Types of Acute Cholangitis

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Annotation: Acute cholangitis, also known as ascending cholangitis, is a life-threatening condition caused by an ascending bacterial infection of the biliary tree. Choledocholithiasis is the most common cause, with infection-causing stones in the common bile duct leading to partial or complete obstruction of the biliary system.

Key words: *cholangitis, recurrent pyogenic cholangitis, sonography, choledocholithiasis*

Suppurative Cholangitis

Acute bacterial cholangitis is a potentially life-threatening infection, usually arising in the setting of bile duct obstruction, with ensuing bacterial contamination, stagnant bile, and increased biliary pressures. Choledocholithiasis accounts for up to 80% of cases of acute cholangitis. CT or MRI shows diffuse, concentric wall thickening of the bile duct with associated periductal edema and mural enhancement, with or without pneumobilia. Marked inhomogeneous parenchymal enhancement in the arterial is frequently present in patients with acute suppurative cholangitis.

Recurrent pyogenic cholangitis is characterized by stenosis or strictures of the peripheral ducts, with decreased branching and abrupt tapering ("arrowhead appearance") associated with disproportionate dilatation of the central and extrahepatic bile ducts. Sonography, CT, and MRCP not only allow the correct diagnosis to be made but also serve as a vital road map for subsequent intervention by illustrating the location and extent of disease. MRCP findings of RPC include IBD or EBD stones, multiple strictures of IBD, short-segment focal EBD stricture, localized dilatation of lobar or segmental bile ducts with a predilection for the lateral segment of the left lobe and the posterior segment of the right lobe, bile duct wall thickening, abrupt tapering, and decreased arborization of the IBDs. CC associated with RPC most frequently occurs in segments with a high stone burden or at atrophied segments, and suggestive imaging features of CC development include progressive atrophy of affected hepatic segments or lobes and narrowing or obliteration of the portal vein.

Primary Sclerosing Cholangitis

PSC is a progressive cholestatic disease characterized by inflammation and fibrosis of the bile duct which is commonly associated with inflammatory bowel disease. Diagnosis of primary sclerosing cholangitis can be made by typical cholangiographic findings and the exclusion of secondary causes. The typical cholangiographic features include diffuse, multifocal short-segmental strictures and mild dilatation in the intrahepatic and extrahepatic bile ducts alternating with normal ducts, which sometimes produce "beaded" appearance. Patients with PSC have a 10–15% lifetime risk of developing CC, and CC in PSC usually presents as a periductal infiltrating type CC associated with dominant stenosis. Suggestive imaging findings of CC in PSC include irregular dominant stricture with a shouldered margin, prominent mural thickening, and rapidly progressed dilatation of the bile duct proximal to the stricture.

IgG4-Related Cholangitis

IgG4-related sclerosing cholangitis is the biliary manifestation of IgG4 sclerosing disease, a recently recognized disease entity that manifests histologically as infiltration by abundant IgG4-positive plasma cells. Differentiation of IgG4-SC from other types of sclerosing cholangitis, especially from PSC or bile duct cancers, is clinically important as IgG4-SC shows a dramatic response to steroid therapy. Unlike in

PSC, multifocal strictures in IgG4-related sclerosing cholangitis are long and continuous and are associated with prestenotic dilatation. An elevated serum IgG4 level and the presence of extrabiliary IgG4 sclerosing disease (e.g., involvement of the pancreas, kidneys, thyroid gland, and salivary glands) are strongly suggestive of IgG4-related sclerosing cholangitis. In cases of IgG4-SC, CT or MR imaging demonstrates long-segmental, symmetrical, circumferential wall thickening and delayed contrast enhancement of the involved bile ducts.

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