

Chapter 13

Splanchnic Circulation: Liver and Spleen

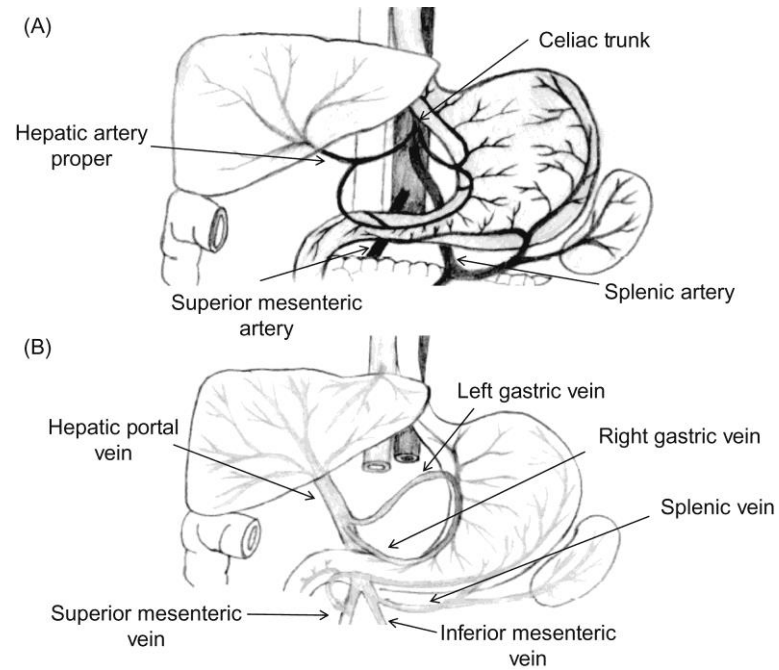


Figure 13.1 Arteries supplying the superior abdominal organs (A) and the hepatic portal system (B). These vascular systems illustrate that the liver obtains blood from the main arterial systemic circulation (as a branch of the celiac trunk) and from the venous circulation from the majority of the gastrointestinal system. *Source: Adapted from Martini and Nath (2009).*

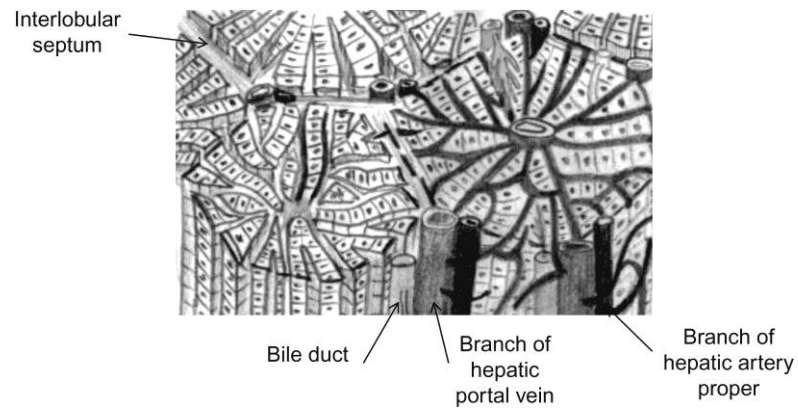


Figure 13.2 A schematic view of the liver lobule structure illustrating that branches of the hepatic artery proper and the hepatic portal vein reach the lobule level at each vertex of a hexagon-like shape. Capillaries from the vessels penetrate toward the central vein region, which is illustrated in Figure 13.4. Each lobule is approximately 1 mm in length. *Source: Adapted from Martini and Nath (2009).*

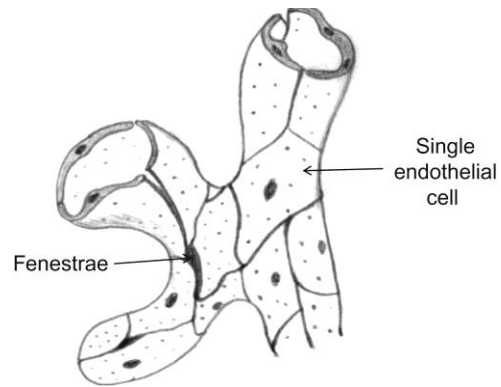


Figure 13.3 Schematic of a fenestrated capillary system illustrating that there are large pores between neighboring endothelial cells. These large pores allow for the rapid exchange of water and solutes between blood and interstitial fluid and penetrate the entire endothelial wall.
Source: Adapted from Martini and Nath (2009).

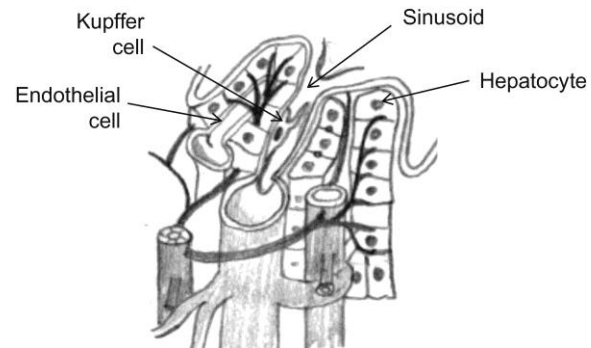


Figure 13.4 Schematic of a single liver lobule illustrating both the cells that comprise the liver and sinusoid subunit. Blood from the hepatic artery proper and the hepatic portal vein converge at the sinusoid level, are filtered by hepatocytes and Kupffer cell, and then pass to the central vein location. *Source: Adapted from Martini and Nath (2009).*

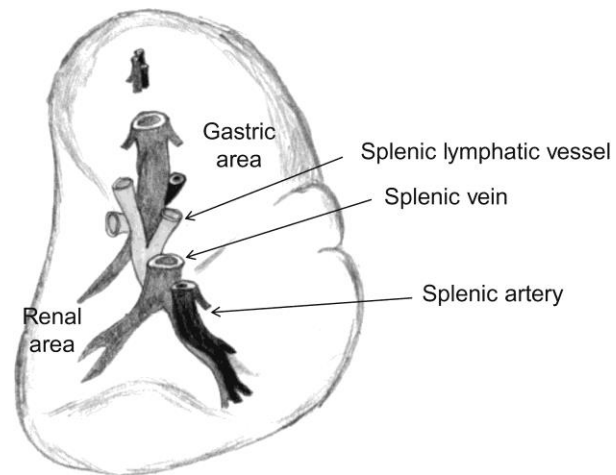


Figure 13.5 Posterior view of the spleen illustrating the hilum where the splenic artery, splenic vein, and the splenic lymphatic vessel enter/leave the spleen. *Source: Adapted from Martini and Nath (2009).*