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Changes in Imaging Features of Immunoglobulin G4-related Sclerosing Cholecystitis

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A 76-year-old man presented with abnormal liver function during hormone treatment for prostate cancer. Diffuse swelling pancreas with a capsule-like rim and a serum Immunoglobulin (Ig) G4 level of 868 mg/dL indicated autoimmune pancreatitis. Meanwhile, diffuse wall thickening in the gallbladder was noted (Fig. 1a). He underwent only follow-up without further investigation or steroid treatment. Two years later, follow-up computed tomography showed the disappearance of diffuse gallbladder wall thickening and appearance of an enhanced mass in the gallbladder fundus (Fig. 1b). Positron-emission tomography revealed ^{18}F -fluorodeoxyglucose uptake in the mass (Fig. 1c). Ultrasonography described a heterogenous mass that had a partially unclear border with the adjacent hepatic parenchyma (Fig. 1d). The imaging findings of the pancreas and serum IgG4 level had not changed. Levels of tumor markers were unremarkable. These clinical data could not exclude gallbladder cancer although an IgG4-related gallbladder lesion was suspected. Extended cholecystectomy was therefore performed. Histological examination showed storiform fibrosis, obliterative phlebitis and abundant infiltration of IgG4-positive plasmacytes. The fibrosis with lymphocytic infiltration did not invade the hepatic parenchyma (Figs. 2a–f). Based on these findings, he was finally diagnosed with IgG4-related sclerosing cholecystitis. IgG4-related sclerosing cholecystitis develops as 2 types: diffuse-wall-thickening and mass formation [1]. However, these clinical course remains unclear. This case is the first to describe changes in imaging features of IgG4-related sclerosing cholecystitis.

References:

- 1 Ishigami K, Shitani M, Kimura Y, et al. Ectopic relapse of IgG4-related disease presenting as IgG4-related sclerosing cholecystitis: A case report and review of literature. *Medicine (Baltimore)* 2018; 97: e13868.

Figure 1

CT at the time of diagnosis of autoimmune pancreatitis showed diffuse wall thickening in the gallbladder (a). Follow-up CT showed the disappearance of diffuse gallbladder wall thickening and appearance of an enhanced mass in the gallbladder fundus (b). Positron emission tomography revealed ^{18}F -fluorodeoxyglucose uptake in the mass (c). Ultrasonography revealed a smooth-surfaced and heterogenous mass (d). The boundary between the mass and adjacent hepatic parenchyma was partially unclear (d, arrowhead). CT, computed tomography

Figure 2

Gross findings revealed a 2-cm mass localized in the gallbladder fundus (a). Macroscopic and microscopic findings showed that the serosa of the gallbladder was preserved (b, c). Histological examination demonstrated storiform fibrosis (d, hematoxylin and eosin stain), obliterateve phlebitis (e, Elastica van Gieson stain) and abundant infiltration of IgG4-positive plasmacytes (f, IgG4-immunostaining). IgG4, immunoglobulin G4

Informed consent:

Informed consent was obtained from the patient for the publication of his information and imaging.