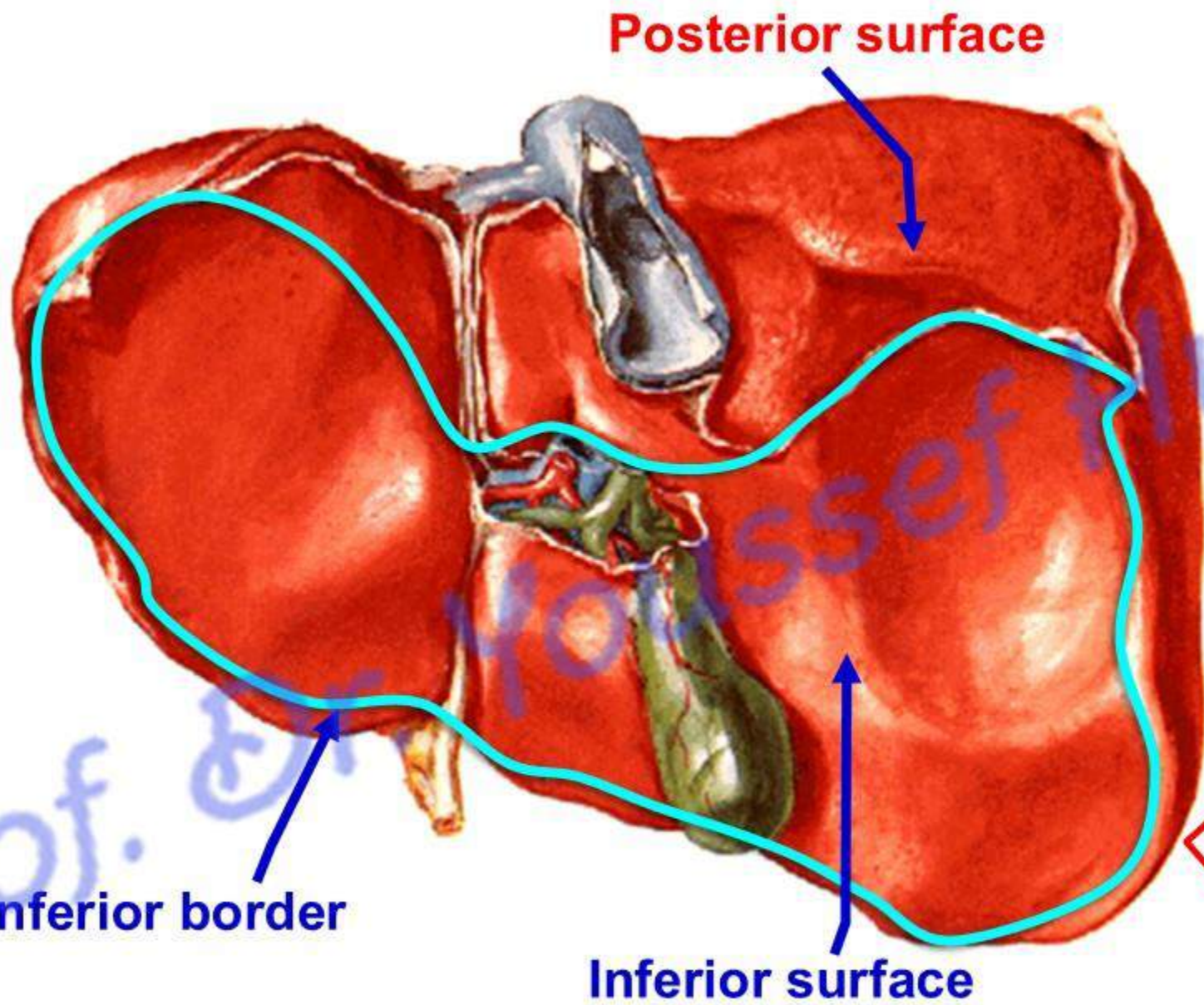
- It has 5 surfaces
- No sharp borders between them

Right surface

Anterior surface

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Surfaces anatomy of Liver

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xiphisternal
junction in
median plane

Right 5th CC in right
midclavicular line

Right 7th rib In right
midaxillary line

1 cm below costal
margin right
midaxillary line

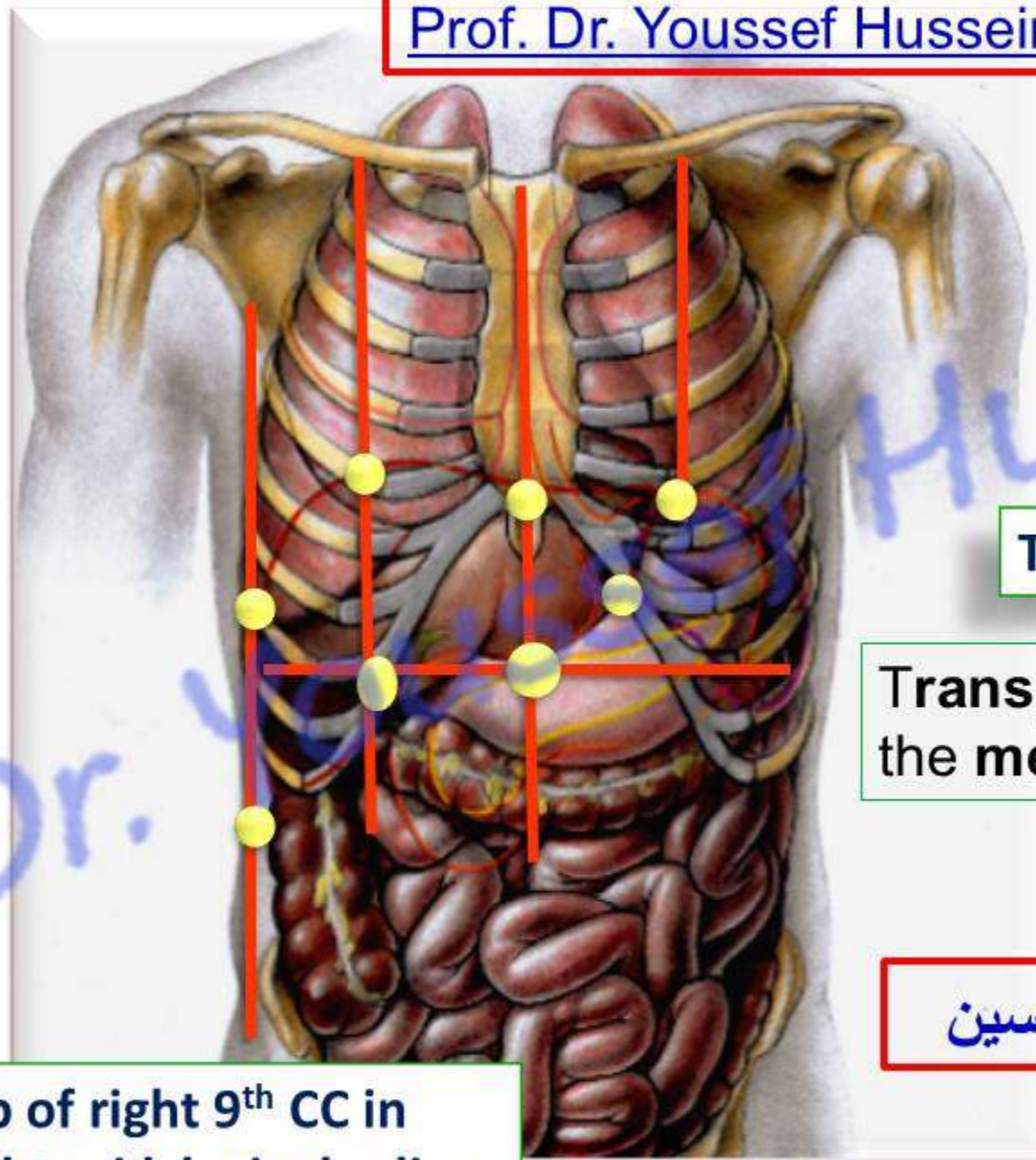
Tip of right 9th CC in
right midclavicular line

Left 5th ICS in left
midclavicular line

Tip of Left 8th CC

Transpyloric plane in
the median plane

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- **Surface anatomy**

1- Superior border of the liver: represented by a **line** joining the following points directed to the right

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- 1- A point in the left **5th intercostal space** (in the left mid-clavicular line).
- 2- A point at the **xiphisternal junction** (in the median plane).
- 3- A point on the right **5th costal cartilage** (the right mid-clavicular line).
- 4- A point on the right **7th rib** (in the right midaxillary line).

2- Right border: represented by a line convex to the right between the right 7th rib to 1 cm below the costal margin in the right midaxillary line

3- Inferior border: represented by a **line** joining the following points directed to the right

- 1- A point in the **left 5th intercostal space** (left mid-clavicular line).
- 2- The tip of the **left 8th costal cartilage**.
- 3- The **transpyloric plane** in the **median plane** (midway between the umbilicus and xiphisternal junction).
- 4- The tip of the **right 9th costal cartilage** (right midclavicular line).
- 5- 1 cm below the costal margin at the right midaxillary line.

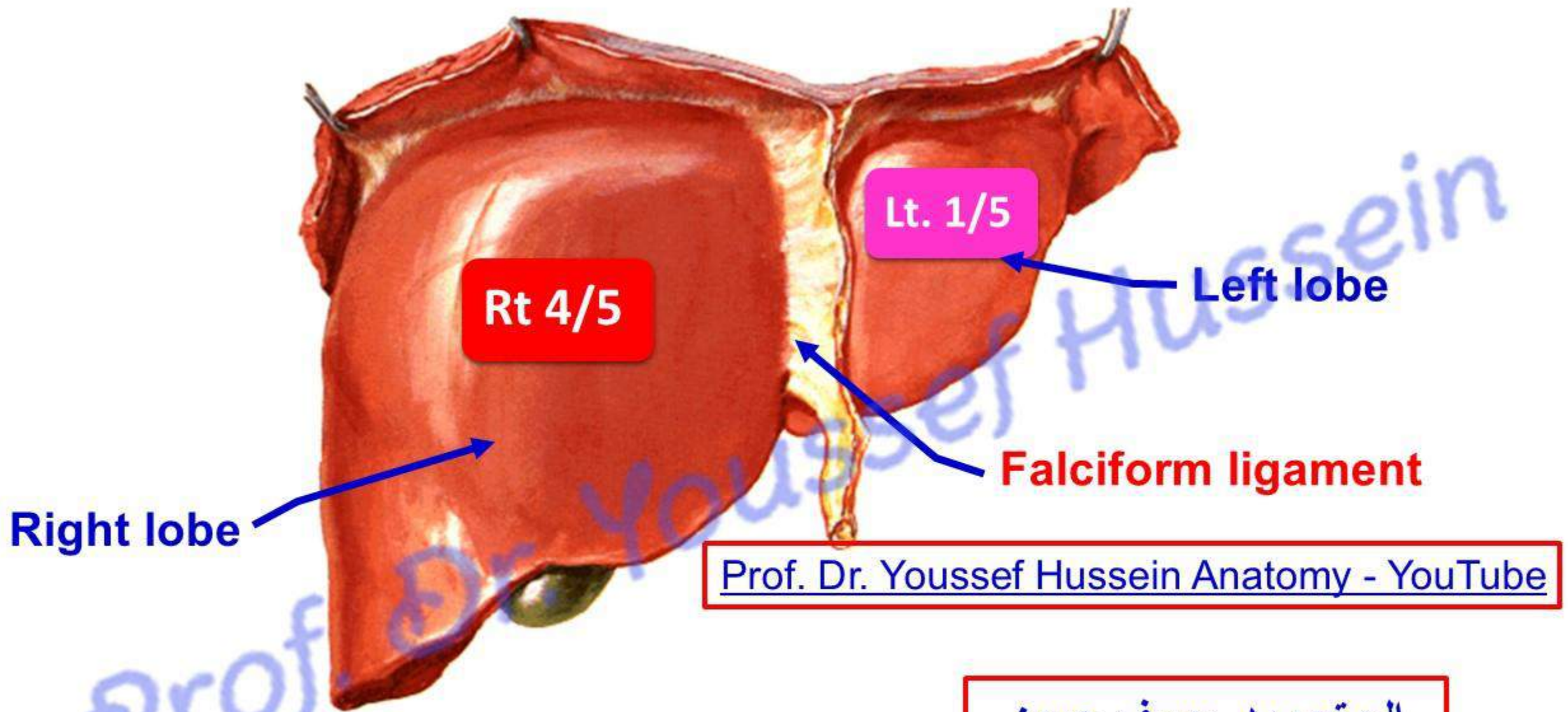
- **Liver biopsy** is performed percutaneously by needle puncture, which commonly goes through the **right 8th or 9th (perhaps 7th to 10th) intercostal space in the right midaxillary** line under ultrasound or computed tomography (CT) scan guidance.
- While taking the biopsy, the patient is asked to hold his or her breath in full expiration to reduce the costodiaphragmatic recess and to lessen the possibility of damaging the lung and causing pneumothorax.

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Anatomical Lobes of Liver

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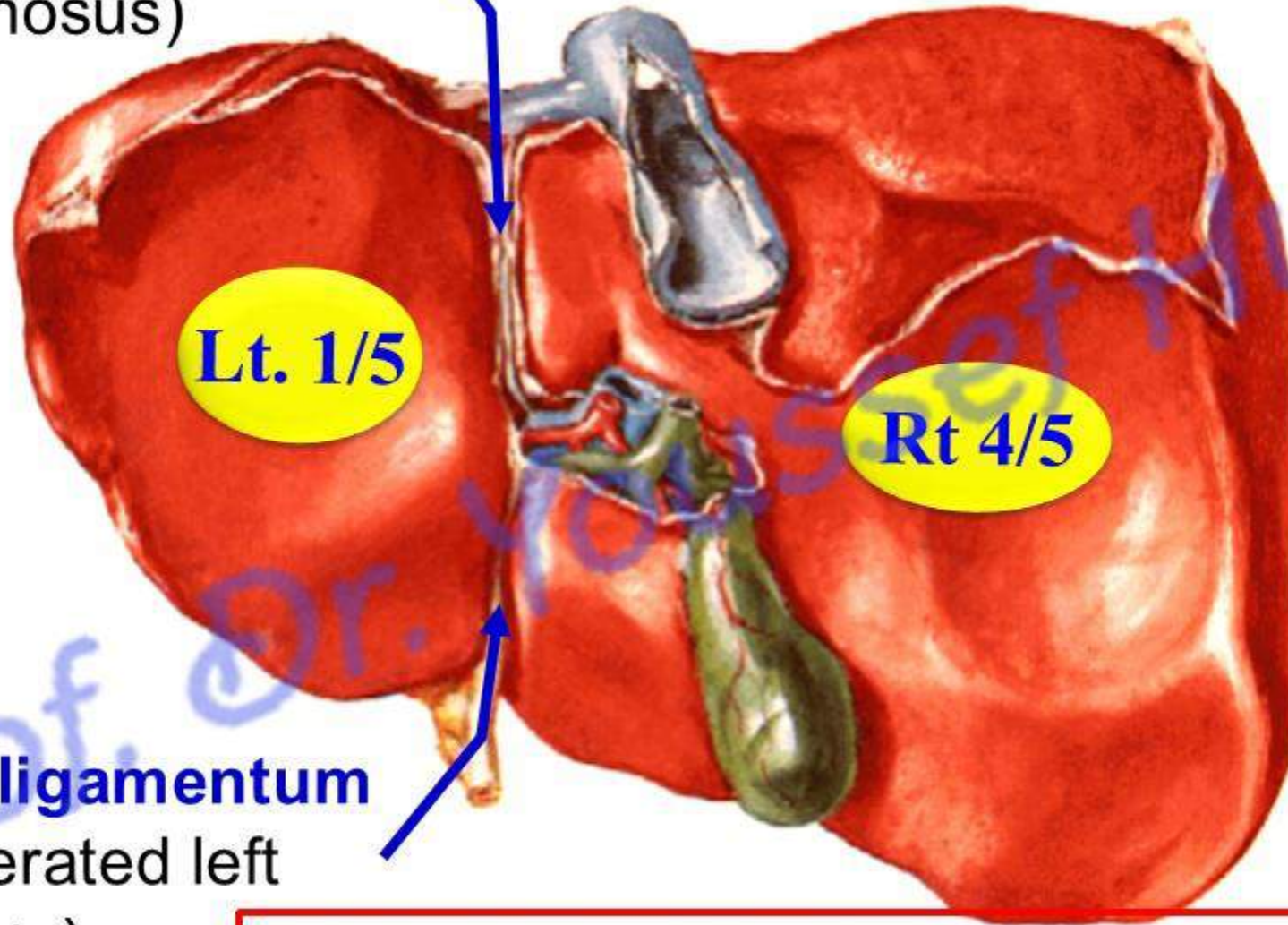
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Anterior and superior view

**Fissure of ligamentum
venosum** (obliterated
ductus venosus)

Posteroinferior view



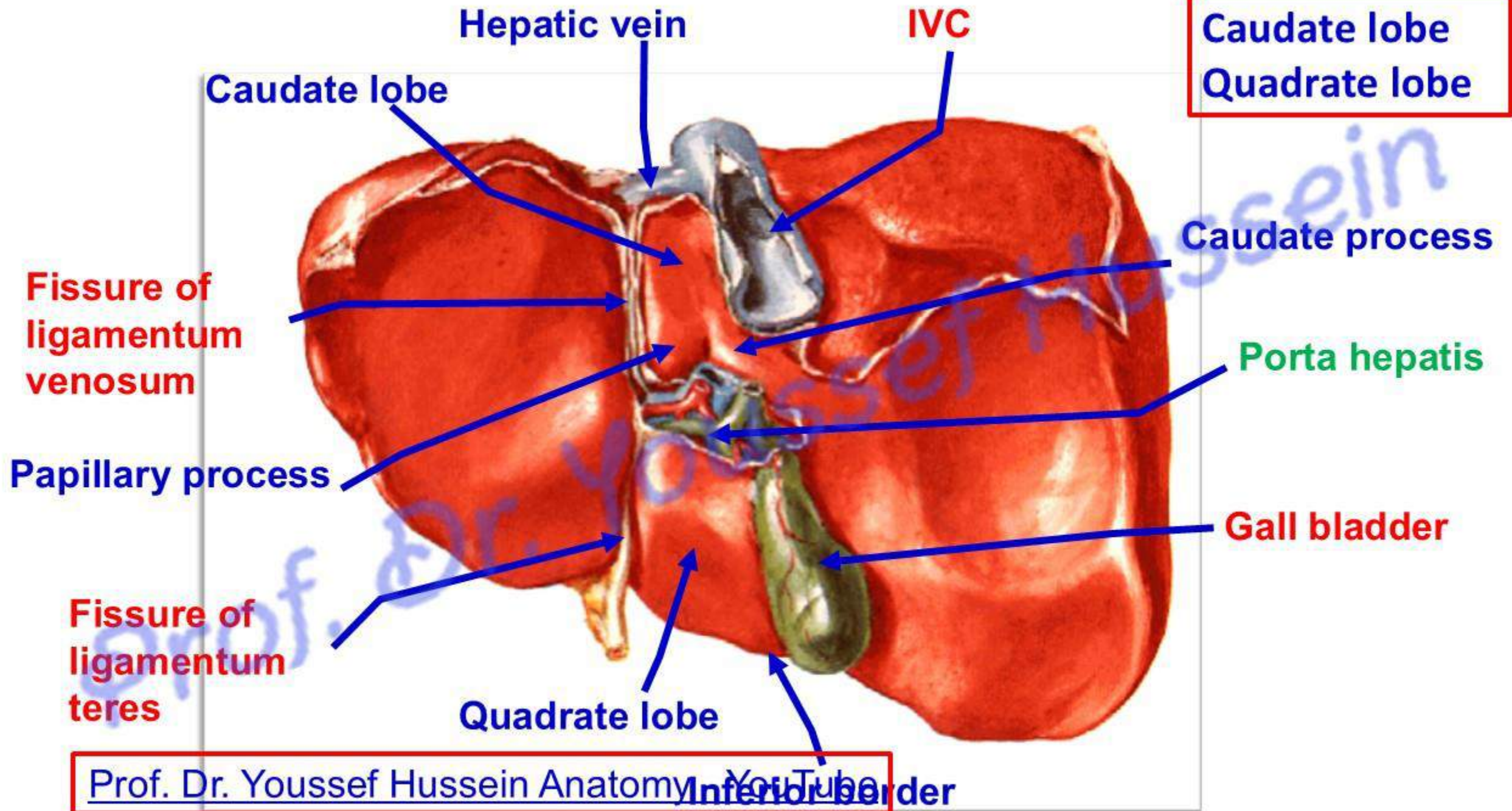
Lt. 1/5

Rt 4/5

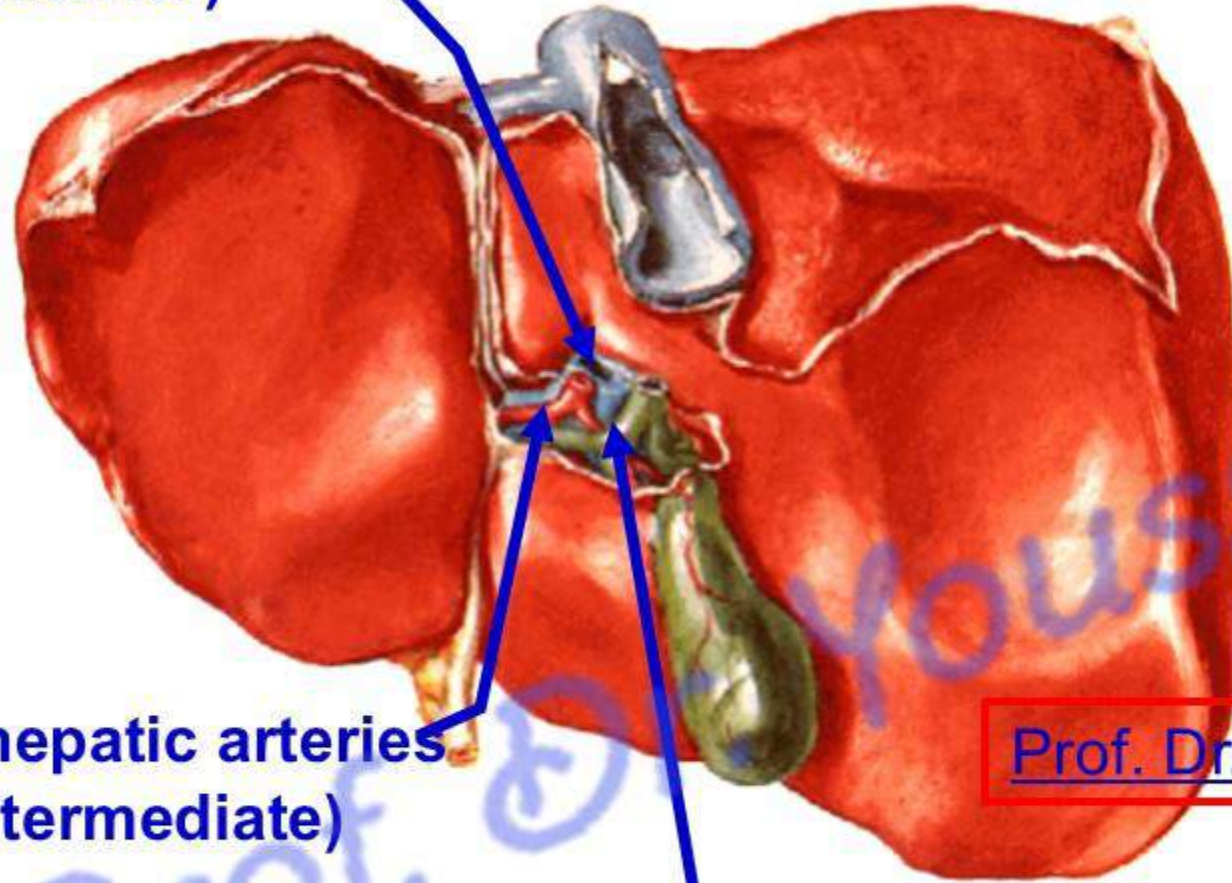
**Fissure of ligamentum
teres** (obliterated left
umbilical vein)

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2 portal veins
(posterior)



2 hepatic arteries
(intermediate)

2 hepatic ducts
(anterior)

- **Porta hepatis** (hilum of the liver) contains **VAD**
- **Portal veins (posterior)**
- **Hepatic arteries (intermediate)**
- **Hepatic ducts (anterior)**
- **Sympathetic plexus around artery**
- **Lymph nodes**

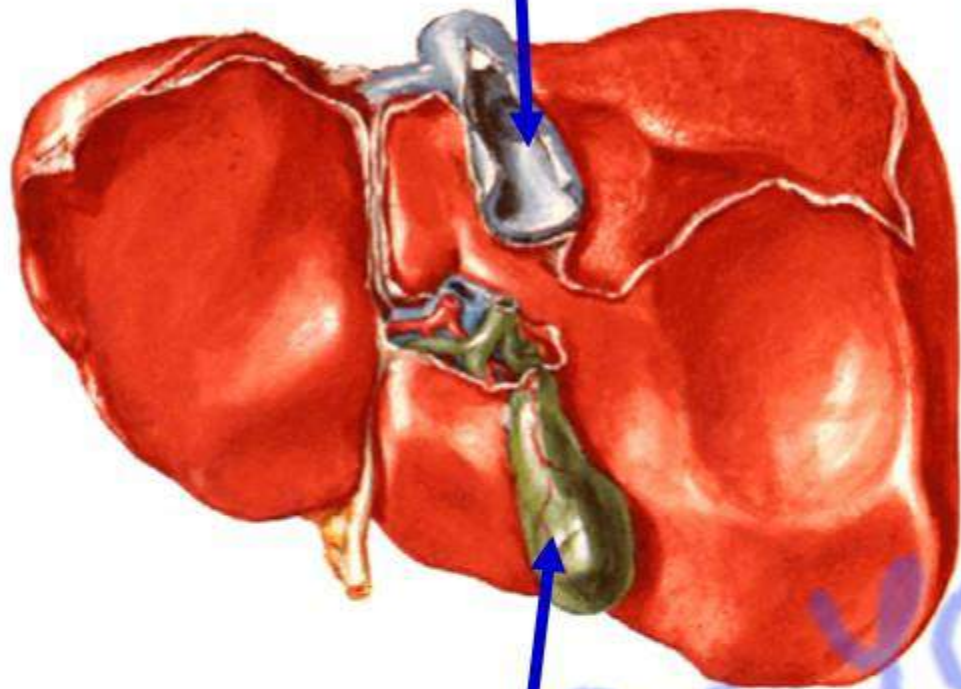
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Physiological Lobes and segmentations of Liver

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IVC



Gall bladder

- The liver is divided into right and left lobes according to the pattern of the **portal triad (VAD)**: portal vein, hepatic artery and common hepatic duct.
- The **Cantlie line of demarcation** between the right and left lobes **extending from the gall bladder to the inferior vena cava**.
- **Caudate and quadrate lobes** **anatomically** related to right lobe but **physiologically** related to left lobe

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Right (part of) liver

Left (part of) liver

Right
medial
division

Left
medial
division

Right
lateral
division

Left
lateral
division

VII—

VIII

IV

II

III

VI—

V

Right
lobe

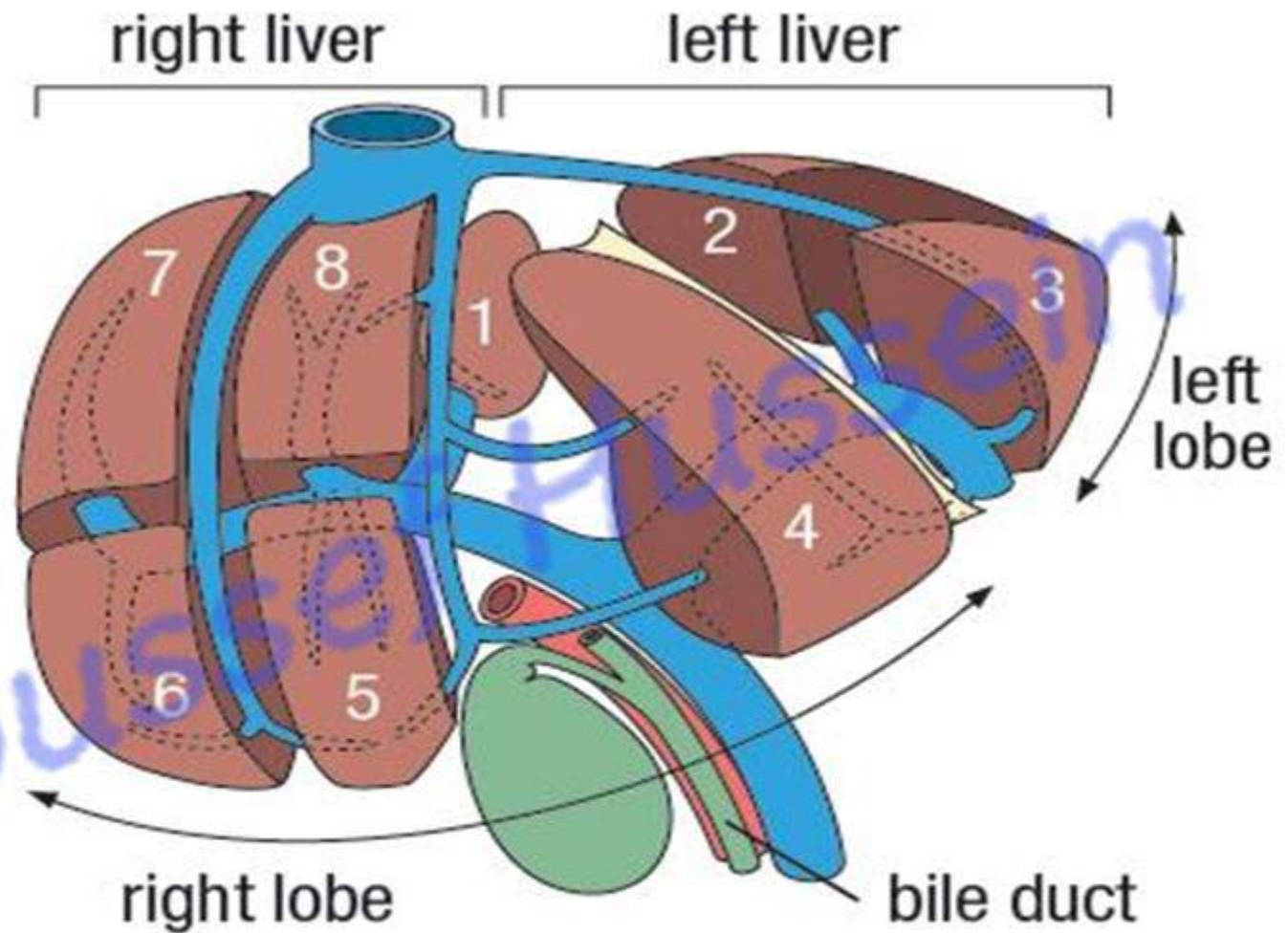
Left
lobe

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- Each of left and right lobe is divided into lateral and medial division

- 1- Caudate lobe of left lobe
- 2- Left posterior **lateral segment**
- 3- Left anterior **lateral segment**
- 4- Left medial segment
- 5- Right anterior medial segment
- 6- Right anterior **lateral segment**
- 7- Right posterior **lateral segment**
- 8- Right posterior medial segment



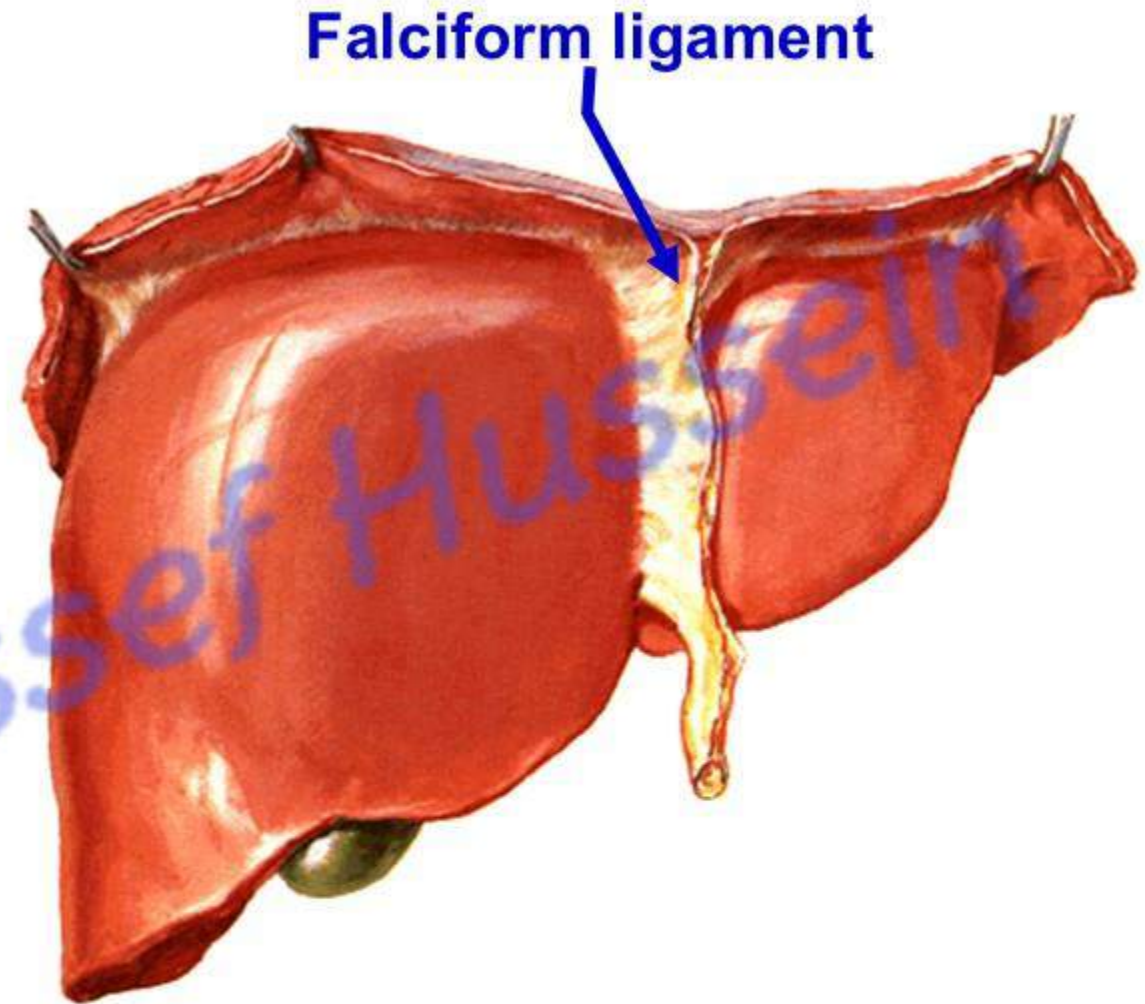
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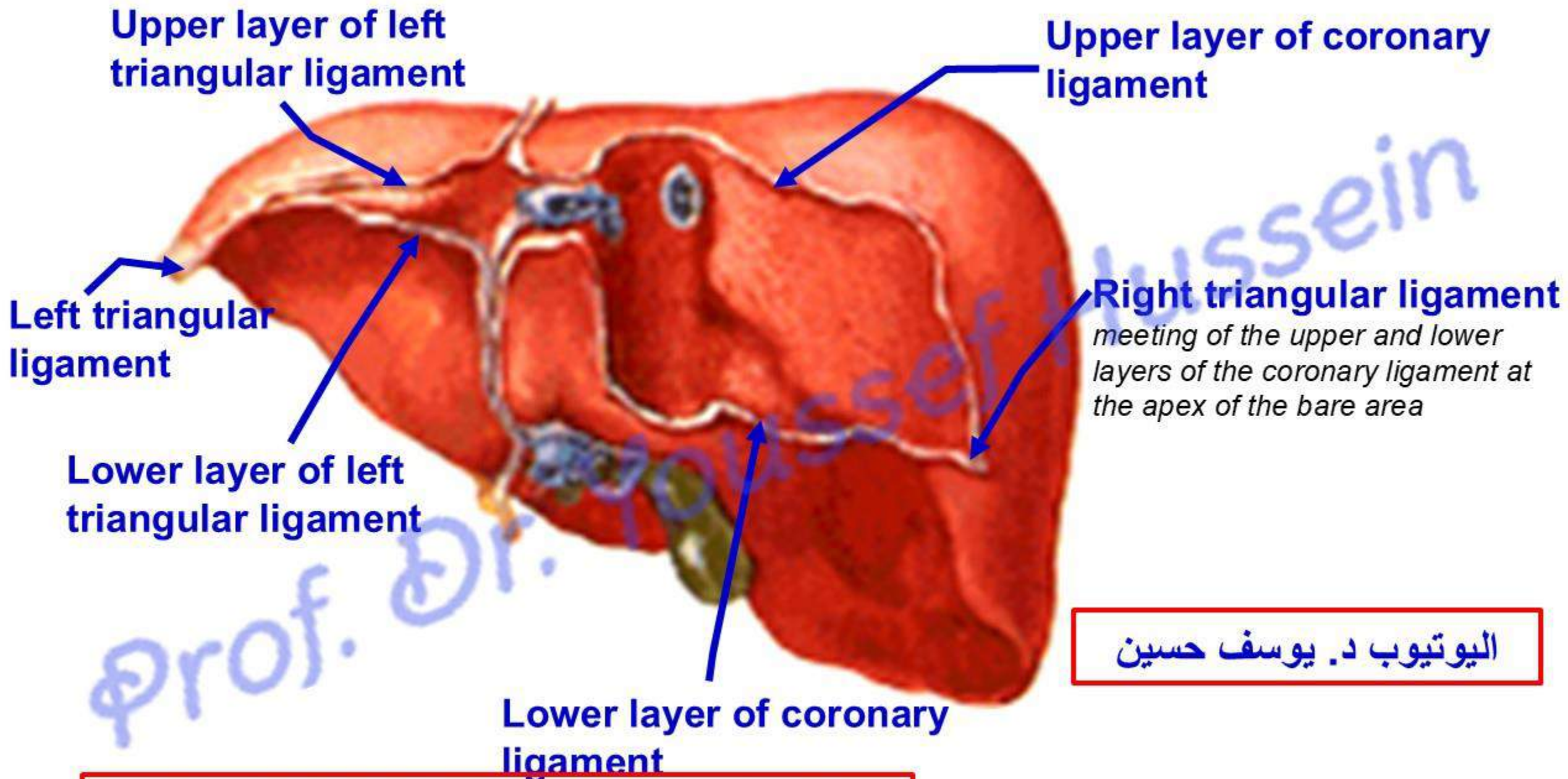
Ligaments of Liver

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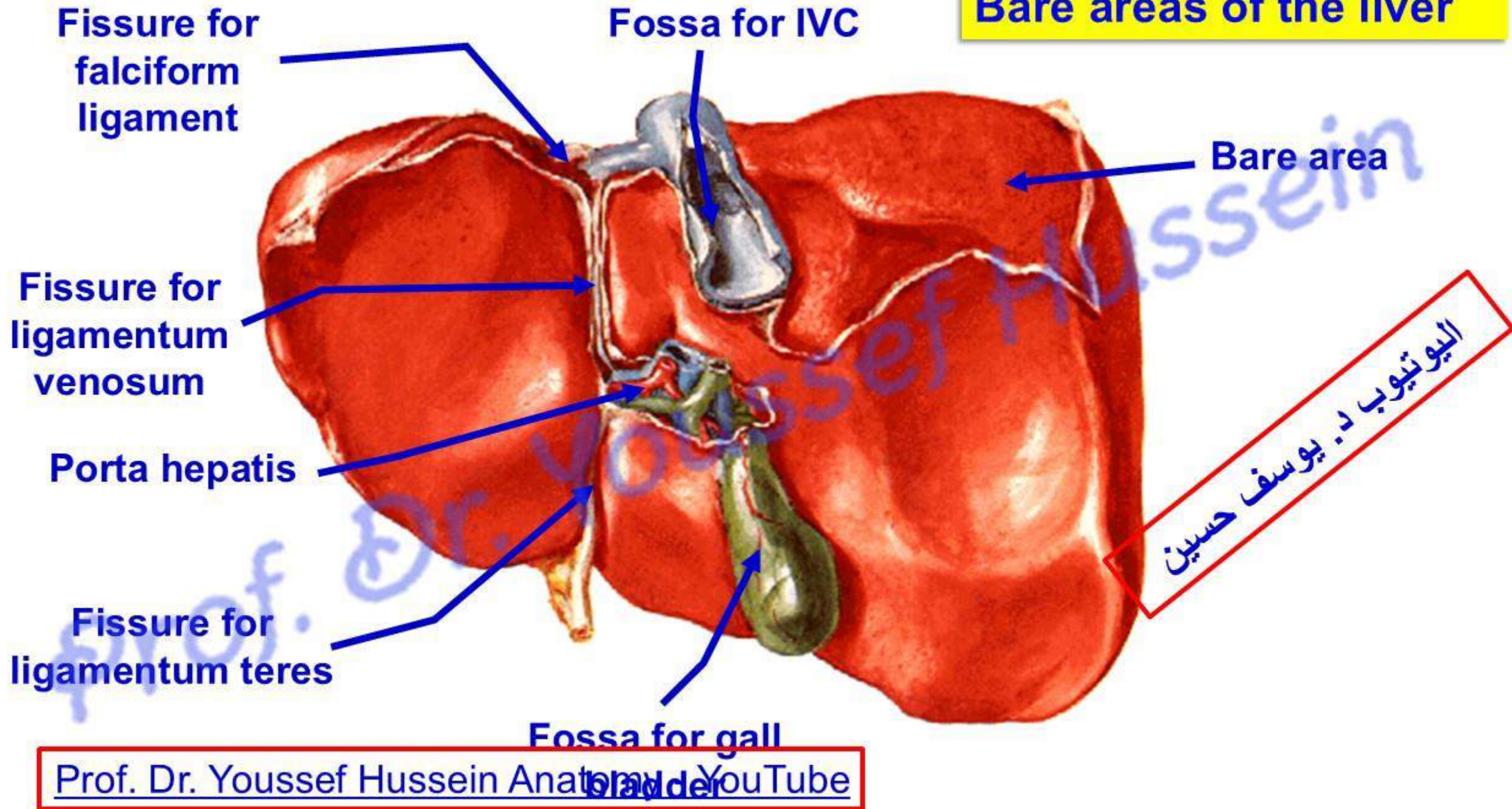
- **Falciform ligament:** sickle-shaped.
- **Borders,**
 - a- **Convex border** attached to the diaphragm and anterior abdominal wall.
 - b- **A concave border** attached to the superior and anterior surfaces of liver.
 - c- **A straight free border** which extends from the umbilicus to the liver.
It contains ligamentum teres and paraumbilical vein.

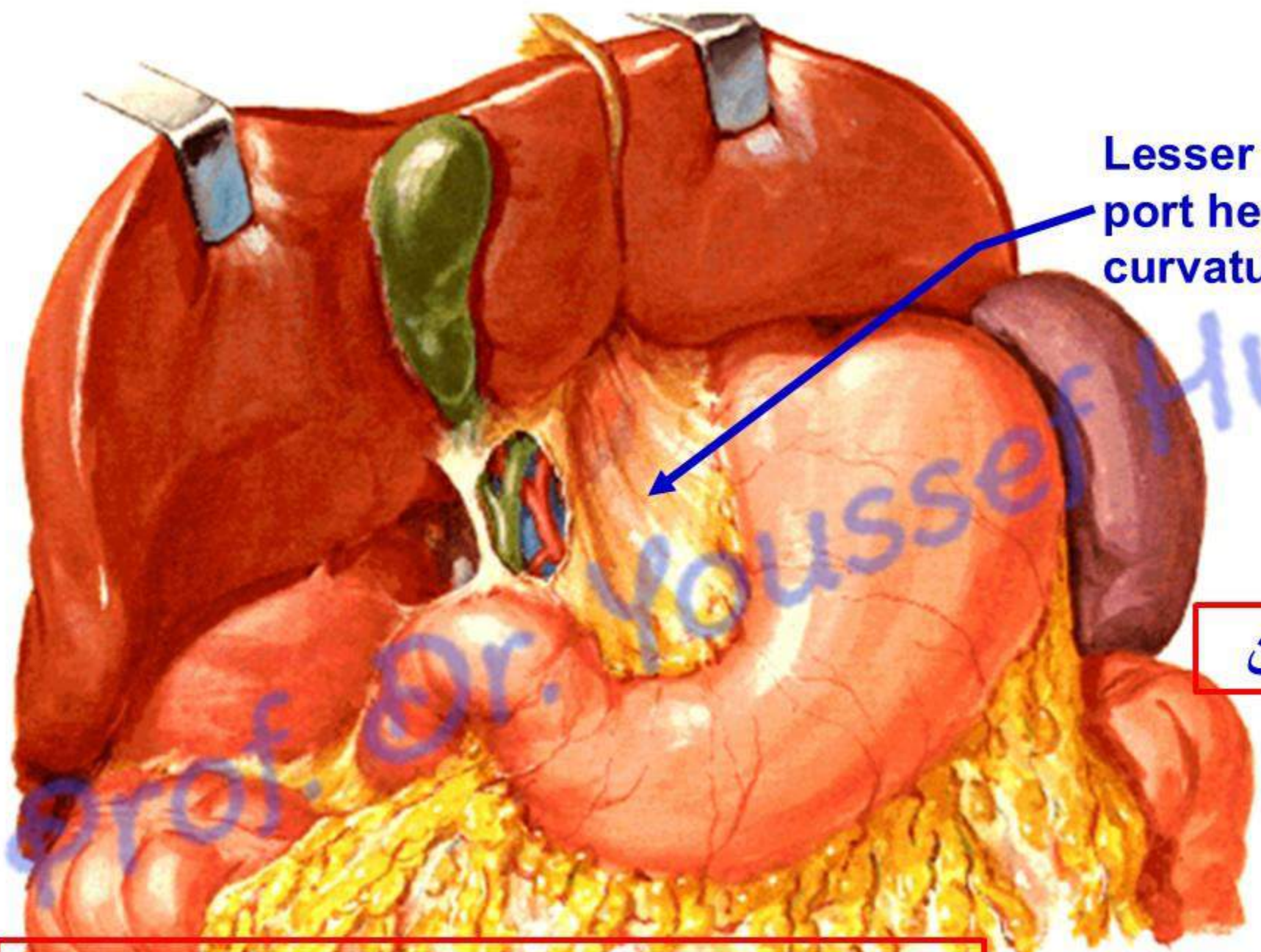


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Bare areas of the liver





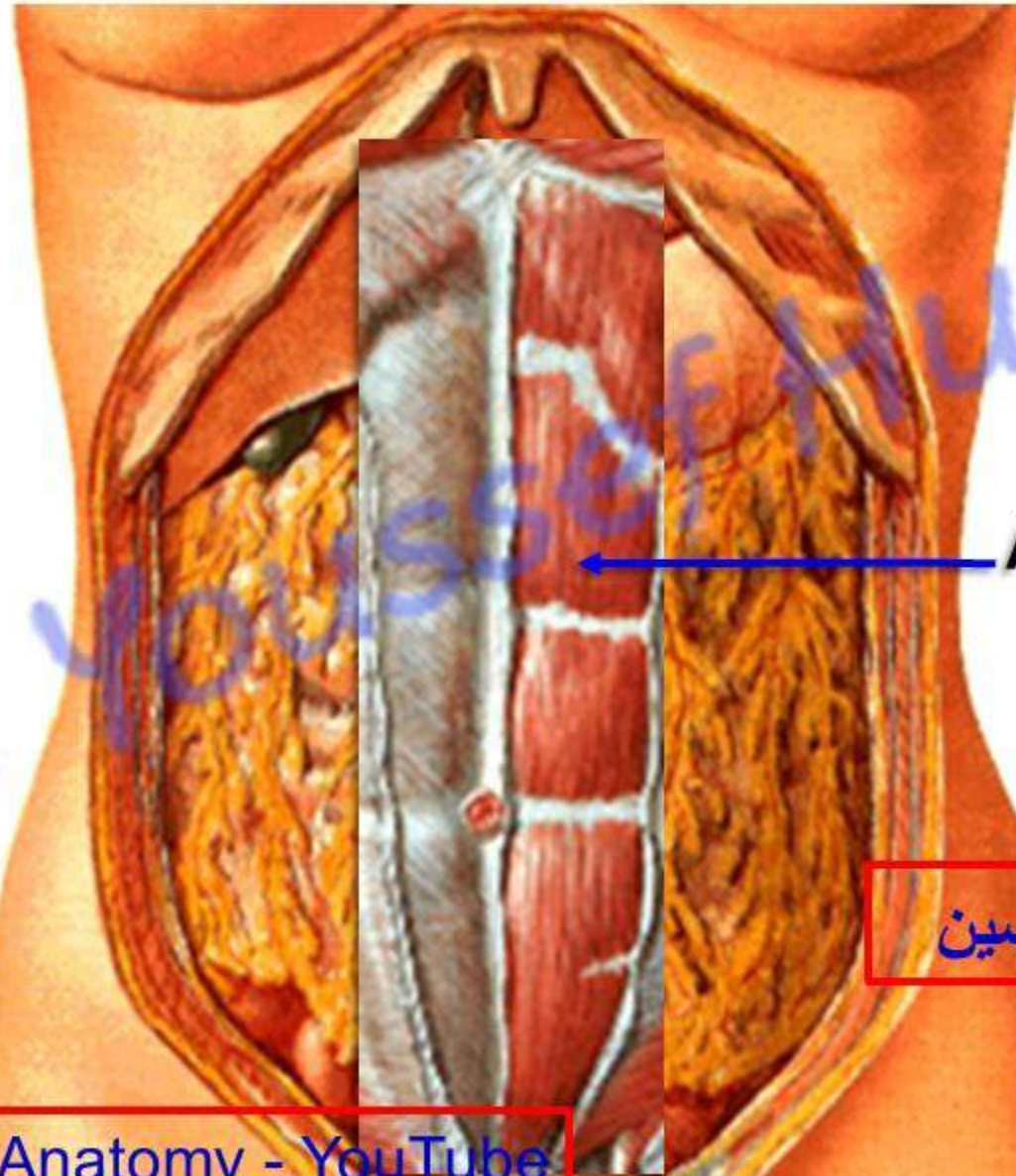
Lesser omentum between
port hepatis and lesser
curvature of stomach

This anatomical illustration shows the posterior view of the stomach and the inferior surface of the liver. The lesser omentum is depicted as a yellowish, fibrous structure connecting the lesser curvature of the stomach to the porta hepatis of the liver. A blue arrow points from the text label to this structure. The liver is shown in a reddish-brown color, and the stomach is a lighter pinkish-red. A green gallbladder is visible on the right side of the liver. A large, semi-transparent watermark 'Prof. Dr. Youssef Hussein' is overlaid diagonally across the image.

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Anterior relations of liver

- Anterior abdominal wall.
- Diaphragm.
- Xiphoid process
- **Right** 6th to 10th costal cartilage and right pleura and lung.
- **Left** 7th and 8th costal cartilage and left pleura and lung.

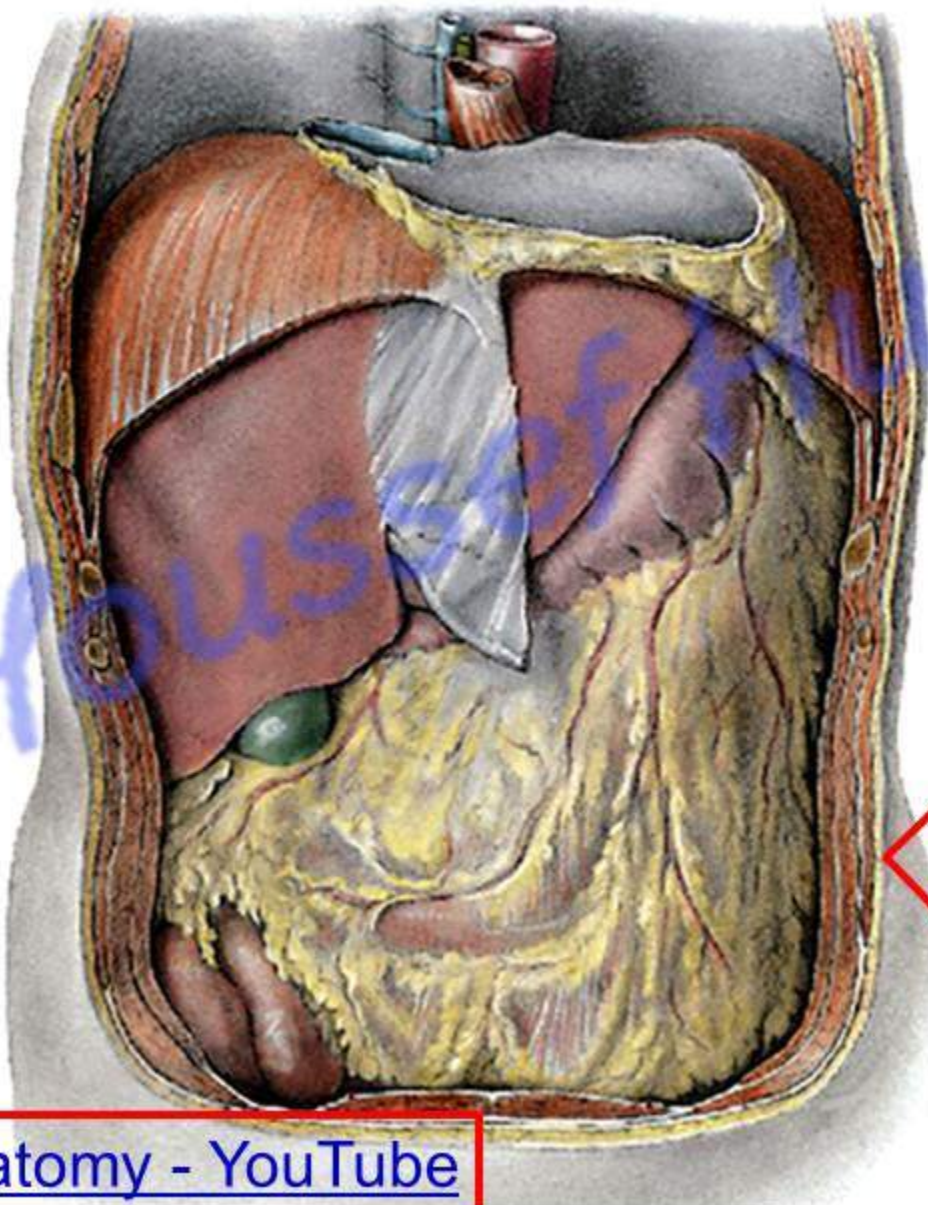


Anterior abdominal wall

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Superior relations of liver

- **Superior surface** related to **diaphragm** which separates the liver from
- a- The pleura and base of the lung on **each side**.
- b- The pericardium and heart in the **middle**.



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Posterior relations of liver

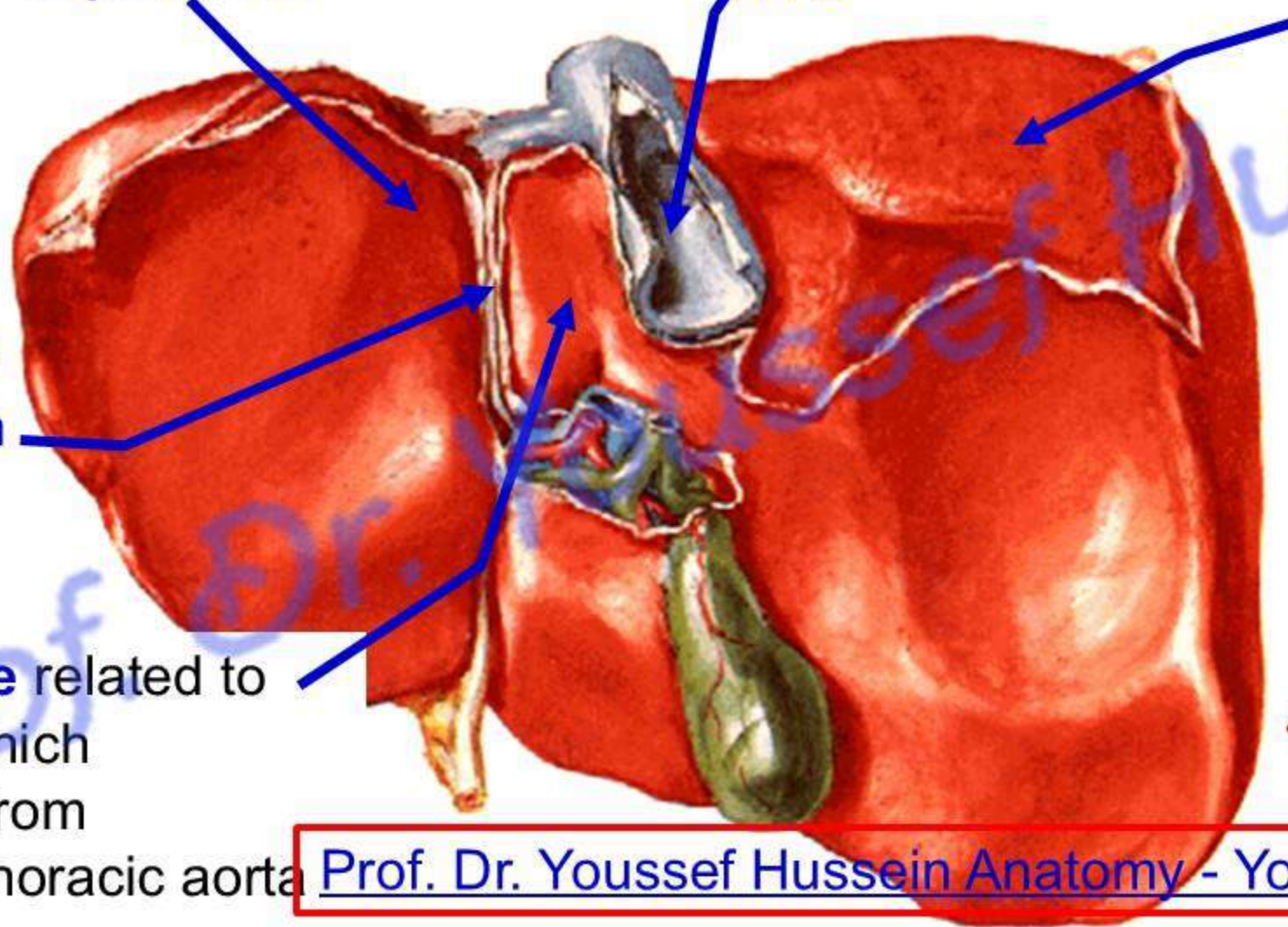
Esophageal
impression

IVC

Bare area related
to the right
suprarenal gland

Fissure for
ligamentum
venosum

Caudate lobe related to
diaphragm which
separated it from
descending thoracic aorta



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Inferior relations of liver

Gastric impression
related to body of stomach

Renal impression
related to anterior surface
of the right kidney

**Tuber
omental**

**Duodenal
impression** related to
2nd part of duodenum

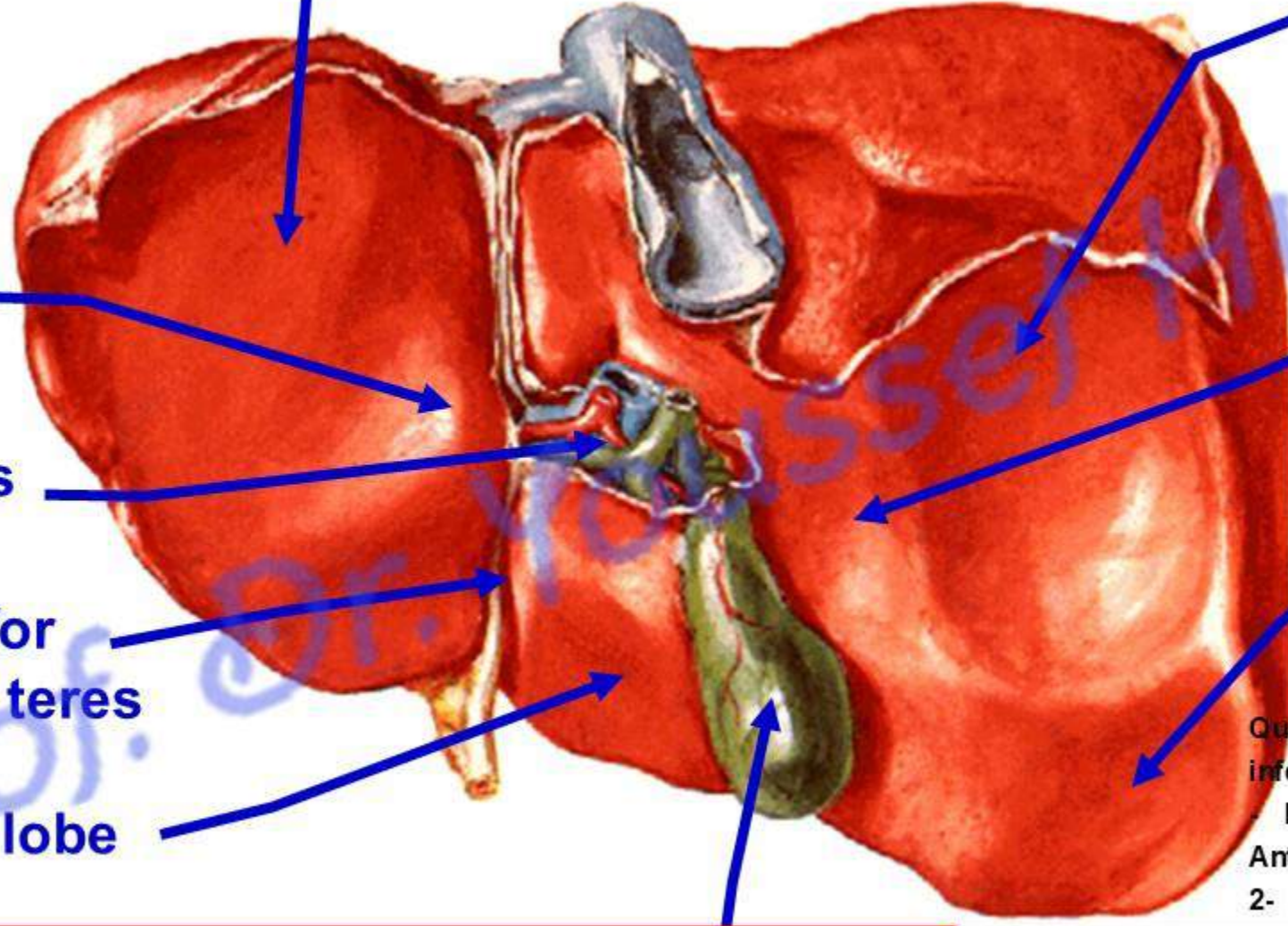
Porta hepatis

Colic impression
related to right colic
flexure

**Fissure for
ligamentum teres**

Quadrante lobe

Quadrante lobe: a quadrangular area of the
inferior surface of the right lobe;
It is related to: 1- Transverse colon,
Anterior.
2- Pylorus and first part of the duodenum
Middle.
3- Lesser omentum, Posterior.



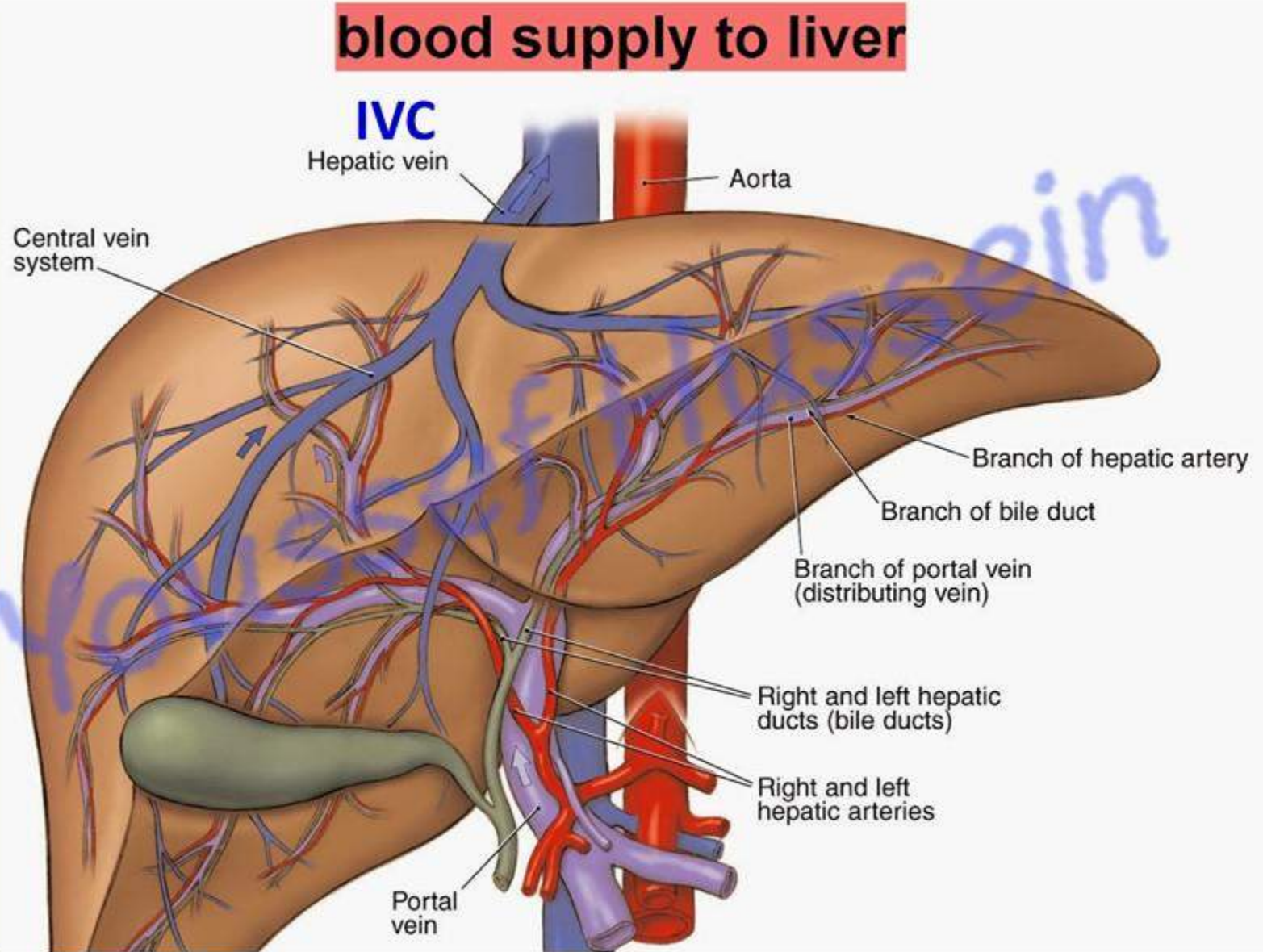
- Blood supply

1- Hepatic artery from coeliac trunk (left and right branches). It carries oxygenated blood.

2- Hepatic veins → into the inferior vena cava.

2- Portal vein carries venous blood from the gastrointestinal tract. **Metastasis or infection from intestine may reach liver**

N.B;- Blood is mixed in the liver sinusoids.

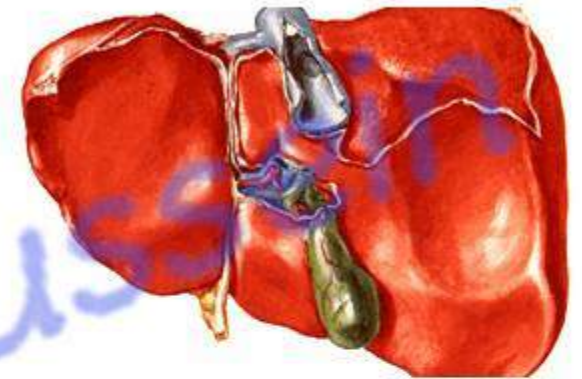


• Lymphatic drainage

- The lymphatic drainage of the liver consists of two major pathways:

1- Superficial lymphatic end into:

- a- The lymph nodes **around the I.V.C.**
- b- The lymph nodes **in the porta hepatis.**
- c- Para-cardiac nodes **around the lower part of esophagus**
- d- Coeliac lymph nodes **around the coeliac trunk.**



2- Deep lymphatic: divided into ascending and descending trunks

- a- **Ascending trunk** end in the lymph nodes **around the I.V.C.**
- b- **Descending trunk** drain into hepatic lymph nodes **in porta hepatis.**
- These lymph nodes end in the **intestinal trunk to cisterna chyli.**

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https://www.youtube.com/channel/UCVSNqbibj9UWYaJdd_cn0PQ

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Thank You

Questions

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