CASE REPORT

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Severe Acute Necrotizing Pancreatitis After Endoscopic Biopsy of The Minor Duodenal Papilla

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ABSTRACT

Endoscopic biopsies are occasionally taken from the minor duodenal papilla when abnormal appearance is encountered during esophagogastroduodenoscopy. Minor complications such as bleeding could occur after biopsy, however acute pancreatitis is a very rare complication after biopsy of the minor papilla. We report a case of severe acute necrotizing pancreatitis following biopsy of the minor papilla.

Keywords: Minor duodenal papilla, necrotizing pancreatitis, endoscopic biopsy

Introduction

The minor duodenal papilla is the opening of the accessory pancreatic duct. It is situated in the duodenal second portion, typically about 2 cm ventroproximal to the papilla of Vater (POV).(1) During esophagogastroduodenoscopy (EGD) examination, abnormal appearances, such as bulging, polypoid, or mass-like lesions at a presumed location of the minor papilla are often encountered. Although neoplasms of the minor papilla are rare, there have been reports of neuroendocrine tumor, adenoma and adenocarcinoma of the minor papilla.(2) Biopsies are often taken from the minor papilla for a differential diagnosis. Mild complications such as bleeding occur frequently. However acute pancreatitis is a very rare complication following biopsy of the minor papilla. Herein we report a case of severe acute necrotizing pancreatitis following biopsy of the minor papilla.

Case Report

A 44-year-old male was referred to gastroenterology department and underwent EGD due to duodenal mass which was found at screening EGD from a primary clinic. At the EGD examination, about 2 cm sized subepithelial mass-like lesion with mild granularity was noted at the location of the minor papilla and biopsy was taken (Fig. 1). The patient came to emergency room due to severe epigastric pain which was developed four hours after the EGD. He did not complain of fever and chills. He had hypertension and diabetes mellitus as a past medical history. And he underwent laparoscopic cholecystectomy due to gallbladder empyema 1 year ago.

On physical examination, his abdomen was soft but epigastric tenderness was present. His vital sign was stable. The initial laboratory data results were as follows: white blood cell count 17,190/ mm^3, hemoglobin 16.3 g/dL, platelet count 341,000 /mm^3, amylase 1,433 U/L, lipase 1,995 U/L, C-reactive protein 0.1 mg/dL, blood urea nitrogen 11.0 mg/dL, creatinine 0.93 mg/dL , total bilirubin 0.66 mg/dL, direct bilirubin 0.27 mg/dL, alkaline phosphatase 44 U/L, gamma glutamyltransferase 35 U/L, aspartate aminotransferase 17 U/L, and alanine aminotransferase 24 U/L.

Abdominal computed tomography (CT) scan revealed an enhancing 1.4 cm sized nodular lesion in the duodenal bulb (Fig. 2A) and diffuse parenchymal swelling of pancreas with peripancreatic fluid collection and fat infiltrations (Fig. 2B). With a conservative care including intravenous fluid hydration, the patient's abdominal pain was improved. The biopsy result was chronic active duodenitis. He was discharged 14 days later.

Follow-up abdominal CT scan was taken one month after the discharge and it showed 9.4 by 4.6

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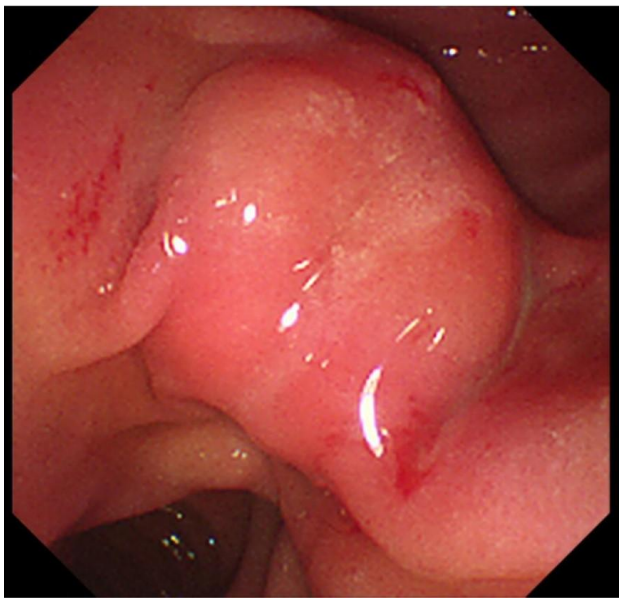

Fig. 1. About 2 cm subepithelial mass-like lesion with mild granularity was noted at the location of the minor duodenal papilla

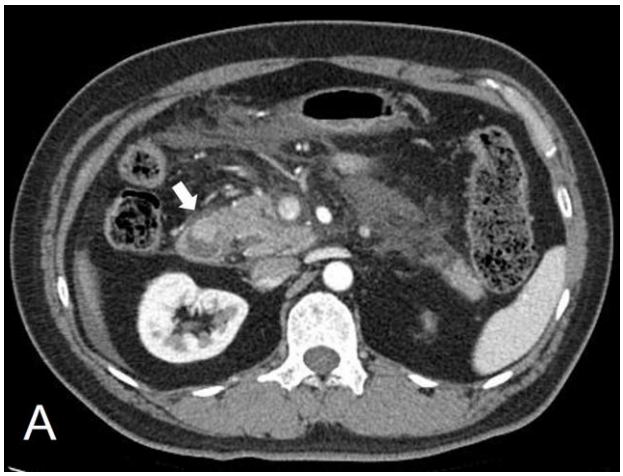

Fig. 2. Abdominal computed tomography (CT) scan showed an enhancing 1.4 cm sized nodular lesion (arrow) in the duodenal bulb (A) and diffuse parenchymal swelling of pancreas with peripancreatic fluid collection and fat infiltrations (B)

cm peripancreatic fluid collection with pancreatic parenchymal necrosis. He had not have any symptom, therefore we decided to follow him at outpatient department. Two months later, the patient visited our emergency room because of fever and vomiting. Abdominal CT scan showed increased peripancreatic fluid collection (12.9 by 7.6 cm) with parenchymal necrosis (Fig. 3). With a diagnosis of infected walled-off necrosis, endoscopic ultrasound (EUS)-guided cystogastrostomy with a 7 French, 15 cm double pigtail plastic stent was performed. The pancreatic pseudocyst was markedly decreased in size (7.0 by

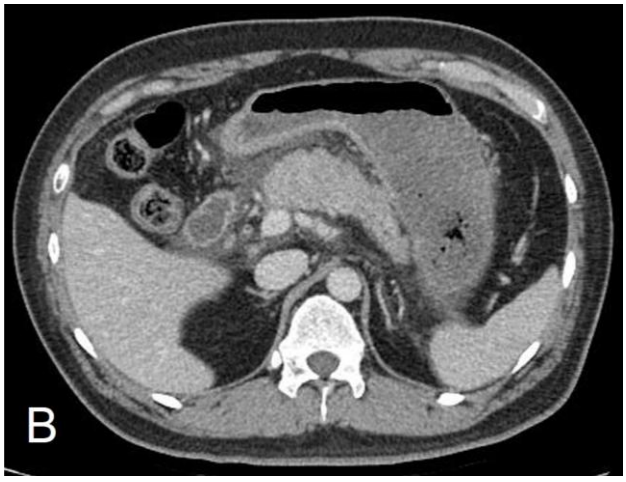

Fig. 3. Abdominal CT scan showed increased peripancreatic fluid collection (12.9 by 7.6 cm) with parenchymal necrosis

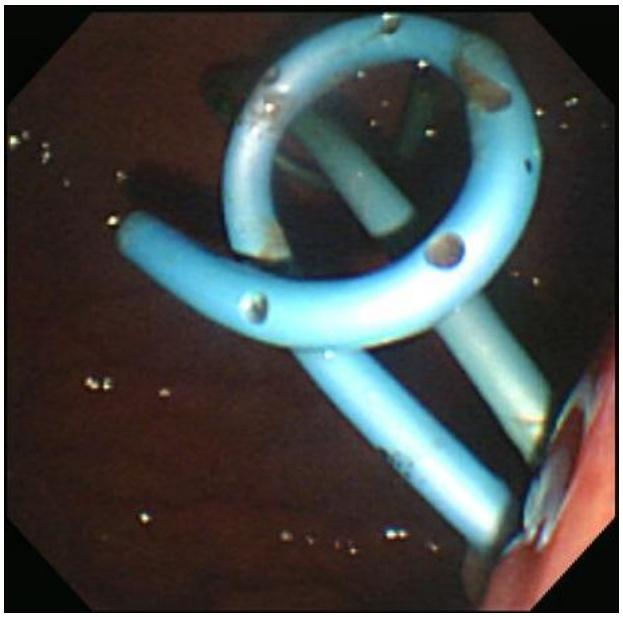

Fig. 4. Additional EUS-guided cystogastrostomy with a 7 Fr x 5 cm double pigtail plastic stent was performed

4.0 cm) at the one-week follow-up abdominal CT scan. While planning discharge, the patient developed severe epigastric pain again. Another abdominal CT scan was taken and it revealed increased pancreatic pseudocyst in size (10.9 by 6.5 cm). With a diagnosis of malfunction of the previously inserted cystogastrostomy stent, additional EUS-guided cystogastrostomy with a 7 French, 5 cm double pigtail plastic stent was performed (Fig. 4). As the patient remained stable, he was discharged 2 weeks later. After 2 months, the patient showed improved symptoms and abdominal CT findings, and all the cystogastrostomy stents were removed. The patient was followed for one year without any problems.

Discussion

Neoplasms of the minor papilla of duodenum are rare. However, all tumors may occur and there have been reports of neuroendocrine tumor, adenoma and adenocarcinoma of the minor papilla.(2) Tumors of the minor papilla usually comes up as subepithelial lesions, so the role of occasional endoscopic biopsy is limited. However, biopsies are often taken from the minor papilla, because there is no other reliable method for differential diagnosis.

There have been several case reports of acute pancreatitis following endoscopic biopsies from POV. However, acute pancreatitis following endoscopic biopsy of the minor papilla is extremely rare. As far as we know, there are only two case reports.(3, 4) In all the two cases, acute pancreatitis were developed after biopsies taken from the minor duodenal papilla and those two patients were revealed to have pancreas divisum. In the case we present, we could not verify the existence of pancreas divisum because magnetic resonance cholangiopancreatography (MRCP) was not available due to the previous history of panic attack when our patient underwent magnetic resonance imaging (MRI) of the spine.

The exact mechanism of the development of acute pancreatitis following endoscopic biopsy of the minor papilla is unclear. It has been postulated that mucosal edema and subsequent pancreatic duct obstruction due to biopsies in some reported cases of acute pancreatitis after biopsies from POV.(5, 6) Probably the same mechanism would attribute the development of acute pancreatitis after biopsies of the minor papilla.

However, the incidence rate would probably be much lower than the acute pancreatitis after biopsies from POV, because the estimated patency of the accessory pancreatic duct is about 40%,(7,8) and all the patients of the reported cases had pancreas divisum. Thus, it could be inferred that acute pancreatitis after biopsies of the minor papilla occurs in certain condition such as pancreas divisum. Although our patient could not undergo MRCP, it is presumed that he had pancreas divisum based on previous reported cases.

In conclusion, we report a case of severe acute necrotizing pancreatitis after biopsy of the minor duodenal papilla. Although this is a very rare complication accompanying endoscopic biopsy of the minor papilla, endoscopists should be aware of this complication because congenital anomaly of pancreatic duct is not predictable in asymptomatic patients.

References

1. Sultana m, c.k l. Distance between major and minor duodenal papilla from pylorus – a cadaveric study. International Journal of Anatomy and Research. 2018;6:5239-45.
2. Noda Y, Watanabe H, Iwafuchi M, et al. Carcinoids and endocrine cell micronests of the minor and major duodenal papillae. Their incidence and characteristics. Cancer. 1992;70:1825-33.
3. Gincul R, Ciocirlan M, Dumortier J, et al. Severe acute pancreatitis following endoscopic biopsy of the minor duodenal papilla. Endoscopy. 2009;41:E195-6.
4. Jeong WJ. Acute pancreatitis after endoscopic biopsy of the minor duodenal papilla in an individual with pancreas divisum. Endoscopy. 2016;48:E238-9.
5. Morales TG, Hixson LJ. Acute pancreatitis following endoscopic biopsy of the ampulla in a patient with Gardner's syndrome. Gastrointestinal endoscopy. 1994;40:367-9.
6. Ishida Y, Okabe Y, Tokuyasu H, et al. A case of acute pancreatitis following endoscopic biopsy of the ampulla of Vater. The Kurume medical journal. 2013;60:67-70.
7. Kamisawa T, Yuyang T, Egawa N, Ishiwata J, Okamoto A. Patency of the accessory pancreatic duct in relation to its course and shape: a dye-injection endoscopic retrograde pancreatography study. The American journal of gastroenterology. 1998;93:2135-40.
8. Tabata T, Kamisawa T, Takuma K, et al. Does a patent accessory pancreatic duct prevent acute pancreatitis? Digestive endoscopy : official journal of the Japan Gastroenterological Endoscopy Society. 2010;22:297-301.