Mass-forming cholangiocarcinoma

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Cholangiocarcinoma is the second most common primary liver cancers. It is arising from epithelial cells of the biliary tract. It has been categorized to intrahepatic and extrahepatic. The Intrahepatic or peripheral cholangiocarcinoma can be presented as mass-forming, periductal infiltrating and intraductal growth. Many patients of mass-forming cholangiocarcinoma have symptoms such as abdominal pain about 85% but some patients don’t have any symptoms. This is the difficult cancer to diagnose. While patients were having any symptom, the disease was an advanced stage (unresectable). The diagnostic tools for assess this disease are imaging modalities include ultrasound (US), computed tomography (CT) with contrast, magnetic resonance imaging (MRI) with contrast. However, the goal standard for confirm diagnosis is tissue pathology. This article showed a case presentation and reviewed the imaging appearance of mass-forming cholangiocarcinoma.

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Keywords: Mass-forming cholangiocarcinoma, Peripheral cholangiocarcinoma, Computed tomography, Magnetic resonance imaging, Tissue pathology

Learning points
- Mass-forming cholangiocarcinoma (intrahepatic cholangiocarcinoma) is a type of tumor that forms within the liver. It usually presents as a mass, and it can be difficult to diagnose early because symptoms may not be present. The main diagnostic tools include imaging modalities such as ultrasound, computed tomography, and magnetic resonance imaging.

Case presentation

A 59-year-old Thai woman was admitted to the hospital with a two-month history of persistent back pain on the right side. She denied any relationship to food or drink and had not taken pain medications. She denied any fever, jaundice, or changes in bowel habits. Her medical history included type 2 diabetes, controlled with medication, and a history of smoking and alcohol consumption. She had no family history of cancer. Physical examination revealed no fever, not pale, anicteric, palpable lymph nodes, palpable liver 2 cm below the costal margin, liver span 14 cm, spleen dullness negative, bimanual palpation negative, no ascites, no point of tenderness at back, no back pain, no taut band.

Laboratory investigations showed complete blood count (CBC) with hemoglobin 11.9 g/dL, white blood cell 7,430 cells/mm³, liver function test showed total protein 7.4 g/dL, albumin 4.5 g/dL, globulin 2.9 g/dL, total bilirubin 0.5 mg/dL, direct bilirubin 0.1 mg/dL, alanine transaminase (ALT) 37 U/L, aspartate transaminase (AST) 27 U/L, alkaline phosphatase (ALP) 169 U/L, CA 19-9 5,375 U/mL, AFP 9.72 IU/mL. Imaging studies showed a mass in the liver, which was confirmed with ultrasound, computed tomography, and magnetic resonance imaging.

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Figure 1. Axial non-contrast (A), axial contrast enhanced in arterial phase (B), axial contrast enhanced in portal venous phase (C) and axial contrast enhanced in 5-minute delay phase (D) CT scans show a large ill-defined hypodense mass at hepatic segment 7/8, about 7.0x7.0x5.0 cm in APxLxH diameter, which has poor enhancement on arterial phase with gradual progressive enhancement on portal venous and 5-minute delay phase. Coronal contrast enhanced in portal venous phase CT scan (E) shows mass confined in peripheral area of right hepatic lobe with hepatic vein abutment.

Figure 2. Axial non-enhanced fat-suppressed T1-weighted (A) and axial non-enhanced short-tau inversion recovery T2-weighted (B) MR images show a lobulated mass at hepatic segment 7/8, which appears hypo signal intensity (SI) on T1-weighted and hyper SI on T2-weighted images. Axial dynamic Gadolinium-based enhanced fat-suppressed T1-weighted MR image in arterial phase (C), portal venous phase (D) and 5-minute delay phase (E) show peripheral enhancement on arterial phase with progressive incomplete central enhancement on portal venous and 5-minute delay phases. Coronal Gadolinium-based enhanced fat-suppressed T1-weighted MR image in arterial phase (F) reveals mass confined in peripheral zone of right hepatic lobe.

Figure 3. Moderate to well differentiate adenocarcinoma with glandular and tubular structures, mucin production.
Discussion

Mass-forming cholangiocarcinoma (cholangiocarcinoma) is a crucial matter to be discussed as the lesion of bile duct cancer (epithelial cells of the biliary tract) and it is the second most common cancer after primary liver cancer. It is not difficult to differentiate from hepatitis C virus (HCV) infection but the prognosis is not optimistic. In this case report, a patient of mass-forming cholangiocarcinoma which has been diagnosed with cirrhosis showed a well-to-moderately differentiated, adenocarcinoma tumor thrombus.

References