Microscopic anatomy and structure

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The liver comprises approximately 100 /uni00A0 000 hexagonal func tional units known as lobules with a central vein surrounded Summary box 69.1 Liver anatomy /uni25CF /uni25CF /uni25CF /uni25CF Karl Wilhelm von Kup ff er , 1829–1902, Professor of Anatomy at Kiel (1869), Königsberg (1875) and Munich (1880), Germany , described these ‘stellate cells’ in 1880. by six hepatic portal veins and six hepatic arteries. These vessels are connected by capillary-like tubes called sinusoids, which extend to meet the central vein. Lobules are separated by hepatic sinusoids, which are large-diameter capillaries lined by endothelial cells between rows of plates or cords of hepato - cytes. Each sinusoid contains Kup ff er cells, a type of macro - phage that captures and breaks down e ff ete red blood cells, and hepatocytes, which are cuboidal epithelial cells making up the majority of cells in the liver. Hepatocytes perform most liver functions, including metabolism, storage, digestion and bile pr oduction. Tiny bile canaliculi run parallel to the sinusoids on the contralateral side to the hepatocytes and drain bile in the opposite direction to the blood flow via the bile duct tributaries within the portal tracts. -

There are two anatomical lobes with a separate blood supply, bile duct and venous drainage There is a dual blood supply; 80% portal vein and 20% hepatic artery The liver regenerates to 90–100% of its previous volume following resection Resection is based on anatomical lines to preserve maximal functioning liver and blood supply Portal vein Left hepatic artery Hepatic artery proper Left gastric artery Splenic artery Abdominal aorta Superior mesenteric artery

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