Autoimmune pancreatitis complicated by gastric varices: A report of 3 cases

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INTRODUCTION

Autoimmune pancreatitis (AIP) is accepted worldwide as a distinctive type of pancreatitis, and the number of patients with AIP is increasing[1-3]. However, there are few reports of AIP complicated by gastric varices, and the effect of steroid therapy on the gastric varices is unknown. We present three cases of autoimmune pancreatitis complicated by gastric varices.

CASE REPORT

Case 1

A 57-year-old man was admitted to the hospital due to back pain and jaundice. He had a history of diabetes mellitus and no history of habitual alcohol consumption. Laboratory studies revealed liver dysfunction (total bilirubin 3.1 mg/dL, aspartate aminotransferase 275 IU/L, alanine aminotransferase 275 IU/L, and alkaline phosphatase 2822 IU/L), hyperglycemia (236 mg/dL), elevated hemoglobin A1c (7.9%), and elevated IgG4 (176.4 mg/dL). Tumor markers, a complete blood count, electrolyte plasma levels, coagulation tests, amylase levels, lipase levels, and kidney function were all within the nor-
nal limits. Computed tomography (CT) of the abdomen revealed a diffusely enlarged pancreas with a capsule-like rim, an obstructed splenic vein, and a dilated common bile duct (Figure 1A). Endoscopic retrograde cholangiopancreatography (ERCP) revealed irregular narrowing of the main pancreatic duct and stricture of the lower common bile duct. Esophagastroduodenoscopy (EGD) revealed gastric varices in the fundus of the stomach (Figure 1B).

According to the 2006 Clinical Diagnostic Criteria of The Japan Pancreas Society, the patient was diagnosed with AIP complicated by splenic vein obstruction and gastric varices. Endoscopic biliary drainage by stent placement was performed to alleviate the obstructive jaundice, followed by the oral administration of 30 mg/d prednisolone for 2 wk. The dose was tapered by 5 mg every 2 wk to a maintenance dose of 5 mg/d. Two weeks after the initial treatment, a CT scan showed that the enlarged pancreas had improved and that the splenic vein was reperfused (Figure 1C). Six mo after the initial therapy, EGD showed that the gastric varices had disappeared (Figure 1D). Twenty-one mo after admission to the hospital, the patient was followed in the clinic with a maintenance dose of 5 mg/d prednisolone.

Case 2
A 55-year-old man was admitted to the hospital following the incidental detection of gastric fundal varices on EGD during a complete physical examination (Figure 2A). He had no previous illnesses and no history of habitual alcohol consumption. The patient was asymptomatic, and nothing abnormal was detected on physical examination. A CT scan revealed a locally enlarged pancreatic tail with a capsule-like rim around the lesion, an obstructed splenic vein, and splenomegaly (Figure 2B). ERCP was performed, revealing irregular narrowing of the main pancreatic duct in the pancreatic tail (Figure 2C). Laboratory studies showed an elevated IgG4 (239.1 mg/dL). Tumor markers, a complete blood count, electrolyte plasma levels, coagulation tests, amylase levels, lipase levels, and kidney and liver functions were all within the normal limits.

According to the 2006 Clinical Diagnostic Criteria, the patient was diagnosed with AIP complicated by splenic vein obstruction, gastric varices, and splenomegaly. Oral administration of 30 mg/d prednisolone for 4 wk was used to induce remission, and the dose was tapered by 5 mg every 2 wk to a maintenance dose of 5 mg/d. Two weeks after the initial treatment, a CT scan showed that the enlarged pancreas tail had improved and that the capsule-like rim had disappeared (Figure 2D). However, the splenic vein was not reperfused. Ten mo after the initial therapy, EGD showed no improvement of the gastric varices. One year after hospital admission, the patient was followed in the clinic with a maintenance dose of 5 mg/d prednisolone.

Case 3
A 68-year-old man was admitted to the hospital due
An emergency EGD was performed, revealing gastric ulcer bleeding at the gastric notch and incidentally detected gastric varices in the fundus of the stomach (Figure 3A). The gastric ulcer was successfully treated with endoscopic coagulation and administration of a proton pump inhibitor. Additional investigations were performed to ascertain the cause of the gastric varices. The patient had a past history of diabetes mellitus and no history of habitual alcohol consumption. A CT scan revealed a slightly enlarged pancreas with a capsule-like rim around the lesion, a pancreatic stone in the pancreatic tail, an obstructed splenic vein, and splenomegaly (Figure 3B and C). Magnetic resonance cholangiopancreatography (MRCP) revealed irregular narrowing of the main pancreatic duct in the pancreatic head and body, slight dilation of the main pancreatic duct in the pancreatic tail, stricture of the hilar bile duct and lower bile duct, and dilatation of the right intra-hepatic bile duct (Figure 3D). ERCP showed the same findings as MRCP. Laboratory studies revealed elevated levels of IgG4 (186 mg/dL), hemoglobin A1c (8.0%), carcinoembryonic antigen (8.2 ng/mL), CA19-9 (38.7 U/mL), and alkaline phosphatase (345 IU/L). The complete blood count, electrolyte plasma levels, coagulation tests, amylase levels, lipase levels, and kidney function were all within the normal limits.

Although the slight dilation of the distal main pancreatic duct was atypical of AIP, the slightly enlarged pancreas, the irregular narrowing of the main pancreatic duct in the pancreatic head and body, and the elevated levels of IgG4 met the 2006 Clinical Diagnostic Criteria. The patient was diagnosed with AIP complicated by splenic vein obstruction, gastric varices, splenomegaly, and sclerosing cholangitis. Oral administration of 30 mg/d prednisolone for 4 wk was used to induce remission, and the dose was tapered by 5 mg every 2 wk to a maintenance dose of 5 mg/d. However, a CT scan showed no improvement of the pancreatic lesion, and EGD showed no improvement of the gastric varices. Because steroid therapy was not effective, maintenance therapy was discontinued 5 mo after the initial treatment. One year after hospital admission, the patient was followed in the clinic without treatment.

**DISCUSSION**

There are few reports of autoimmune pancreatitis complicated by gastric varices. The effects of steroid therapy on the varices is unknown. However, the reported 8% frequency of splenic vein obstruction in patients with chronic pancreatitis indicates that it is not a rare complication. Splenic vein obstruction causes a localized form of portal hypertension, known as splenial portal hypertension, which leads to the formation of gastric varices along the fundus and the greater curvature of the stomach due to increased blood flow through the short gastric veins or the gastroepiploic vein. From 1999 to 2011, our hospital treated 20 consecutive patients with AIP who fulfilled either the 2006 Clinical Diagnostic Criteria.
were not detected on CT scans in any of the three cases. Development of congestive splenomegaly may have been dependent on the length of time the patients had been affected with sinistral portal hypertension. These three cases indicate the need to reperfuse the obstructed splenic vein before the development of splenomegaly, otherwise the obstruction becomes irreversible. According to a nationwide survey by the Research Committee of Intractable Pancreatic Diseases conducted by the Ministry of Health, Labor and Welfare of Japan, the remission rate of steroid-treated AIP is 98%\(^{[10]}\). However, rare cases of steroid-refractory AIP can occur. Kamisawa et al\(^{[11]}\) reported the development of pancreatic atrophy in 5 out of 23 patients with AIP. Takayama et al\(^{[12]}\) reported that AIP has the potential to be a progressive disease with pancreatic stones. These reports suggest that recurrent cases of AIP can turn into chronic pancreatitis-like lesions during long-term follow-up and become refractory to steroid therapy. In case 3, the AIP was refractory to steroid therapy. Because the enlargement of the pancreas was not prominent and a pancreatic stone was detected, the lesion was likely the result of recurrent inflammation of AIP.

The role of a prophylactic splenectomy in asymptomatic patients with splenic vein obstruction and gastric varices remains controversial. Badley concluded that the benefit of preventing possible bleeding of the varices outweighs the risk of postsplenectomy sepsis\(^{[13]}\), although
Bernades et al\textsuperscript{[7]} reported that the risk of variceal bleeding is lower than previously reported. In cases 2 and 3, we did not perform a prophylactic splenectomy or partial splenic embolization because the patients opted for a watchful waiting approach.

The indications for steroid therapy in patients with AIP are symptoms such as obstructive jaundice, abdominal pain, back pain and the presence of symptomatic extrapancreatic lesions\textsuperscript{[1,14]}. The treatment of asymptomatic patients with AIP remains controversial. Based on the potential risk and benefits, these three cases suggest that patients with AIP and gastric varices or splenic vein obstruction without splenomegaly should be treated with steroids before pancreatic lesions or splenic vein obstructions become irreversible. Because this study only included three cases, it is necessary to collect data on more patients with AIP complicated by gastric varices to effectively evaluate this hypothesis.

In conclusion, we treated 3 cases of autoimmune pancreatitis complicated with gastric varices. Gastric varices or splenic vein obstruction without splenomegaly may be an indication for steroid therapy in patients with AIP.

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