What is Liver Anatomy?

Worksheet

The liver has four anatomical lobes (right, left, caudate, quadrate) separated by the falciform ligament and porta hepatis, and eight functional segments defined by the Couinaud classification based on vascular supply.

Questions

1. How many anatomical lobes make up the liver?

A) Two
B) Three
C) Four
D) Eight

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

A) Portal vein
B) Falciform ligament
C) Common bile duct
D) Hepatic artery

3. How many functional segments does the Couinaud classification define?

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

4. Which lobe corresponds to Couinaud segment I?

A) Right lobe
B) Left lobe
C) Caudate lobe
D) Quadrate lobe

5. A surgeon needs to remove a tumor confined to Couinaud segment IV without harming the rest of the liver. Which anatomical lobe roughly corresponds to this segment?

6. On an ultrasound, a mass sits posterior to the liver, wrapped around the inferior vena cava. Which lobe is it in?

7. Why can't the anatomical right/left lobe division (falciform ligament) be used for liver surgery planning?

8. Define: How many anatomical lobes does the liver have?

9. Define: What separates the right and left anatomical lobes?

10. Define: What is the Couinaud classification?

Answer Key

1. C) Four - The liver has four anatomical lobes: right, left, caudate and quadrate.

2. B) Falciform ligament - The falciform ligament on the liver's anterior surface marks this boundary.

3. C) 8 - Couinaud divides the liver into 8 independently supplied segments (I-VIII).

4. C) Caudate lobe - The caudate lobe is defined as segment I in the Couinaud system.

5. Segment IV lies medially, between the falciform ligament and the gallbladder fossa. Anatomically this region corresponds to the quadrate lobe. So the resection targets the quadrate lobe area (segment IV).

6. The caudate lobe lies on the posterior surface of the liver, adjacent to the IVC. Its location near the IVC and independent venous drainage make it distinct. Answer: the caudate lobe (Couinaud segment I).

7. The falciform ligament divides the liver by surface appearance only, not by blood supply. Surgeons need to know each region's independent vascular pedicle to resect safely. So they use the Couinaud functional segments (I-VIII), based on portal/hepatic vein branches, instead.

8. Four: right, left, caudate and quadrate lobes.

9. The falciform ligament on the anterior surface.

10. A division of the liver into 8 functional segments, each with independent blood supply and bile drainage, used for surgery.