

Tropical Pancreatitis presented as early onset Diabetes Mellitus

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ABSTRACT

Tropical pancreatitis (TP) is a special form of chronic pancreatitis seen in tropical countries and has been less commonly reported from Nepal. We present a young non alcoholic female with early onset Diabetes Mellitus whose further investigations revealed pancreatic duct stones and was diagnosed as a case of tropical pancreatitis and underwent modified puestow's procedure.

Keyword: diabetes mellitus, puestow's procedure, tropical pancreatitis

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Case Report

A 23 year female presented with complaints of polyuria, polydipsia & polyphagia for 6 months. She had no complains of abdominal pain or jaundice and did not consume alcohol. On examination there was no significant finding. Blood studies revealed RBS:-237mg/dl, cholesterol:-156mg/dl, Triglyceride:-328mg/dl, HbA1c:11.5, Urine glucose: ++ & Acetone negative. So she was diagnosed as case of Diabetes Mellitus and was discharged with Inj. Huminsulin 30:70, 16U morning and 10U evening.

1 week later, the patient presented again with complaints of epigastric pain, nausea, vomiting of 1 episode, loose stool for 1 day, burning sensation B/L limb. On examination, mild tenderness over epigastrium and suprapubic region. Blood studies were repeated which were as follows: - TC-13200, N-66, L-31, E-3, and Urine RE-glucose++, Stool-semi loose, mucous+, fat droplets +, Amylase-68, Glucose F-205mg/dl and PP-247mg/dl.

She was treated conservatively with Human Insulin, antispasmodic drugs and proton pump inhibitors but her abdominal pain and discomfort did not subside. USG abdomen revealed grossly dilated main pancreatic duct containing multiple calculi without evidence of obstructive cholangiopathy. (Figure 1) CT scan abdomen reported chronic pancreatitis with pancreatic duct calculi. Main pancreatic duct dilated (16mm). (Figure 2)

Fig 1. USG showing grossly dilated main pancreatic duct with multiple calculi

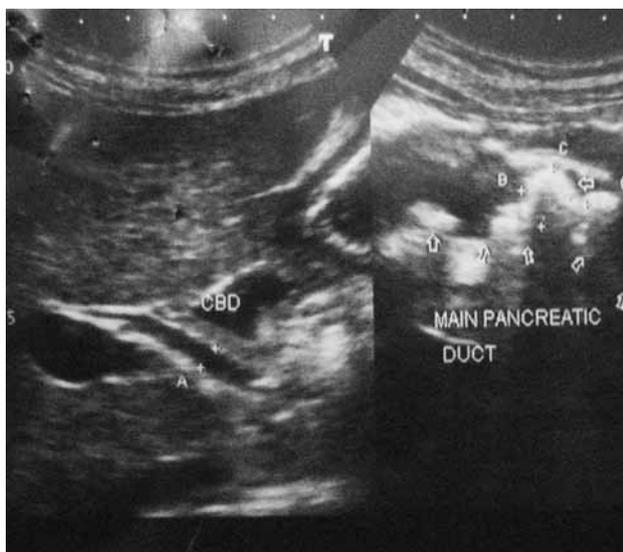


Fig 2. CT scan showing chronic pancreatitis with pancreatic duct calculi



She was diagnosed as a case of Tropical Pancreatitis and was planned for Modified Puestows procedure. The operative findings revealed a dilated main pancreatic duct with multiple pancreatic duct stones, the largest 2 X 2 cm (Figure 3). The post operative period was uneventful.

Fig 3. Intra operative finding showing dilated main pancreatic duct



Discussion

Tropical Pancreatitis (TP) was first reported by Zuidema from Indonesia.

It affects the non alcoholic young from Asia and Africa.¹ It is characterized by recurring abdominal pain, Diabetes mellitus, exocrine pancreatic insufficiency and Pancreatitis.

Suspected causative factors of TP have included past malnutrition, cyanogenic glycosides like cassava, pancreatic stasis, viral and parasite infections, and autoimmune mechanisms but they all have been discarded for lack of supportive evidence. ²At present only two etiological factors are considered: oxidative stress and genetic mutation. Tropical pancreatitis are deficient in antioxidants. ³Preliminary study also showed that TP patient have free radical mediated cell injury as evidenced by high level of Malondialdehyde and decrease antioxidant levels. ^{4,5}

Patients with TP present with episodic epigastric pain. 3/4th of the patients are diabetic at presentation. There is pancreatic calcification usually intraductal which is seen in 13-95% patients. ⁶These patients are at higher risk of developing pancreatic carcinoma which is 8 times as compared to general populations. ⁷

The pancreas looks small, shrunken, and fibrotic. The cut surface shows dilated ducts and ductules with intraductal calculi or protein plugs with diffuse background of fibrosis. The size of stones varies from small grains of sand to large ones (4-5cm). Microscopically, extensive inter- and intralobular fibrosis is seen. Ducts and ductules are markedly dilated with denudation of the ductular epithelium in places and squamous metaplasia in others. Periductular fibrosis is seen in the main duct, the collecting duct and small ductules, but inflammatory cell infiltration is sparse in comparison to alcoholic chronic pancreatitis. ⁸

At present, treatment for tropical pancreatitis is similar to that for any other varieties of chronic pancreatitis and is aimed at relieving the symptoms, like pain, diabetes and maldigestion. Studies done at different centers had clearly demonstrated that there are better results regarding pain relief with surgical interventions. ⁹

Puestow procedure is the treatment of choice and is indicated in those patients who have symptomatic chronic pancreatitis with pancreatic ductal obstruction and a dilated main pancreatic duct. The drawback of this procedure is persistent pain due to failure to drain the pancreatic duct on the head of the pancreas. Some surgeons prefer to do Frey Procedure which is the combination of Puestow procedure along with removal of part of the head of the pancreas.

Sidhu et al conducted a study at AIIMS (1984-1994) with total 126 patients of tropical pancreatitis. Of these 69(54.8%) were treated surgically for refractory pain. Modified Puestow's was performed on 56 patients, modified Puestow's with distal pancreatectomy on 4, Duval's procedure on 7, and distal Pancreatectomy alone on 2. Postoperatively, 45(90%) patients reported adequate pain relief at 3 months. 41(82%) patients got significant long term pain relief after 5 years. ¹⁰

Newer techniques are emerging for decompressing the pancreatic duct such as endoscopic sphincterotomy and basketing of pancreatic ductal stones. Success rates of pancreatic duct clearance using a combination of basketing and extracorporeal shock-wave lithotripsy of 50-70% have been reported in various series of chronic pancreatitis. ¹¹

Conclusion

Tropical pancreatitis is a rare cause of early onset diabetes mellitus and should be suspected in cases with associated abdominal pain. The treatment is a variety of surgical procedures and newer techniques are evolving.

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