Multiple Intrahepatic Pseudocysts: An Unusual Location Following Acute Pancreatitis

INTRODUCTION: Pseudocyst is defined as a collection of pancreatic juice enclosed by a wall of nonepithelialised granulation tissue or fibrotic capsule. Formation of pseudocyst is a common complication following acute pancreatitis. It is usually formed following 6 weeks of acute attack in about 6% of patients, 40% of these show spontaneous resolution on CECT.(1) But these pseudocyst can occur anywhere in abdomen, depending on where activated pancreatic enzymes are released and what path enzymatic digestion takes.(2) i.e. anywhere from mediastinum to pelvis.(3) An intrahepatic pancreatic pseudocyst is a very rare complication of pancreatitis with less than 30 cases described in the published literature.(3,5) Lack of experience with this location of pseudocyst makes it a diagnostic challenge. Herein we report a case of a patient who developed multiple intrahepatic pseudocysts following an attack of acute pancreatitis. Though challenging, the diagnosis was made with help of imaging and was confirmed by cytological and biochemical analysis thereby making it an important differential for intrahepatic cysts.

CASE REPORT: A 40 yrs old chronic alcoholic and diabetic male was admitted to the hospital with complaints of diffuse pain in upper abdomen, malena and blood in vomitus since 5 days. The pain was not radiating to back. Patient gave a past history of an episode of acute attack of pancreatitis 2 months back for which he was admitted in some local hospital and treatment in form of I/V antibiotics and analgesics was given. On examination there was an ill defined swelling in epigastrium and liver was palpable 4cm below the costal margin and was non tender. Blood pressure was 100/70 righgt arm supine, pulse was 88/min, regular, low in volume with normal rhythm. There was mild anemia and sclera was slightly yellow. PBF showed dimorphic anemia with neutrophilic leucocytosis. Coagulation profile was normal. Liver function test showed 3390 IU/L serum amylase (normal value <115 IU/L), 4200 IU/L serum lipase (normal value<160 IU/L), 681 IU/L AST (normal value<37), 689 IU/L (normal value <41IU/L) and 258 U/L alkaline phosphate(normal value <130). The APACHE score at admission was 5.

Abdominal USG demonstrated hepatomegaly with evidence of multiple cystic SOLS of varying sizes in right lobe of liver which were communicating with pancreatic pseudocyst located in the lesser sac. A provisional diagnosis of pancreatic pseudocyst with intrahepatic extension was made. To further confirm the diagnosis contrast enhanced CT scan was done. Axial CECT with oral and I/V contrast at the level of pancreas showed an enlarged and heterogeneous pancreas with poorly delineated boarders with walled off hypodense areas in side s/o pseudocyst in the pancreas. Similar walled off hydodense areas, a few being ill defined were seen in segment 6 and 7 of liver s/o intrahepatic pseudocyst. Also there was evidence of marked infiltration of peripancreatic adipose tissue. These cysts were aspirated under CT guidance and 150 ml of straw coloured fluid was recovered. To know the exact nature the aspirated fluid it was sent for cytological and biochemical analysis. Cytology showed that the smears were of low cellularity chiefly comprising of inflammatory cells, a few hepatocytes and macrophages in a proteinaceous background. No neoplastic cells were seen. Amylase was increased (1500 IU/L) along with increased lipase.

Patient was kept NPO and intravenous fluids were given. It was decided to treat the patient conservatively. Enteral nutrition via naso-jejunal tube was started. After 2 weeks a repeat abdominal CECT scan was done, which showed a subtotal resolution of cysts in the liver and total resolution of pancreatic pseudocyst. Enteral nutrition was interrupted and oral ingestion was tolerated by the patient and he was discharged after 18 days stay in the hospital with no residving symptoms.

DISCUSSION: Pancreatic pseudocysts can be present virtually in any organ depending on where the activated pancreatic enzymes are released and what path enzymatic
digestion takes place. But intra-hepatic location of pseudo-
cyst following attack of acute pancreatitis is very rare and
less than 30 cases are described in literature.(3,5,6,8). Two
pathophysiological mechanisms have been proposed trying
to explain the location of pseudocyst in liver(3,5). The first
suggest a release of pancreatic juice that track through
lesser sac towards left lobe of liver along lesser omentum
or gastrohepatic ligament, due to proteolytic effect of pan-
creatic juice, it may dissect the liver capsule leading to for-
mation of subcapsular collections. The second mechanism
is that the propagation of pancreatic juice from head of
pancreas to portahepatis along the hepatoduodenal liga-
ment resulting in formation of intraparenchymal collection
forming intraparenchymal pseudocyst.(2,3,5,7).

Presence of intrahepatic pseudocyst post attack of pan-
creatitis must be included in the differential diagnosis of
cystic lesions in liver.(4,6). It causes no specific symptoms
and can be only an incidental finding. LFT can be normal
in some cases.(4,6). The content of intrahepatic pseudo-
cyst is homogenous with low echoic findings on US and
low density on CECT, whereas in liver abscess, the content
is denser and contours less demarcated.(6). If it appears af-
ter long, pancreas may appear normal. (5)

Amylase levels are increased in the fluid and this is quite
diagnostic.(6,5). Rarely intrahepatic pseudocyst can mimic
biliary dilatation when pancreatic fluid spreads into hepa-
toduodenal ligament. In these cases, the differential di-
agnosis comprises biliary obstruction, both malignant and
begin including begin strictures secondary to pancreatic
malignancies like pancreatic carcinoma, cholangiocarcino-
ma.(2) Intra cystic hemorrhage which can occur in 10% of
all pancreatic pseudocysts. (6)

Almost every pancreatic pseudocyst improves spontane-
ously and needs no specific treatment.(3,4) Draining is
done when symptoms secondary to compression are found
including percutaneous, endoscopic or surgical drainage.
(4) Criteria to drain a pancreatic pseudocyst have not been
established. Percutaneous drainage is promoted because it
allows diagnostic conformation and treatment for sympto-
matic and complicated cases only.(4,5,6,7)

CONCLUSION: Intra hepatic pseudocyst is to be included
in differential diagnosis of cystic lesions in the liver after an
attack of acute pancreatitis. It is important due to its rarity
and is a diagnostic challenge for a radiologist. As its treat-
ment is drainage or it may show spontaneous regression
various differentials are to be negated before one reaches
on a definite diagnosis. Role of pathologist cannot be over
looked as cytological and biochemical confirmation of the
cystic fluid is also important.

Fig 1 CECT (axial view), at the level of pancreas showing
enlarged heterogenous pancrease with poorly delini-
eated boarders.

Fig 2 CECT (axial view), at the level of pancreas showing multiple hypodense lesions in pancrease and liver, S/O pancreatic and intrahepatic pseudocyst.

Fig 3 Direct smears of the aspirated fluid shows low
cellularity with inflammatory cells, occasional hepatocytes and macrophages in a proteinaceous background admixed with RBC's.
Fig 4 centrifuged deposits of the fluid shows hepatocytes in small clusters, inflammatory cells and macrophages in a proteinaceous background.