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RESEARCH ARTICLE

UNCOMPLICATED SPONTANEOUS RUPTURE OF PANCREATIC PSEUDOCYST INTO DUODENUM: A CASE REPORT

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Abstract

Pancreatic pseudocysts arecomplications of acute and chronic pancreatitis. While most pancreatic pseudocysts are asymptomatic and resolve spontaneously. Rarely, it could drain into the adjacent structure being a vessel, gastrointestinal structure, or open abdominal cavity. Rupture pseudocyst may lead to severe hemorrhage or infection. However, few cases of uncomplicated rupture of pseudocysts were reported in the literature. This case is a rare pancreatic pseudocyst ruptured into the duodenum through a fistula and resolved spontaneously without complications.

Introduction:-

Pancreatic pseudocyst is a circumscribed collection of fluid rich in pancreatic enzymes, blood, and non-necrotic tissue, typically located in the lesser sac of the abdomen. Usually, Pancreatic pseudocysts are complications of acute and chronic pancreatitis[1]. They account for approximately 75% of all pancreatic masses[2].Diagnosis is commonly accomplished by ultrasound, computed tomography, endoscopic ultrasound, or endoscopic retrogradecholangiopancreatography [1-3].

While most pseudocysts are asymptomatic andresolve spontaneously, persistent or larger pseudocysts could lead to significant symptoms and complications. Pancreatic pseudocysts Complications including infection, hemorrhage, and obstruction are the main indications forendoscopic drainage procedures or surgery [3, 4]. Additionally, on rare occasions, pancreatic pseudocysts may drain into the adjacent hollow viscera, free peritoneal cavity, or vascular systemwith a resultant life-threatening hemorrhage of 3-5% [5-8].

Many cases of spontaneous rupture of pancreatic pseudocyst need emergency surgical intervention have been reported in the literature. Nevertheless, there are very few reports of uncomplicated rupture of pseudocysts in the literature [8-11]. Herein we present a rare case of pancreatic pseudocyst rupture into the duodenum through a fistula, which resolved spontaneously without complications.

Case Report

A 58-years old nonalcoholic diabetic male was admitted with upper abdominal pain, vomiting, and postprandial fullness. On physical examination, the abdominal mass filledthe upper part of the abdomen. The patient had been treated conservatively as a case of acute pancreatitis in other facilityforeight weeks.

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On admission, laboratory studies were normal except for hyperglycemia, elevated serum Amylase and mildly raised lipase. Ultrasonography showed an intraabdominal cystic mass near the left lobe of the liver. This was confirmed by abdominal CT with the same findings of a large pseudocyst containing gas and fluid material measuring 193 x110mm in the lesser sac (Figure 1a &1b).

On the second day After admission, Endoscopic UltrasoundEUS was planned for Cystogastrostomy using Lumen-apposing metal stents (LAMS) but improvement of the symptomswas noticed. The endoscopic view of EUS showed the stomach full of a cream-like viscous material (Figure2).The stomach and duodenum were examined thoroughly after complete suction of fluid. A tiny opening in the posterior wall of the 1st part of the duodenum gushing the fluid was discovered (Figure 3).Continuous suction was done from this fistulous opening till it stopped oozing fluid. A sample from the fluid was sent for cytology and Amylase level to confirm the diagnosis and nature of the fluid. The Amylase level was 5000 U/L which supports the diagnosis.

A repeated abdominal CT scan after 48 hourshowed a reduction of the cyst dimension to 73 x 42mm (Figure 4).The patient didn't require any intervention and the symptoms completely improved. The patient's condition remained stable, and he recovered without any complications and he was discharged.

After four weeks, the patient remained completely asymptomatic. The pseudocyst total resolution was confirmed by the normal follow-up abdominal CT.

Discussion:-

Pseudocyst formation is one of the most common complications of acute pancreatitis. It usually develops after 1 to 4 weeks from the onset of pancreatitis [5]. Pancreatic pseudocysts are localized fluid collections that are rich in amylase and other pancreatic enzymes. The enzymatic and inflammatory action of this material evokes reactive fibrosis in theadjacent tissue. This results in the formation offibrous wallswhich enclose the fluid collection, without an epithelial cover [4, 12]. Although they can be asymptomatic, pseudocysts usually present with abdominalpain, mass, postprandial fullness, nausea, and vomiting [4]. A variety of diagnostic tools including abdominal CT, ultrasonography, endoscopic ultrasound, biochemical analysis, cyst aspiration, andcytology are used for the diagnosis of pancreatic pseudocysts. However, there is a consensus that abdominal CT is mandatory for planning therapy and follow-up of the pancreatic pseudocyst [1]. The identificationof a thick-walled, rounded, fluid-filled mass adjacent to the pancreas on an abdominal scan in the patient with a history of acute or chronic pancreatitis is virtually pathognomonic for pancreatic pseudocyst [4]. The patientpresented herehad ahistory of acute pancreatitis three months ago. On admission, the patient was suffering from postprandial fullness and epigastric mass. Pseudocyst diagnosis was confirmed withabdominal CT and ultrasonography.

The natural course of pseudocyst is not completely understood. Pseudocysts may resolve spontaneously when the inflammatory process regresses. Notwithstanding that, it can remain for more than six months and require drainage procedures (percutaneous, endoscopic) or surgery [5, 12]. Mehta et al. [9, 13] found that pseudocysts less than 7.5 cm in diameter with a volume of less than 250 mL and with the absence of internal debris were associated with spontaneous resolution over an average duration of five months whereas cysts larger than 7.5 cm in size or >250 mL in volume mostly requires surgical or endoscopic intervention.

Most pseudocysts resolve spontaneously. However, Complications including infection, hemorrhage, and obstruction can appear with persistent or larger pseudocysts. When complicated, pancreatic pseudocyst may require endoscopic drainage procedures or surgery [3, 4]. In particular, the incidence of bleeding pseudocyst in patients with chronic pancreatitis has been reported to be 6-10% and the mortality rate ranges from 13% in treated patients to 90% in those who are untreated [10, 14]. The development of any bleeding complicationunquestionably demands some sort of radiological or surgical management [10, 14].

Sometimes, the pseudocysts can drain into the gastrointestinal tract [stomach, duodenum, colon], biliary tract, adjacent structures, the portal venous system, free abdominal cavity, renal collecting system, or bronchial tree [9, 15].Spontaneous rupture of the pancreatic pseudocyst is a rare incident reported in about 5% of patients only [6, 12]. Pseudocyst rupture results from tryptic digestion of the wall. Pressure necrosis produced by the expanding cyst is an additional pathophysiologic factor.

The rupture of the pseudocyst into the abdominal cavity is of extreme severity. It may result in peritonitis or hemorrhagic shock. Likewise, rupture of a pseudocyst into the gastrointestinal tractis associatedwithgastrointestinal hemorrhage or severe infection, especially after Colon drainage [12]. Spontaneous rupture of pseudocyst into the colon increases the risk of infection, rarely closes spontaneously, and usually necessitates emergency surgery [5, 16]. Nevertheless, rare cases of temporary or even permanent remission after gastrointestinal drainage have been reported [12].

When erosion of a pseudocyst occurs near the gastrointestinal tract and a fistula is formed, the patient's symptoms can vary, from no change to aggravation leading to death [5] As high-density protein from the pseudocyst moves to the gastrointestinal tract through a fistula, patients manifest sudden clinical improvement with resolution of the pseudocyst after temporary symptoms of diarrhea, vomiting non-infected or infected cyst contents or blood, and hematochezia [5, 17, 18].

In this case, ten days after admission, the patient complained of colicky abdominal pain and severe diarrhea.Consequently, theepigastric mass disappeared, Follow up abdominal CT showed resolution of the pseudocyst and esophagogastroduodenoscopy revealed a small hole in the duodenum, through which a cream-like viscous material oozed into the lumen.

The most frequent locations of fistula formation arethe transverse colon and thesplenic flexure ofthe colon, followed by the duodenum [5, 16].While the small intestine, stomach, and esophagus are uncommon locations [5, 6, 17]. If the pseudocyst resolves after fistula formation, surgery will not be indicated, and conservative management will often result in complete resolution [19]. The patient presented here was monitored with conservative procedures and did not require endoscopic treatment. He was discharged home and followed up at regular intervals. Six monthslater, the patient remains asymptomatic, and the control CT was completely normal.

In conclusion, pancreatic pseudocysts are serious problems. They are the most common complication of pancreatitis.Although spontaneous resolutionwithout complication is reported, meticulous observationand timely intervention are of paramount importance.

Figures captions:
Figure 1a & b: Abdominal CT showing large pancreatic pseudocyst (193 x 110 mm) attached to pancreas and compressing the stomach containing gas and fluid.
Figure 2: Endoscopic view of EUS showed the stomach full of a cream-like viscous material
Figure 3: Endoscopic view of EUS showed a tiny opening in the posterior wall of the 1st part of the duodenum.
Figure 4: Follow up abdominal CT showed a reduction of the cyst dimension to 73 x 42 mm,

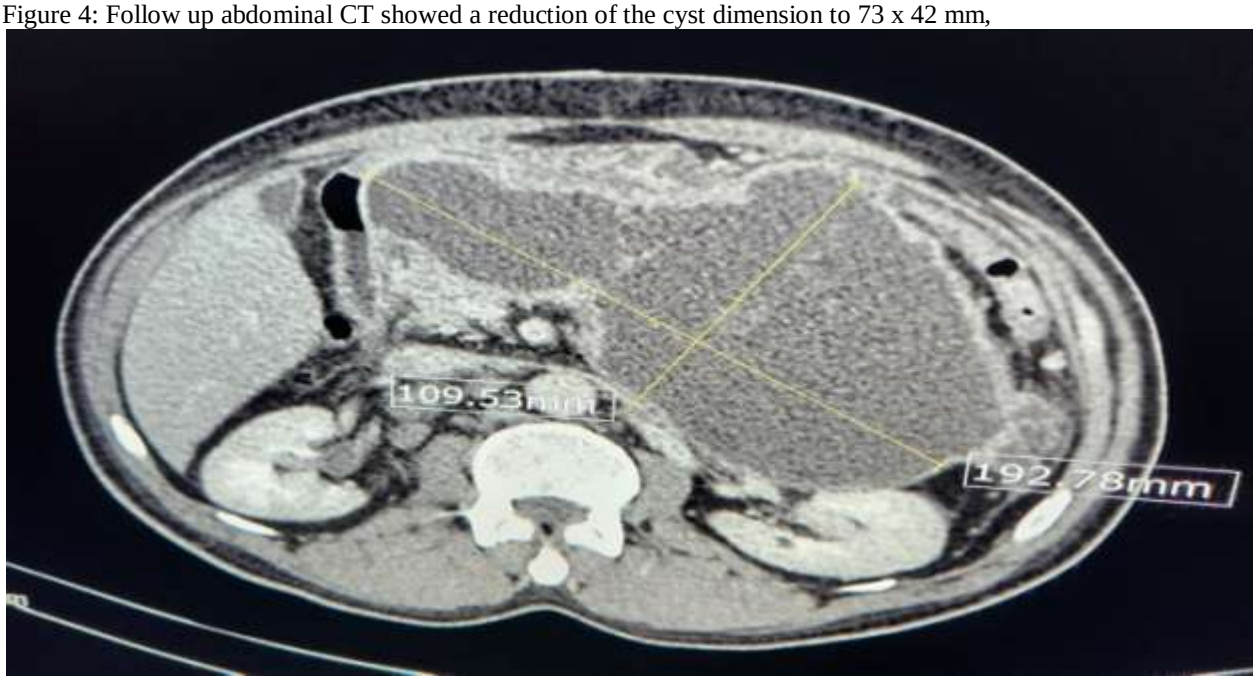

Figure 1:- A and 1B

Figure 2:-

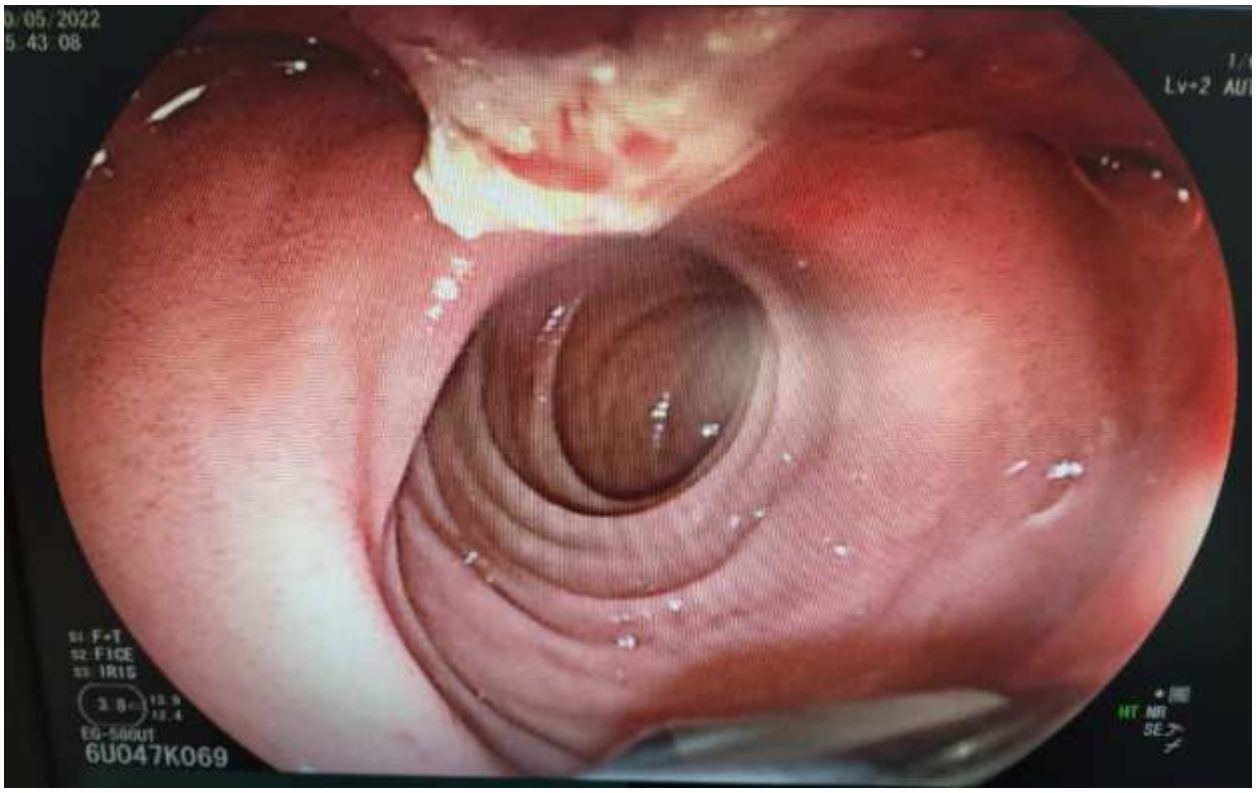

Figure 3:-

Figure 4:-

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