What is Liver Anatomy?

Worksheet

The liver has two main lobes (right and left) split by the falciform ligament, and is further divided into 8 functionally independent Couinaud segments based on blood supply and bile drainage. The hilum (porta hepatis) is where the portal vein, hepatic artery, and bile duct enter or exit.

Questions

1. How many functional segments does the liver have in the Couinaud classification?

A) 4
B) 6
C) 8
D) 10

2. What structure separates the right and left anatomical lobes of the liver?

A) Falciform ligament
B) Common bile duct
C) Renal pelvis
D) Islets of Langerhans

3. Which structures pass through the hilum (porta hepatis)?

A) Renal artery and ureter
B) Portal vein, hepatic artery, bile duct
C) Pancreatic duct and CBD only
D) Aorta and vena cava

4. Which Couinaud segment is the caudate lobe?

A) Segment I
B) Segment IV
C) Segment VI
D) Segment VIII

5. A surgeon plans to remove segments V and VIII due to a tumor. Which lobe do these belong to, and what major structure is at risk near the hilum?

6. A patient's CT scan shows the falciform ligament dividing two structures. What does this ligament anatomically separate?

7. Identify the three structures that enter or exit the liver at the hilum (porta hepatis).

8. Define: What are the two main anatomical lobes of the liver?

9. Define: How many Couinaud segments does the liver have?

10. Define: What is the hilum of the liver called?

Answer Key

1. C) 8 - The Couinaud system divides the liver into 8 independent segments (I-VIII).
2. A) Falciform ligament - The falciform ligament is the peritoneal fold marking this division.
3. B) Portal vein, hepatic artery, bile duct - These three structures form the portal triad at the porta hepatis.
4. A) Segment I - Segment I is the caudate lobe, draining independently into the vena cava.
5. Segments V and VIII are part of the right lobe (Couinaud classification). The portal triad (portal vein, hepatic artery, bile duct) passes through the porta hepatis and must be carefully preserved for the remaining segments.
6. The falciform ligament is a peritoneal fold connecting the liver to the anterior abdominal wall. It marks the anatomical division between the right and left lobes of the liver, though not the true functional/vascular division.
7. The porta hepatis is the liver's 'gateway.' It contains the portal vein (inflow, nutrient-rich blood from the gut), the hepatic artery (inflow, oxygenated blood), and the common hepatic duct (outflow, bile).
8. The right lobe and left lobe, separated by the falciform ligament.
9. 8 independent segments (I-VIII), each with its own blood supply and bile drainage.
10. The porta hepatis - where the portal vein, hepatic artery, and bile duct pass.