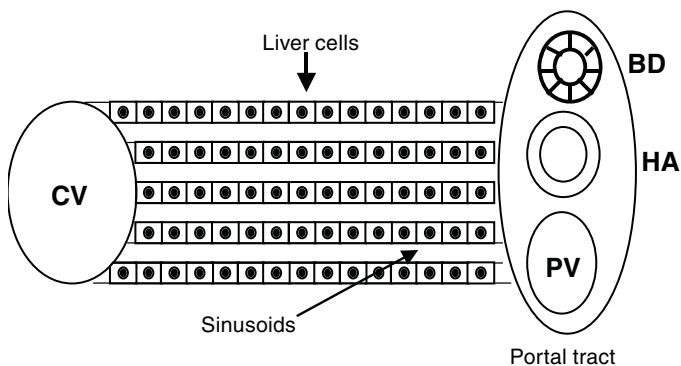


e26 Atlas of Liver Biopsies

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Although clinical and laboratory features yield clues to the extent of inflammatory processes (disease grade), the degree of scarring and architectural distortion (disease stage), and the nature of the disease process, the liver biopsy is felt to represent the “gold standard” for assessing the degree of liver injury and fibrosis. Examination of liver histology provides not only a basis for quantitative scoring of disease activity and progression but also a wealth of qualitative information that can direct and inform diagnosis and management.

A normal liver lobule consists of portal, lobular, and central zones. The portal tract contains the hepatic artery (HA) and portal vein (PV) that represent the dual vascular supply to the liver as well as the bile duct (BD). The lobular area contains cords of liver cells surrounded by vascular sinusoids, and the central zone consists of the central vein (CV), the terminal branch of the hepatic vein (see figure below).



Included in this atlas of liver biopsies are examples of common morphologic features of acute and chronic liver disorders, some involving the lobular areas (e.g., the lobular inflammatory changes of acute hepatitis, apoptotic hepatocyte degeneration in acute and chronic hepatitis, virus antigen localization in hepatocyte cytoplasm and/or nuclei, viral inclusion bodies), and others involving the portal tracts (e.g., the portal mononuclear infiltrate that expands and spills over beyond the border of periportal hepatocytes in chronic hepatitis C, autoimmune hepatitis, and liver allograft rejection). Other histologic features of importance include hepatic steatosis (observed in alcoholic liver injury, in nonalcoholic fatty liver disorders, in metabolic disorders—including mitochondrial injury—and in patients with chronic viral hepatitis); injury of bile ducts in the portal tract, an important diagnostic hallmark of primary biliary cirrhosis as well as of liver allograft rejection; plasma cell infiltration common in autoimmune hepatitis; and portal inflammation affecting portal veins (“endotheli- alitis”) in liver allograft rejection.

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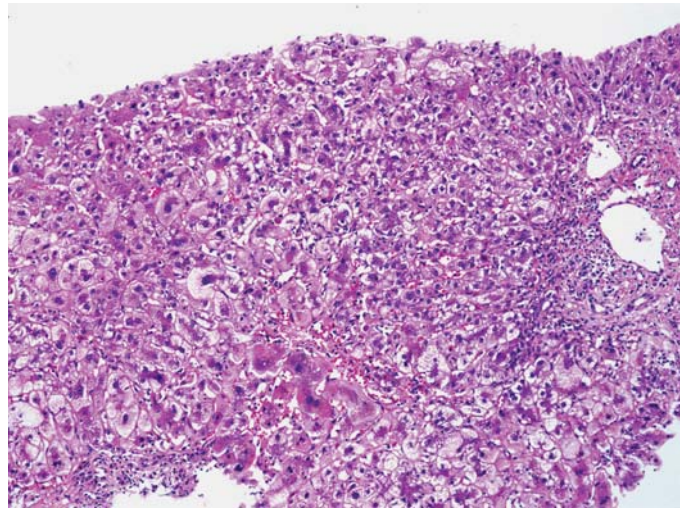


FIGURE e26-1 Acute hepatitis with lobular inflammation and hepatocellular ballooning (H&E, 10 \times).

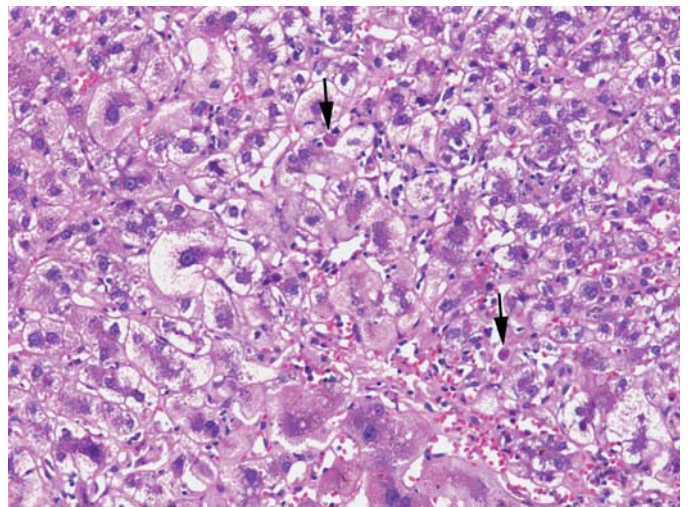


FIGURE e26-2 Acute hepatitis, higher magnification, showing lobular inflammation, hepatocellular ballooning, and acidophilic bodies (arrows) (H&E, 20 \times).

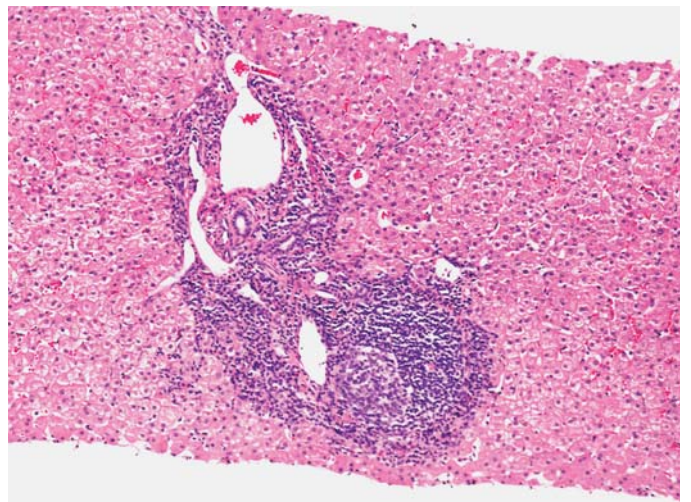


FIGURE e26-3 Chronic hepatitis C with portal lymphoid infiltrate and lymphoid follicle containing germinal center (H&E, 10 \times).

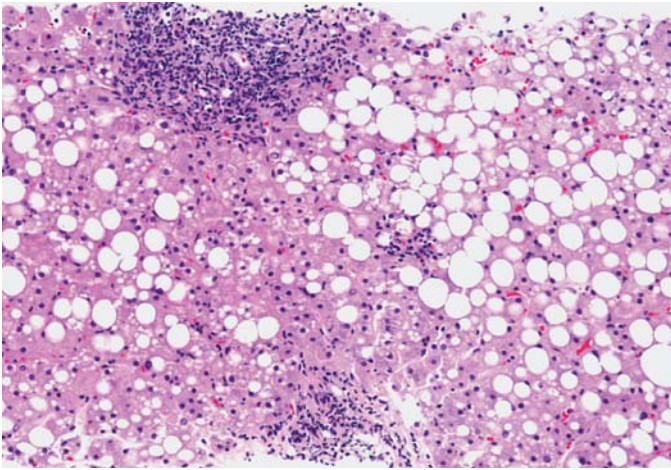


FIGURE e26-4 Chronic hepatitis C with portal and lobular inflammation and steatosis (H&E, 10 \times).

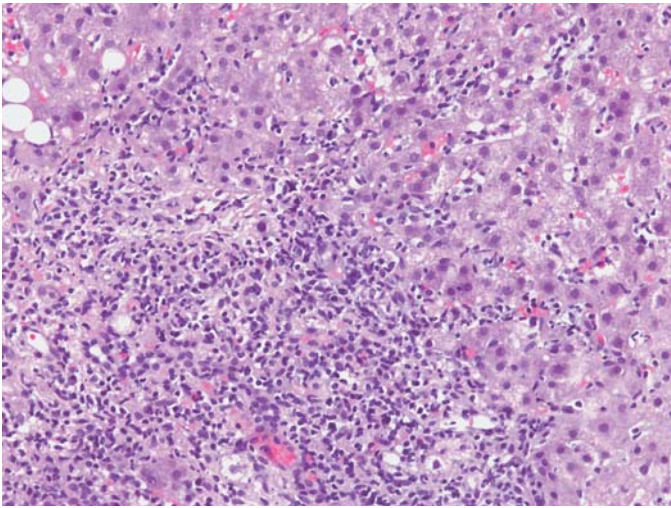


FIGURE e26-5 Chronic hepatitis C with portal inflammation and interface hepatitis (erosion of the limiting plate of periportal hepatocytes by infiltrating mononuclear cells) (H&E, 20 \times).

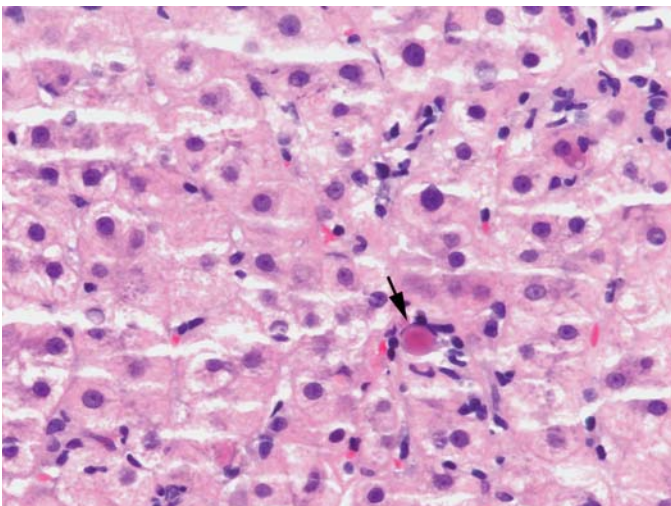


FIGURE e26-6 Lobular inflammation with acidophilic body (apoptotic body) surrounded by lymphoid cells (H&E, 40 \times).

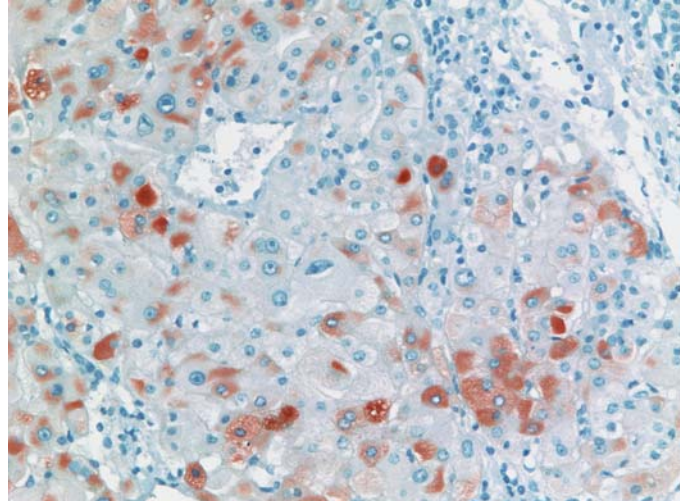


FIGURE e26-7 Chronic hepatitis B with hepatocellular cytoplasmic staining for hepatitis B surface antigen (immunoperoxidase, 20 \times).

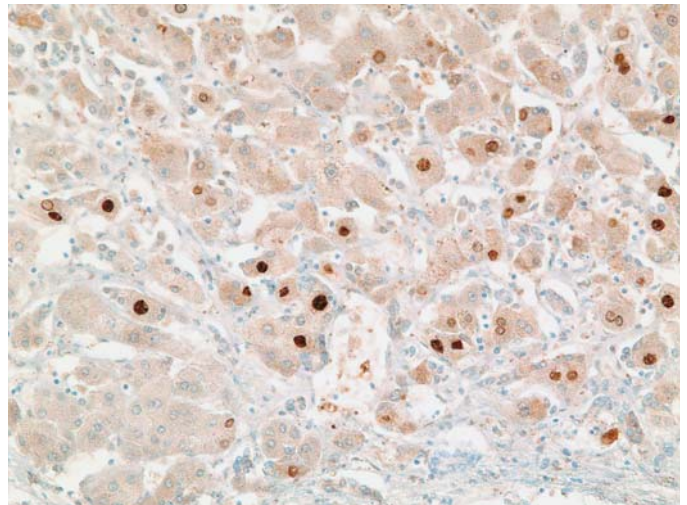


FIGURE e26-8 Chronic hepatitis B with hepatocellular nuclear staining for hepatitis B core antigen (immunoperoxidase, 20 \times).

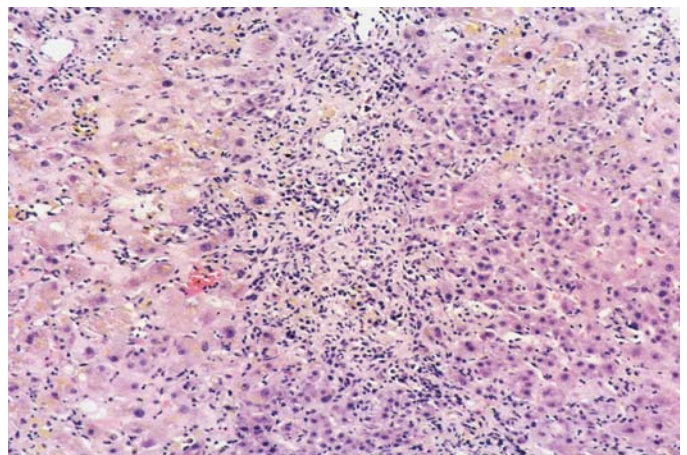


FIGURE e26-9 Autoimmune hepatitis with portal and lobular inflammation, interface hepatitis, and cholestasis (H&E, 10 \times).

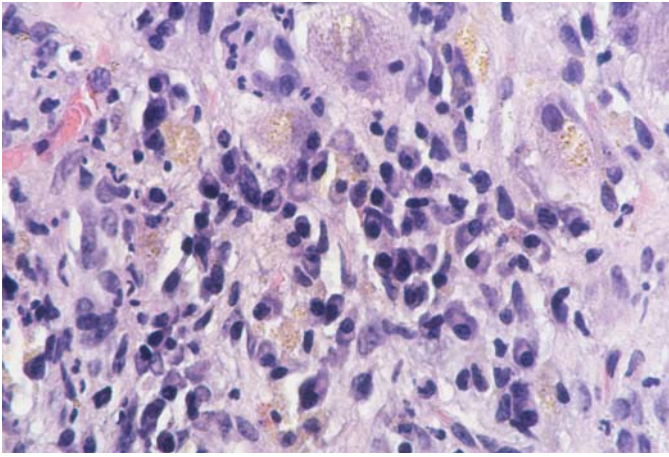


FIGURE e26-10 Autoimmune hepatitis, higher magnification, showing dense plasma cell infiltrate in the portal and periportal regions (H&E, 40 \times).

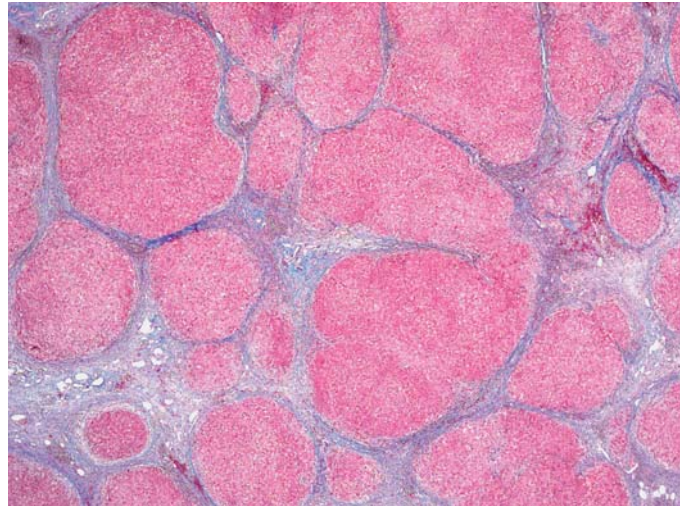


FIGURE e26-13 Cirrhosis with architectural alteration resulting from fibrosis and nodular hepatocellular regeneration (Masson trichrome, 2 \times).

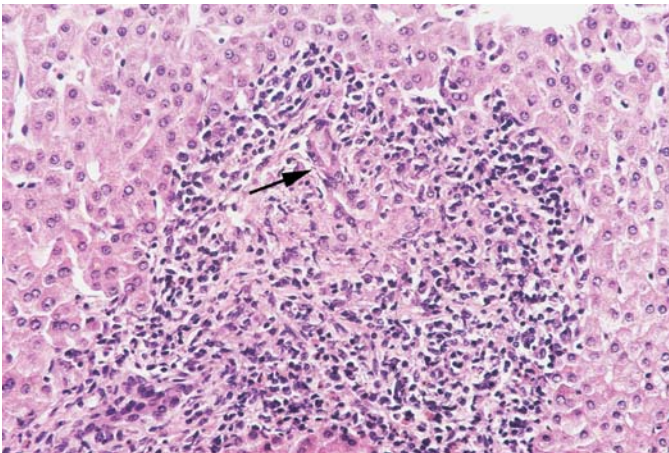


FIGURE e26-11 Primary biliary cirrhosis with degenerating bile duct epithelium ("florid ductular lesion") (*arrow*) surrounded by epithelioid granulomatous reaction and lymphoplasmacytic infiltrate (H&E, 40 \times).

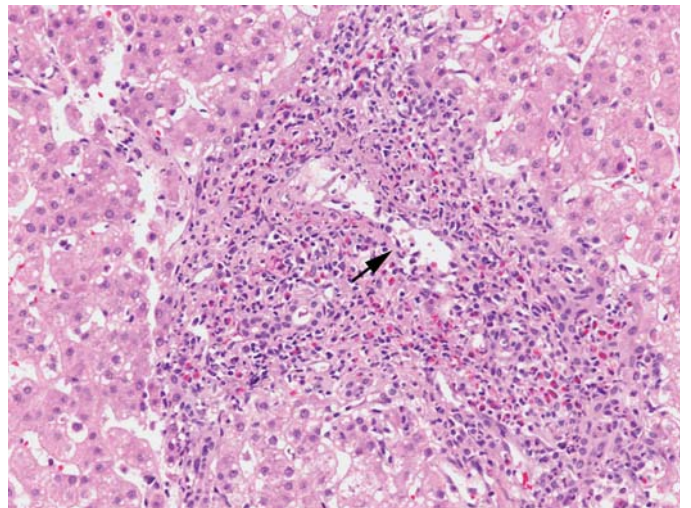


FIGURE e26-14 Acute cellular rejection of orthotopic liver allograft demonstrating a mixed inflammatory cell infiltrate (lymphoid cells, eosinophils, neutrophils) of the portal tract as well as endothelitis of the portal vein (*arrow*) and bile duct injury (H&E, 10 \times).

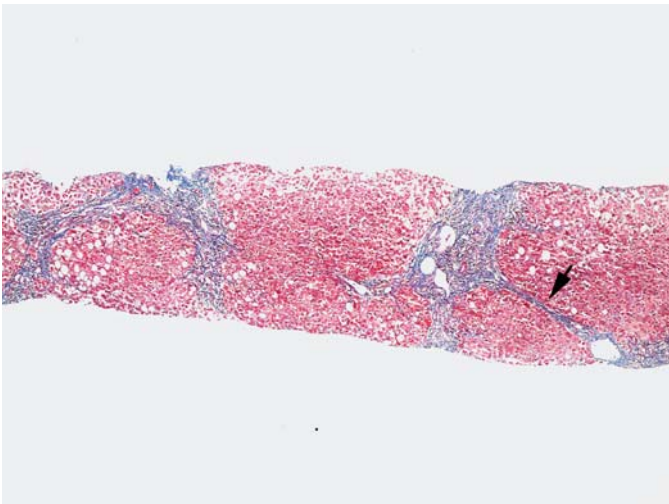


FIGURE e26-12 Chronic hepatitis C with bridging fibrosis (*arrow*) (Masson trichrome, 10 \times).

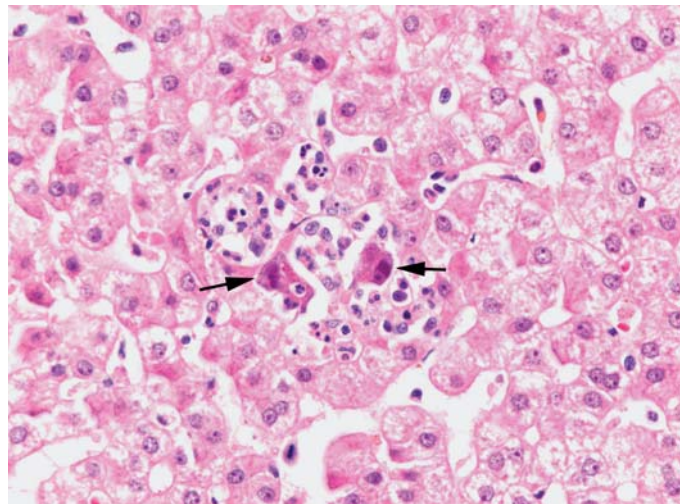


FIGURE e26-15 Liver allograft with cytomegalovirus infection showing hepatocytes with nuclear inclusions (*arrows*) surrounded by a neutrophilic and lymphoid infiltrate (H&E, 10 \times).

