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Fibrocalculous Pancreatic Diabetes: A Rare Case Report in Marathwada Region

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Abstract: Fibrocalculous pancreatic diabetes (FCPD) is a type of diabetes secondary to nonalcoholic chronic pancreatitis of uncertain etiology prevalently seen in tropical developing countries. It is early prediabetes stage of FCPD and turns to DM with aggressive clinical course. Herein we present a case which was diagnosed and managed as FCPD in adult woman at our center.
Keywords: Fibrocalculous pancreatic diabetes, chronic pancreatitis, tropical diabetes

INTRODUCTION

Fibrocalculous pancreatic diabetes (FCPD) is a type of diabetes secondary to nonalcoholic chronic pancreatitis of uncertain etiology prevalently seen in tropical developing countries. Tropical chronic pancreatitis is a juvenile form of chronic, calcific, non-alcoholic pancreatitis predominantly seen in developing countries of the tropical world. It is a classical triad of abdominal pain, steatorrhea (exocrine pancreatic dysfunction) and diabetes mellitus [1]. It is early prediabetes stage of FCPD and turns to DM with aggressive clinical course [2].

Several cases and studies of FCPD have been reported in literature. It has been reported in Kerala state of India in endemic proportion in a single large case series. Maximum prevalence of FCPD is observed in Southern India [3, 4]. Commonly it is seen in lean, malnourished people from lower socioeconomic status. But it is a rare entity in our Marathwada region of Maharashtra. We diagnosed and managed a case of FCPD in adult woman at our center.

CASE REPORT

A 34 year old woman from rural area presented with pain in epigastic region radiating to back since 2 months and polyuria, polydypsia from 1 month. Her personal, family and past medical history was not significant. She was not suffering from pain in abdomen since childhood. There was no history of DM in her first degree relatives. She was not consuming tobacco, alcohol. Her menstrual history was normal.

Physical examination showed adult lady with body mass index of 20.1 Kg/m^2 and moderate nutritional status. Her systemic examination including cardiovascular, respiratory and nervous system was non-significant without evidence of clinical neuropathy. There was no evidence of splenomegaly and hepatomegaly and any lump on palpation of abdomen. Ultrasound examination of abdomen revealed features of chronic calcific pancreatitis with dilated pancreatic duct with multiple intra ductal calculi (Fig. 1).

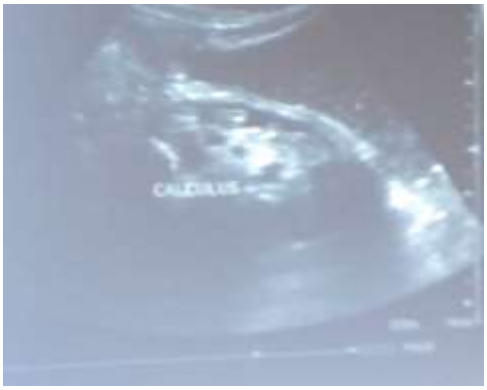

Figure 1: Ultrasonography showing presence of multiple calculi in pancreas

Her laboratory diagnostic work up showed presence of mild pallor (Hemoglobin 9.2 gm %) and hypoprotienaemia (serum total protein 5.3 gm/dl, albumin 2.8 gm/dl, globulin 2.5 gm/dl). Urine examination demonstrated glycosurea. Her blood glucose in fasting state was 145 mg/dl and 246 mg/dl in postprandial state. Glycosylated hemoglobin was 7.9%. So from ultrasound reports and with diagnosis of new onset DM, she was diagnosed as a case of FCPD. Lipid profile, liver and renal function tests, serum amylase and lipase were within normal stipulated range. Patient was screened for micro vascular and macro vascular complications of diabetes. First we achieved glycemic control with injection of Insulin (Mixtard) in

dose of 8 IU before breakfast and 8 IU before dinner. She received supplementation of multivitamin tablets and pancreatic enzyme granules. Dietician emphasizes her for high protein intake with repeated nutritional counseling.

After thorough evaluation, patient underwent endoscopic retrograde cholangiopancreatography and extracorporeal shock wave lithotripsy for clearance of pancreatic calculi. Now with removal of calculi, patient has achieved good glycemic control with insulin.

DISCUSSION

Our patient presented pain in abdomen and new onset of DM secondary to FCPD. It is relatively rare cause of DM characterized by chronic pancreatitis of unknown etiology and presence of large intra ductal calculi in pancreas.

Previously various terminologies were used for this type of DM like pancreatic diabetes, Pancreatogenous diabetes and TCP. Then the term FCPD was introduced by World Health Organization Study Group Report in 1985. Although etiology of FCPD is not understood clearly, malnutrition, familial factors, genetic predisposition, SPINK 1 mutations, oxidative stress and deficiencies of micronutrients may be causative factors [1, 5].

In India FCPD is observed mostly in southern states. In Maharashtra C.S. Yajnik studied prospectively 55 cases of FCPD diagnosed and managed their center in Pune. They found wide spectrum of clinical features than classical features of FCPD in their cases [6]. Habeos and colleagues reported 40 year male residing in Greece to have FCPD and managed only with strict glycemic control with Insulin and dietary modification [7]. Mohan *et al*. were the first researchers to define the criterion for diagnosis of FCPD [8]. According to them, patient should be from tropical country with evidence of chronic pancreatitis and diabetes and absence of other cause of pancreatitis.

Chronic pancreatitis should be characterized by at least three of the following findings:

- Abnormal pancreatic morphology on X ray or computed tomography imaging
- Recurrent abdominal pain since childhood
- Steatorrhea
- Anormal pancreatic function tests.

Our patient fulfills this criterion to diagnose as FCPD in spite of better nutritional status.

Various cases have been reported from tropical as well as no tropical countries. (9, 10) Diagnosis of FCPD is usually missed and delayed because of nonspecific symptom of abdominal pain. Usually it is detected during ultrasound examination. But early diagnosis of FCPD is important as nature of diabetes in these patients is aggressive requiring Insulin for glycemic control.

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