Immunoglobulin G4-related cholecystitis mimicking gallbladder cancer diagnosed by EUS-guided biopsy

Kosuke Nagai[1], Masaki Kuwatani[1], Yunosuke Takishin[1], Ryutaro Furukawa[1], Hajime Hirata[1], Kazumichi Kawakubo[1], Tomoko Mitsuhashi[2], Naoya Sakamoto[1]

[1]Department of Gastroenterology and Hepatology, Hokkaido University Hospital, Sapporo, Japan; [2]Department of Surgical Pathology, Hokkaido University Hospital, Sapporo, Japan

A 70-year-old male with a history of hypertension and diabetes mellitus was referred to our hospital for workup of a gallbladder mass suspected to be gallbladder cancer on computed tomography images [Figure 1a], which also showed stricture of the cystic duct and common bile duct (CBD). He had neither symptoms nor jaundice. Blood tests on admission were normal except for high levels of γ-glutamyl transpeptidase (122 U/L) and carbohydrate antigen 19-9 (167.0 U/mL). EUS revealed a hypoechoic and heterogeneous mass at the gallbladder neck [Figure 1b] connecting to wall thickening of the cystic duct and upper CBD and the normal pancreas [Figure 2a-c]. ERCP showed an upper CBD stricture with axial deviation [Figure 1c], and ERCP-guided biopsy of the stricture revealed fibrosis and infiltration of mononuclear cells. Thus, we performed EUS-FNA for the mass of the gallbladder through the duodenal bulb with a 22-gauge Franseen needle, which surprisingly revealed abundant lymphoplasmacytic infiltration and storiform fibrosis with IgG4-positive plasma cells (>10 cells per high-power field) [Figure 3a-c]. The serum IgG4 level was then measured and found to be elevated at 282 mg/dL. Finally, we diagnosed it as IgG4-related sclerosing cholecystitis with cholangitis and administered steroids. After 1 month, we confirmed the mass

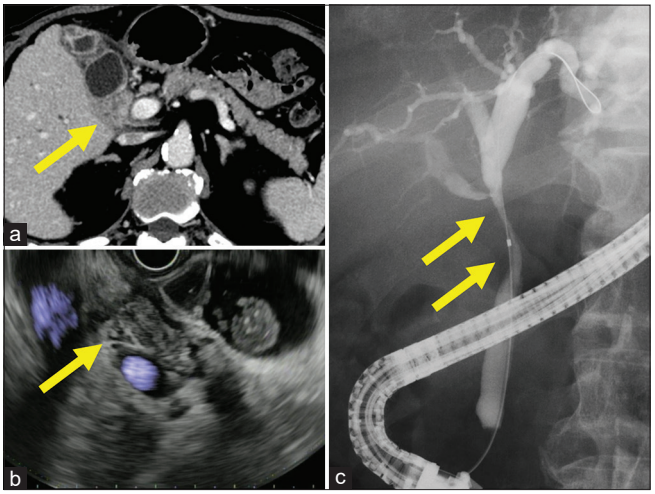

Figure 1. (a) Computed tomography showed a mass with slight contrast enhancement at the gallbladder neck adjacent to the common bile duct. (b) EUS showed a hypoechoic and heterogeneous mass at the gallbladder neck. (c) Endoscopic retrograde cholangiopancreatography showed an upper common bile duct stricture with the axis deviation

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Address for correspondence

Dr. Masaki Kuwatani, Department of Gastroenterology and Hepatology, Hokkaido University Hospital, North 14, West 5, Kita-ku, Sapporo 060-8648, Japan. E-mail: mkuwatan@med.hokudai.ac.jp

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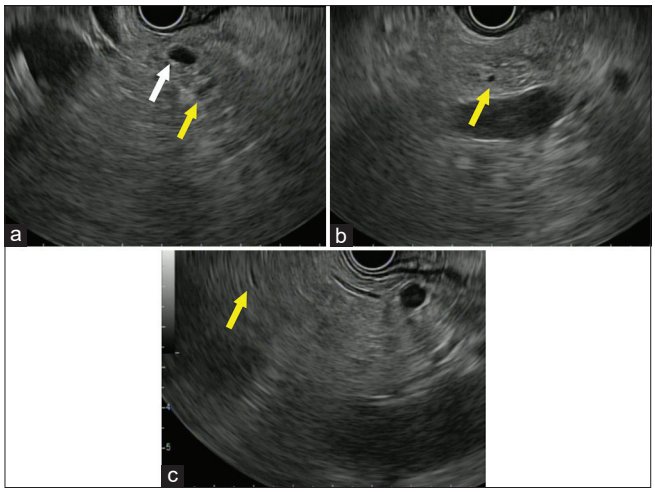

Figure 2. EUS showing the normal pancreatic parenchyma and main pancreatic duct. (a) The pancreatic head, (b) pancreatic body, and (c) pancreatic tail. (white arrow: the common bile duct; yellow arrow: the main pancreatic duct)

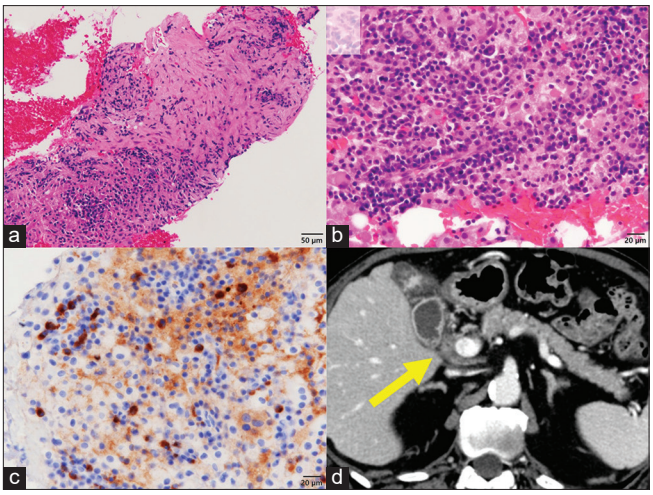

Figure 3. Microscopic findings of the EUS-FNA samples showed abundant lymphoplasmacytic infiltration and storiform fibrosis in the (a) low-power field, (b) high-power field (hematoxylin-eosin staining), and (c) abundant IgG4-positive plasma cells (>10 cells per high-power field). (d) Computed tomography showed shrinkage of the gallbladder mass after steroid therapy

shrinkage [Figure 3d] and normalization of the serum IgG4 level.

Gallbladder involvement has been reported in only about 5.5% of patients with IgG4-related disease,[1] and IgG4-rerlated cholecystitis without pancreatitis has been reported in only eleven cases. Therefore, a mass lesion in the gallbladder on imaging studies can lead many physicians to misdiagnose gallbladder cancer.

Meanwhile, EUS-FNA for bile duct lesions and gallbladder masses has a high diagnostic ability and safety despite concerns about complications such as bile leakage and tumor seeding.[2,3] Therefore, if it is difficult to obtain a pathological specimen of biliary lesions by endoscopic transpapillary biopsy for therapeutic strategies, EUS-FNA should be performed as aggressively as possible. The previous reports on IgG4-related cholecystitis showed that the pathological diagnosis could be performed by surgical resection or percutaneous biopsy of the gallbladder lesions; however, the present case was pathologically diagnosed by EUS-FNA for the first time.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his names and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Conflicts of interest

Masaki Kuwatani is an Editorial Board Member of the journal. The article was subject to the journal's standard procedures, with peer review handled independently of this Editor and his research groups.

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