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Case Report

Moderately severe acute pancreatitis: An unusual manifestation of Hepatitis A

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Moderately severe acute pancreatitis is a severe form of pancreatitis and is associated with substantial morbidity and mortality. In this case report, a young man had acute viral hepatitis A (HAV) and moderately severe acute pancreatitis together. He was admitted to our hospital with jaundice and abdominal pain. Hepatic and pancreatic enzymes were elevated. Spiral computed imaging revealed imaging features of an acute stage of pancreatitiswith peripancreatic fluid collections. The finding of IgM anti HAV antibodies implicates hepatitis A virus as the cause.He was closely monitored and recovered uneventfully with conservative treatment.In the current literature HAV infections have rarely been reported as a cause of acute pancreatitisand this report serves to alert physicians to the possible developmentof severe pancreatitis during hepatitis A.

Key words: Hepatitis A, moderately severe acute pancreatitis, morbidity, mortality, conservative treatment.

INTRODUCTION

Acute pancreatitis (AP) is a life threatening condition withsignificant morbidity and mortality. The treatment dependson the accurate assessment of severity. Several viral infections have been implicated as an etiological factor ofAP. Lisney (1944), was the first to state that pancreatitis could be a complication of infectious hepatitis. Although different kinds of viruses such as A, B, C,and E have been reported as causes of AP, they are still uncommon conditions (Cadranel et al., 1987; Lopez Morante et al., 1986; Maity and Ray, 2002; Mishra et al., 1999).

AP induced by HAV is usually mild or moderate in clinical severity and its response to conservative therapy is always satisfactory. Furthermore, problemsrelated to acute pancreatitis, such as pseudocyst, abscesses, chronic pancreatitis and recurrence of pancreatitis, have never been reported.

We present here a patient with moderately severe acute pancreatitis withperipancreatic fluid collections,associated with acute hepatitis A virus (HAV), who made a satisfactory recovery.

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CASE REPORT

A 20-yr-old male was admitted to a local hospital with nausea, vomiting, abdominal pain, and jaundice.The patient was a healthy and active man who had no past history of hepatitis, previous blood transfusion, alcohol consumptionor intravenous drug use. He did not use any natural health products, nor did he use any oral, nasal or intravenous medications.There was no history of recent abdominal trauma, or exanthematous rash .His sibling had developed jaundice at the same time and recovereduneventfully within 3 weeks.

He had gone to another hospital with nausea and fatigue 6daysprior to being admitted to our hospital. Physical examination was unremarkable except for jaundice.

Initial laboratory values included a white blood cell count of 3.8 x 10^3 */mm,* hemoglobin 17 g/dl, serum aspartate aminotransferase (AST) 2410IU/L, alanine aminotransferase (ALT) 3146 IU/L, total bilirubin 67 mg/L, direct bilirubin 51 mg/L, alkaline phosphatase 161IU/L, and *y*-glutamyltransferase 172IU/L.Abdominal ultrasound showed normal liver gallbladder and pancreas.The patient was sent home to rest without any medication.

4 days later, a sudden onset of abdominal pain and vomiting was observed. He was then referred to our hospitalfor further investigations.On examination thepatient'svital

signs were stable he was afebrile, conscious and deeply jaundiced. His body mass index was calculated to be 20.1kg/m^2. Further physical examination was unremarkable except the abdomen was distended andexcruciatingly tender,the liver was enlarged 1 cm below the right margin.

The results of blood work, serology and immunology tests supported a diagnosis of pancreatitis with a serum amylase of 817 U/L (normal< 70 U/L), and a serum lipase of 347 U/dl (normal, < 10 U/dl).Further laboratory tests showed the presence of IgM antibody to hepatitis Avirus; testing for hepatitis B surface antigen, hepatitis B surface antibody, and hepatitis B core antibody were negative.

White bloodcount 12.6 x 10^3 /mm^3 (80% polymorphs), haemoglobin16 g/dl, erythrocyte sedimentation rate 20 mm/h,bilirubin 50.47 mg/l (conjugated29 mg/l), AST 138 IU/L, ALT550 IU/L (normal 20-40 IU/L), alkaline phosphatase 176IU/L (normal 38-85 IU/L).

The following laboratory tests were within normal limits: creatinine serum albumin, globulin, cholesterol, triglyceride, sodium, calcium, and prothrombin time and the international normalized ratio of prothrombin time. Blood and urine cultures showed no growth.

Upright abdominal X-ray showed distended small bowel loops with no fluid levels.

Abdominal ultrasound showed a normal liver, and ruled out other causes of pancreatitis such as gallstones, pancreatic neoplasms and rare congenital anomalies such as pancreatic divisum. It demonstrated a hypoechoic diffuse enlargement of pancreas (37mm,33mm,33mm).

CT scan showed diffuse enlargement of the pancreas (figure1), with an acute peripancreatic fluid collectionsin the omental bursa, pararenal , perisplenic and in the peritoneal cavity (ascites)(figure 2).

The patient was closely monitored and treated with intravenous fluids and electrolytes replacement. His abdominal pain gradually dissipated, and he slowly resumed eating on the 5th day of hospitalization. He was discharged after 7 days.

On discharge, AST was 49 IU/L, ALT 143 IU/L, bilirubin and amylase returned to normal values. Ten days after discharge the AST and ALT values were normal and a new ultrasonographic examination showed a normal pancreatic region and no ascitic fluid.

DISCUSSION

AP was recognized as a complication of acute viral hepatitis almost half a century ago (Lisney, 1944). Most cases of acute pancreatitis due to hepatitis viruses had been reported in association with acute liver failure (ALF)(Ede et al., 1988; Ham and Fitzpatrick, 1973; Parbhoo et al., 1973).There are only a few case reports of symptomatic pancreatitis occurring in the setting of acute viral hepatitis(Amarapurkar et al., 1996; Cadranel et al., 1987; Lopez Morante et al., 1986). In our patient, the etiology of pancreatitis was considered to be due to a hepatitis virus Aas there was no evidence of gallstones, sludge, alcohol, drugs, trauma or metabolic causes , and the strongly reactive anti HAV-IgM.

The mechanism of pancreatitis in patients with nonfulminant acute viral hepatitis A is unknown, and it may be multifactorial.Three theories have been postulated Davis and Keeffe (1992),oedema of the ampulla of Vater and obstruction to out flow of pancreatic fluid(Geokas et al., 1972; Tsui et al., 1972),direct inflammation and destruction of pancreatic acinar cell by the virus(Hoefs et al., 1980; Popper and Keppler, 1986; Shimoda et al., 1981).Another potential mechanism is the release and circulation of lysosomal enzymes from the inflamed liver with the activation of trypsinogen to trypsin(Greenbaum and Hirshkowitz, 1961). Trypsin will activate complement, coagulation or fibrinolysis, the vascular endothelium and the interstitium are affected, which causes a microcirculatory damage that increases the vascular permeability, favoring the liberation of free radicals, proinflammatory cytokines or lipolytic and proteolytic enzymes, that can induce thrombosis and tissular hemorrhage (Chan and Leung, 2007; Kingsnorth, 1997).

The clinical presentation in pancreatitis may vary;the predominant symptom is epigastric abdominal pain, which may radiate to the back, chest, or lower abdomen. Nausea and vomiting may occur in up to 90% of the cases. Abdominal signs of tenderness, rigidity, guarding, distension, respiratory signs of pleural effusion, basal collapse, wheezing, and basal crepitations are found in 10- 20% of the cases(Baker, 2004). Cullen's sign or Grey-Turner's sign which are respectively a sign of pancreatic necrosis with retroperitoneal or intraabdominal bleeding and a retroperitoneal hemorrhage (Baker, 2004).

Pancreatitis could be seen in all stages of HAV, even after resolution of hepatitis. Most of the patients reported had presented with symptomatic pancreatitis in the early phase of thehepatitic illness(Batra et al., 2003; Davis and Keeffe, 1992; Lopez Morante et al., 1986). In our case, nausea,vomiting, abdominal pain and jaundice were observed simultaneously.

The diagnosis of APinvolves the conglomeration of symptomsand focused laboratory Sarr (2013),but not every patient requires pancreatic imaging to make the diagnosis, provided the clinical picture is that of acute pancreatitis(Sarr, 2013).

Serum amylase alone cannot be usedreliably for the diagnosis of AP because of limitations in sensitivity and serum lipase is preferred(Tenner et al., 2013) .The C reactive protein (CRP) values higher than 150 mg/L(Cruz-Santamaria et al., 2012), hematocrit of 44%

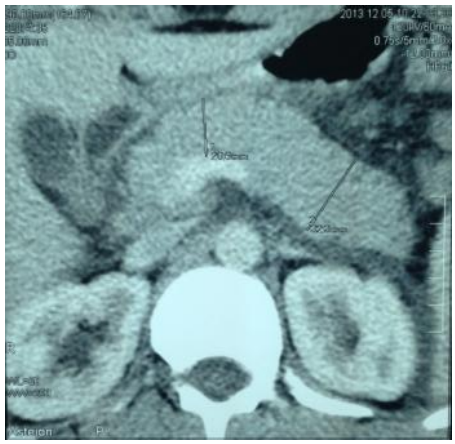

Figure 1. Enlargement Pancreas (*arrow*) enhanced uniformly after contrastadministration, thus showing no evidence ofnecrosis.

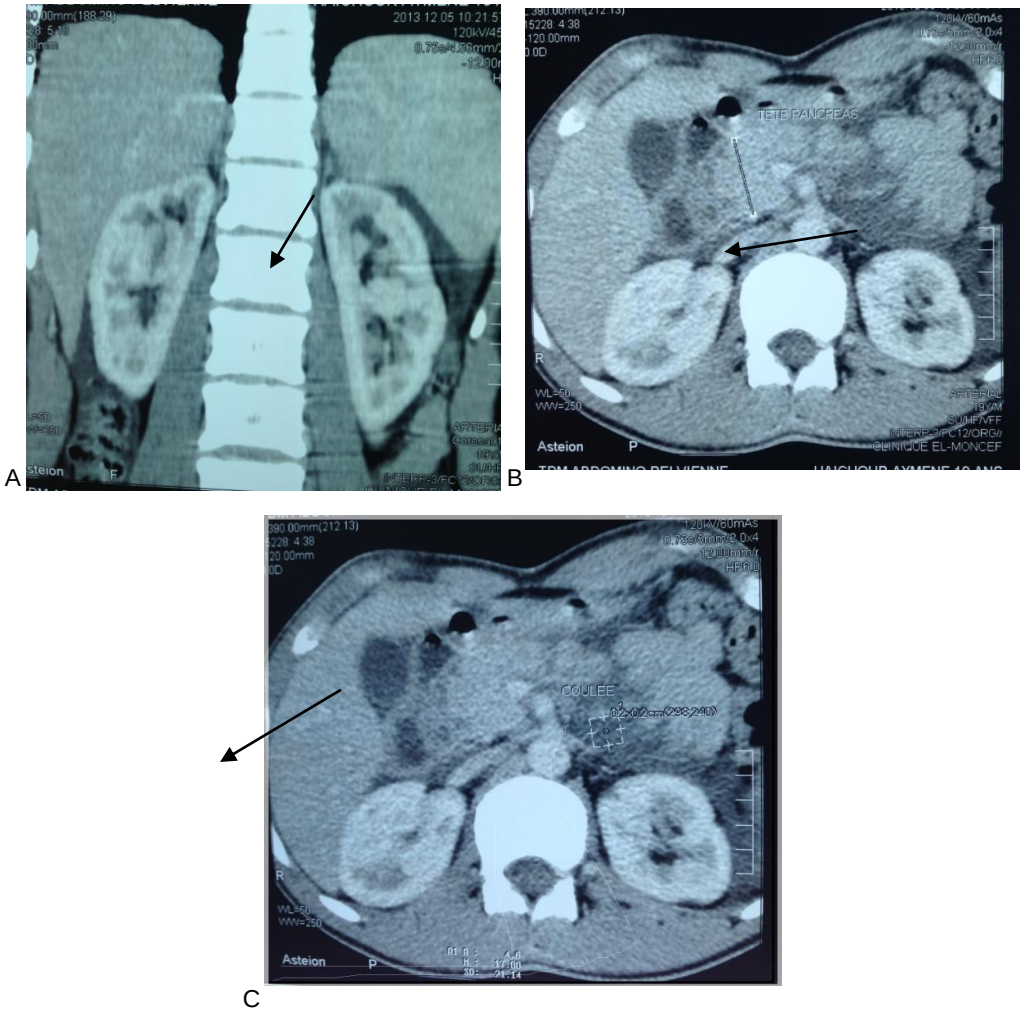

Figure 2.A,B,C . CT scan shows acute fluid collection (*arrow*) surrounding structures anterior to tail of pancreas and left anterior pararenal space.

with the inability to decrease in 24h(Cruz-Santamaria et al., 2012),detection of urinary trypsinogen activated peptide levelsareindicators of severity(Tenner et al., 1997).

Findings on plain films of the abdomen are nonspecific but are suggestive of AP(Rifkind et al., 1976). The most commonly recognized radiologic signs includeair in the duodenal C-loop, the sentinel loop sign (focal dilated proximal jejunal loop in the left upper quadrant) and the colon cutoff sign(distention of the colon to the transverse colon with a paucity of gas distal to the splenic flexure).

On ultrasound, pancreatic visualization is 60-78%. AP may appear as hypoechoic diffuse or focal enlargement of pancreas with dilatation of duct if head is focally involved(Jeffrey, 1989).

Abdominal CT scan is the "gold standard" for evaluatingAPand its complications(Baron and Morgan, 1999),itshould be reserved for patient with severe AP or that show an evident deterioration (Cruz-Santamaria et al, 2012),and preferably done between the fourth and tenth day after the disease onset. But for some authors its utility has been demonstrated in the first 36h to 48h(Cruz-Santamaria et al., 2012).

Typical CT findings in acute pancreatitis include focal or diffuse enlargement of the pancreas, heterogeneous enhancement of the gland, irregular or shaggy contour of the pancreatic margins, blurring of peripancreatic fat planes with streaky soft tissue stranding densities, thickening of fascial planes, and the presence of intraperitoneal or retroperitoneal fluid collections. The fluid collections most commonly are found in the peripancreatic and anterior pararenal spaces but can extend from the mediastinum down to the pelvis.

There are 2 different forms of AP : interstitial edematouspancreatitis and necrotizing pancreatitis(Sarr, 2013).

A new classification defines 3 degrees of severity according to the morbidity and mortality of the disease: mild, moderately severe, and severe acute pancreatitis (Sarr, 2013), based on the presence or absence of persistent organ failure and local and systemic complications.

Mild acute pancreatitis lacks organ failure or local or systemic complications.Moderately severe acute pancreatitis has transient organ failure, local complications such as acute peripancreatic fluid collections (APFCs), pancreatic pseudocysts, acute necrotic collections (ANCs), and walledoff necrosis (WON)(Sarr, 2013), and/or systemic complications but not persistent (>48 hour) organ failure(Sarr, 2013). APFCs are true fluid collections that develop in the early phase of interstitial edematous acute pancreatitis, remain sterile, usually resolve without intervention, and are not associated with necrotizing pancreatitis(Lenhart and Balthazar, 2008).

Severe acute pancreatitis is defined by persistent organ failure, either early or late in the disease, and patients usually have one or more local and/or systemic complications(Sarr, 2013).

CT can be used to assess the severity of acute pancreatitis and to estimate the prognosis. Balthazar and al, developed a grading system in which patients with acute pancreatitis are classified into 5 grades from A to E (Balthazar et al., 1990). CT severity index of acute pancreatitis (CTSI) is calculated from grade of acute pancreatitis and degree of pancreatic necrosis (Hirota et al., 2002).

Patients with a CTSI of 0-3 had a mortality of 3% and a complication rate of 8%. Patients with a CTSI of 4-6 had a mortality rate of 6% and a complication rate of 35%. Patients with a CTSI of 7-10 had a 17% mortality rate and a 92% complication rate.

Complications associated with pancreatitis include local complications like pancreatic necrosis, abscess, pseudo cyst, ascites, retoperitoneal haemorrhages, venous (splenic, renal, or portal vein) thrombosis, or systemic, like pulmonary effusions, acute respiratory distress syndrome, mediastinal abscess, disseminated intra-vascular coagulation, acute renal failure, peptic ulceration, acute stress ulceration, and central nervous system complications like encephalopathy, seizures, psychosis, and sudden blindness.

AP induced by HAV was not severe in the reported cases (Davis and Keeffe, 1992; Lopez Morante et al., 1986; Shrier et al., 1995), it most commonly manifests by asymptomatic hyperamylasemia (Ham and Fitzpatrick, 1973) or acute edematous pancreatitis(Lopez Morante et al., 1986).Our patient presented moderately severe acute pancreatitis with acute peripancreatic fluid collections , grade E Balthazarand CTSI of 4 , there were no systemic complicationsand he haduneventful recovery from both pancreatitisand hepatitis.

CONCLUSION

Acute pancreatitis should always be considered when abdominal pain complicates acute viral hepatitis. Management of acute viral pancreatitis remains conservative, with which treatment ourpatients recovered.

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