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ABOUT COVER

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CASE REPORT

Acute pancreatitis as a rare complication of gastrointestinal endoscopy: A case report

Mu-Gen Dai, Li-Fen Li, Hai-Yan Cheng, Jian-Bo Wang, Bin Ye, Fei-Yun He

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Abstract

BACKGROUND

Acute pancreatitis is an uncommon complication of gastrointestinal endoscopy, especially if the patient has none of the common risk factors associated with pancreatitis; such as alcoholism, gallstones, hypertriglyceridemia, hypercalcemia or the use of certain drugs.

CASE SUMMARY

A 56-year-old female patient developed abdominal pain immediately after the completion of an upper gastrointestinal endoscopy. The pain was predominantly in the upper and middle abdomen and was persistent and severe. The patient was diagnosed with acute pancreatitis. Treatment included complete fasting, octreotide injection prepared in a prefilled syringe to inhibit pancreatic enzymes secretion, ulinastatin injection to inhibit pancreatic enzymes activity, esomeprazole for gastric acid suppression, fluid replacement and nutritional support. Over the next 3 d, the patient's symptoms improved. The patient remained hemodynamically stable throughout hospitalization and was discharged home in a clinically stable state.

CONCLUSION

Pancreatitis should be considered in the differential diagnosis of abdominal pain after upper and lower gastrointestinal endoscopy.

Key Words: Acute pancreatitis; Gastrointestinal endoscopy; Complication; Bile reflux; Case report

Core Tip: Acute pancreatitis is an uncommon complication of gastrointestinal endoscopy, especially when the patient has none of the common risk factors associated with pancreatitis; such as alcoholism, gallstones, hypertriglyceridemia, hypercalcemia or the use of certain drugs. We report an unusual case of acute pancreatitis related to gastrointestinal endoscopy. It is important to recognize this complication in order that appropriate treatment can be undertaken quickly for an optimal outcome.

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INTRODUCTION

Endoscopy is a widely used diagnostic and therapeutic procedure and is usually well tolerated by patients. Potential complications include perforation, bleeding, postoperative polyps and side effects associated with sedation and analgesia[1-3]. Rare complications have also been reported in the literature including spleen trauma, infection, diverticulitis and appendicitis[4]. Acute pancreatitis is a well-documented complication of endoscopic retrograde cholangiopancreatography[5], but not as a complication of upper digestive endoscopy[6]. To our knowledge, only a few cases of acute pancreatitis as a complication of digestive endoscopy have been reported in the English literature. These cases were due to colonoscopy. Here, we report a case of acute pancreatitis as a rare complication after gastrointestinal endoscopy.

CASE PRESENTATION

Chief complaints

A 56-year-old woman underwent non-sedation gastrointestinal endoscopy for early cancer screening. It was the first gastrointestinal endoscopy for the patient. She had a sharp abdominal pain approximately 2 h after completion of the procedure once she had arrived home.

History of present illness

She presented with severe nausea and vomiting 2 h after the procedure. The patient did not have obvious abdominal pain immediately after the procedure. The pain was predominantly in the upper and middle abdomen, was persistent, severe and with no radiation. Pain was accompanied by nausea and non-projectile vomiting of stomach contents. Flatulence was reduced. The patient had a mild fever without chills, diarrhea, chest tightness, chest pain or any other discomfort.

History of past illness

Her past medical history included hepatitis B. She had no history of alcoholism, gallstones or pancreatitis.

Personal and family history

Her birth history and feeding history were uneventful. There was no history of similar illness in the family.

Physical examination

On initial evaluation, vital signs revealed a temperature of 37.3°C, pulse rate of 77 bpm, blood pressure of 147/77 mmHg; and respiration rate of 15breaths/min. The patient was conscious and oriented. No yellowing of the skin or eyes was observed. Both lungs were clear, no dry or moist crackles (rales) were heard. The patient had tenderness in the upper and middle abdomen, no rebound pain or muscle tension was noted. Murphy's sign, McBurney's sign, and shifting dullness were all negative, and bowel sounds were heard at a rate of 3/min. No edema in the lower extremities was observed. No pathological signs were found.

Laboratory examinations

Laboratory examination results were as follows: CRP 61.6 mg/L; white blood cells 15.5 x 10^9 cells/L; amylase level 1022 IU/L (normal 23-184 IU/L); lipase level 4264 U/dL (normal 1-35 U/dL); arterial blood gas findings pH 7.36, HCO_3 22 mmol/L; hepatobiliary enzyme and blood lipids were normal; serum calcium 2.0 mmol/L; hepatitis B (HB) surface antigen positive, HBeAg positive, HB core antibody positive; erythrocyte sedimentation rate 95 mm/h.

Imaging examinations

The patient's upper gastrointestinal endoscopy was normal. A contrast-enhanced abdominal computed tomography scan after admission suggested acute pancreatitis with peripancreatic fluid collection (Figure 1). Two incidental renal cysts and uterine fibroids were also detected. Magnetic resonance cholangiopancreatography revealed no structural changes and no gallstones in the pancreaticobiliary duct system (Figure 2).

FINAL DIAGNOSIS

Acute pancreatitis.

TREATMENT

Treatment included complete fasting, octreotide injection prepared in a prefilled syringe to inhibit pancreatic enzymes secretion, ulinastatin injection to inhibit pancreatic enzymes activity, esomeprazole for gastric acid suppression, fluid replacement and nutritional support.

OUTCOME AND FOLLOW-UP

Over the next 3 d, the patient's symptoms improved, and serum amylase levels decreased to 104 IU/L within the normal range. The patient remained hemodynamically stable throughout hospitalization and was discharged home in a clinically stable state.

DISCUSSION

Although upper gastrointestinal endoscopy has not yet been demonstrated to be associated with an increased risk of pancreatitis and the relationship between endoscopy and pancreatitis may have been coincidental, both occurred within a short time and may explain the causality. In addition, the patient had no risk factors related to pancreatitis, such as alcoholism, trauma (including iatrogenic trauma), drugs, or infections[7]. Moreover, the patient had previously been tested for autoimmune pancreatitis, but the results were negative and lipid levels were normal. Therefore, we consider that gastrointestinal endoscopy may have played a role in the development of acute pancreatitis. In the literature, only one case of pancreatitis secondary to upper gastrointestinal endoscopy was reported in 1982[8]. This is the first case of pancreatitis secondary to gastrointestinal endoscopy reported in China.

Endoscopy is an essential procedure for gastroenterologists. The number and technical difficulties of endoscopies have increased over the past few decades and quality and safety remain important. The complication of pancreatitis caused by upper and lower gastrointestinal endoscopy is uncommon. Four cases of acute pancreatitis following upper and lower gastrointestinal endoscopy were considered to be caused by mechanical trauma due to manipulation of the colonoscope[6,9-11]. The potential mechanisms involved in the pathogenesis of pancreatitis include the following three factors: bile reflux due to high pressure[12]; mechanical trauma during the procedure[4,11,13]; and asymptomatic hyperamylasemia[14-17].

Since the development of acute necrotizing pancreatitis caused by upper gastrointestinal endoscopy has no relationship with previous pancreatic injury, the most probable etiology in this patient was severe vomiting and excessive pressure in the abdominal cavity, causing bile reflux into the pancreatic ducts, consequently activating trypsinogen to trypsin, which led to self-digestion of the pancreas. Bile reflux due to high pressure is considered an important cause of pancreatitis in clinical practice. In a previous study, hyperamylasemia was reported in 12% of patients undergoing endoscopy, but it was thought to be secondary to increased secretion of the salivary amylase isoenzyme[18]. Apart from the causes described above, we have been unable to find any other associations.

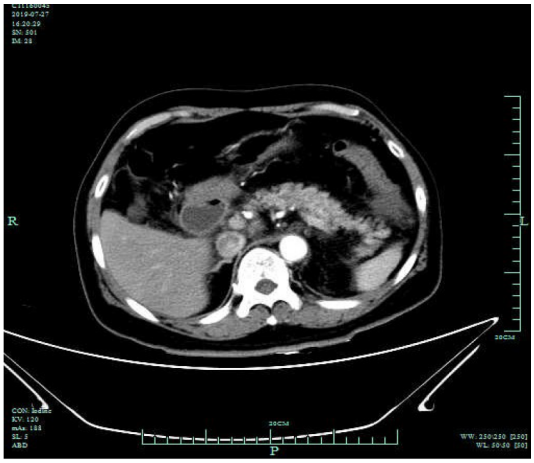

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Figure 1 Computed tomography of the abdomen showing pancreatic inflammation without significant dilatation of the pancreatic ducts.

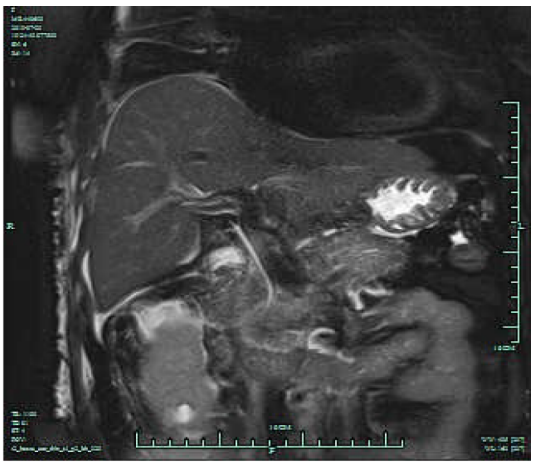

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Figure 2 Magnetic resonance cholangiopancreatography revealed no structural changes and no gallstones in the pancreaticobiliary duct system.

CONCLUSION

Whether it was a result of direct local trauma or an undetermined release of inflammatory mediators, clinically symptomatic acute pancreatitis is unusual among the complications of conventional endoscopic procedures. The diagnosis of acute pancreatitis is complex. It may be suspected clinically, but biochemical, radiological, and sometimes histological evidence is needed to confirm the diagnosis. Pancreatitis should be considered in the differential diagnosis of abdominal pain after upper and lower gastrointestinal endoscopy, when the most common explanations for such pain are excluded. Therefore, it is important to recognize this emergency in order that appropriate treatment can be undertaken for an optimal outcome.

FOOTNOTES

Author contributions: Dai MG and Li LF contributed equally to this work; Dai MG, Li LF, Cheng HY, Wang JB, Ye B, and He FY designed the research study; Dai MG, Li LF, Cheng HY, Wang JB, Ye B, and He FY performed the research; Dai MG, Li LF, Cheng HY, Wang JB, Ye B, and He FY analyzed the data and wrote the manuscript; All authors have read and approved the final manuscript.

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