

Chronic Pancreatitis with Total Pancreatic Lipomatosis – A Rare Presentation

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Abstract: Focal fatty replacement is a common degenerative lesion of pancreas while total fat replacement is extremely rare. We present a case of 49 years old male who presented with pain abdomen, was diagnosed as chronic pancreatitis with total pancreatic lipomatosis on CT scan. Serum amylase and serum lipase levels were normal. The case we present is unusual with paucity observed in world literature.

Keywords: Chronic pancreatitis, Total pancreatic Lipomatosis

I. Introduction

Fatty replacement of exocrine pancreas also known as fatty infiltration, lipomatosis, adipose atrophy or lipomatous pseudoatrophy is a well documented benign entity of speculative origin¹. It is defined as deposition of fat cells in pancreatic parenchyma². We report a case of chronic pancreatitis with total fat replacement of exocrine pancreas diagnosed by CT scan. In our case, chronic pancreatitis secondary to pancreatic duct obstruction by calculus proved to be the sole etiological factor.

II. Case History

A 49 years old male, presented to our hospital with complaint of pain abdomen of 3 months duration. Abdominal pain was of dull aching type located in epigastrium and had radiation to back. It was not associated with vomiting , aggravated on taking meals and relieved on medication. Patient denied any history of fever, altered bowel habits, weight loss or anorexia. There was no past history of tuberculosis, diabetes mellitus, hypertension or any surgery. He was a chronic alcoholic since 20 years , used to consume alcohol daily and also chronic smoker too. General examination was unremarkable. Per abdomen examination showed mild epigastric tenderness with presence of bowel sounds and no organomegaly. Laboratory investigations showed normal serum amylase (200 U/L) and lipase levels (91 U/L). Routine blood tests, liver and renal function tests were normal. Chest radiograph showed no abnormality. Ultrasound abdomen showed increased echogenicity of pancreas. Computed tomography abdomen revealed atrophic pancreas with complete absence of pancreatic parenchyma and fatty replacement(Fig 2 and 3). A solitary intraductal calculus of 5mm size was noted in main pancreatic duct in neck region of pancreas without pancreatic duct dilatation (Fig 1). There was no dilatation of common bile duct or intrahepatic biliary radicals. On the basis of above findings, a diagnosis of diffuse pancreatic lipomatosis due to chronic pancreatitis secondary to pancreatic duct obstruction by calculus was considered.

III. Discussion

Pancreatic lipomatosis is fatty infiltration or replacement of part or all glands of pancreas. However pathogenesis of disease is not well understood. It is common in elderly, obese individuals and in some patients with congenital abnormalities such as Shwachman-Diamond syndrome and cystic fibrosis. Other conditions relate to diffuse fatty replacement of pancreas include Diabetes mellitus, Steroid therapy, Cushing's syndrome, Chronic Pancreatitis, Hemochromatosis and Malnutrition^{2,3}. Our patient was a middle aged man who presented with pain abdomen and was diagnosed as chronic pancreatitis on CT abdomen. Computed Tomography abdomen showed atrophic pancreas with pancreatic intraductal calculus (Pancreatic duct size : 3MM) with complete pancreatic parenchymal absence and fatty replacement (**Fig 1,2,3**). Thus probable cause of pancreatic lipomatosis in our patient was chronic pancreatitis secondary to pancreatic intraductal calculus.

In most cases, fatty replacement of pancreas does not cause clinical symptoms; however patients with severe cases may present with atypical abdominal pain, malabsorption and diabetes mellitus due to exocrine and endocrine dysfunction. Pancreatic lipomatosis is visible on abdominal sonography, Computed tomography (CT) and magnetic resonance imaging (MRI). An increase in echogenicity of the pancreas is noted on abdominal sonography. CT shows more specific fat density in pancreatic bed. MRI reveals a variable sized pancreas with high signal intensity³. Recognition of total fatty replacement of pancreas is important as it can result in

malabsorption due to pancreatic exocrine insufficiency⁴. Extensive fatty replacement of pancreas has been reported in past by few authors. Patel et al demonstrated lipomatous pseudohypertrophy of pancreas with dilated pancreatic duct due to obstructing calculus in distal pancreatic duct¹. Haunz et al reported fat replacement in tail of pancreas in a clinical study of 80 cases of carcinoma head of pancreas⁵. Pancreatic lipomatosis with stenotic pancreatic duct secondary to pancreatic head adenocarcinoma after neoadjuvant chemoradiotherapy has been reported by Makay et al⁶. Total pancreatic lipomatosis with chronic pancreatitis has been extremely unusual as aptly noted in the world literature. Present case under discussion had only pain abdomen as presenting symptom with normal serum amylase and lipase levels.

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Legends to figures:

Fig 1 : Non-enhanced axial Computed tomography (CT) showing hyperdense calculus in the pancreatic duct and pancreatic parenchyma which is replaced by fat



Fig 2 : Arterial phase contrast enhanced axial CT section showing head of pancreas completely replaced by fat



Fig 3 : Portal venous phase of contrast enhanced axial CT scan showing fat density in the body and tail of pancreas (arrow)

