TWO CASE REPORTS OF MACROVASCULAR COMPLICATIONS IN FIBROCALCULOUS PANCREATIC DIABETES

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Fibrocalculous pancreatic diabetes (FCPD) is a form of diabetes secondary to chronic, calcific, non-alcoholic pancreatitis[7]. It was earlier believed that being a secondary form of diabetes, vascular complications were rare in this condition[3,6]. Recent studies from our center[2,5] and from other groups[1] have shown that microvascular complications occur as frequently as in primary forms of diabetes. In this paper we report on the occurrence of macrovascular complications in FCPD.

CASE REPORTS

Patient nº 1

A 45-year-old male patient came to our center in January 1989 for control of diabetes. He gave a history of recurrent abdominal pain radiating to the back. He had insulin-requiring diabetes of 2 years' duration.

On examination he was found to be of ideal body weight (weight 49.1 kg and BMI 21.3). Systemic examination was normal, BP was 140/96 mmHg. There was no evidence of retinopathy or nephropathy. X-ray of the abdomen revealed large pancreatic calculi (fig. 1). Ultrasonography of the abdomen confirmed that the calculi were intraductal. Additionally, there was evidence of chronic pancreatitis with increased echogenicity of the gland, and the pancreatic duct was grossly dilated (1.1 cm). Six months prior to his visit to our center, he developed acute chest pain associated with breathlessness. He was admitted to hospital where the electrocardiogram (ECG) showed evidence of acute anteroseptal infarction (fig. 2). He was treated in an intensive care unit and is at present doing well.

Key-words: Diabetes mellitus; Fibrocalculous pancreatic diabetes; Gangrene; Macrovascular complications; Myocardial infarction.

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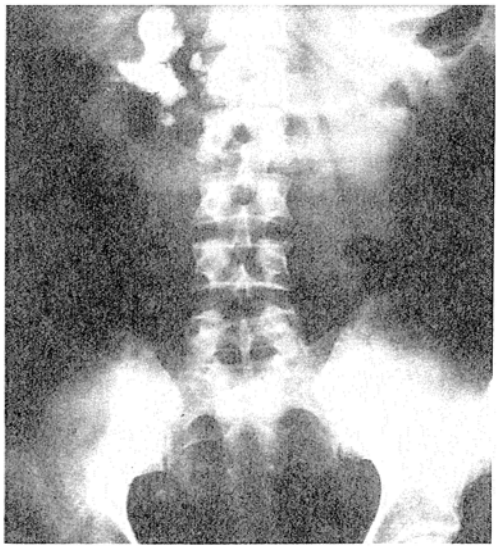

Fig. 1 - X-ray abdomen of patient nº 1 showing large pancreatic calculi in the head region of the pancreas.

Patient nº 2

A 40-year-old male patient came to our center with a history of pain and ulceration of the right hallux. He had diabetes of 14 years' duration. Pancreatic calculi had been diagnosed (fig. 3) 4 years prior to the onset of diabetes while investigating for recurrent abdominal pain.

Chronic pancreatitis and ductal pathology were confirmed on ultrasonography. He was lean with a body mass index of 18.6 and had clinical signs of

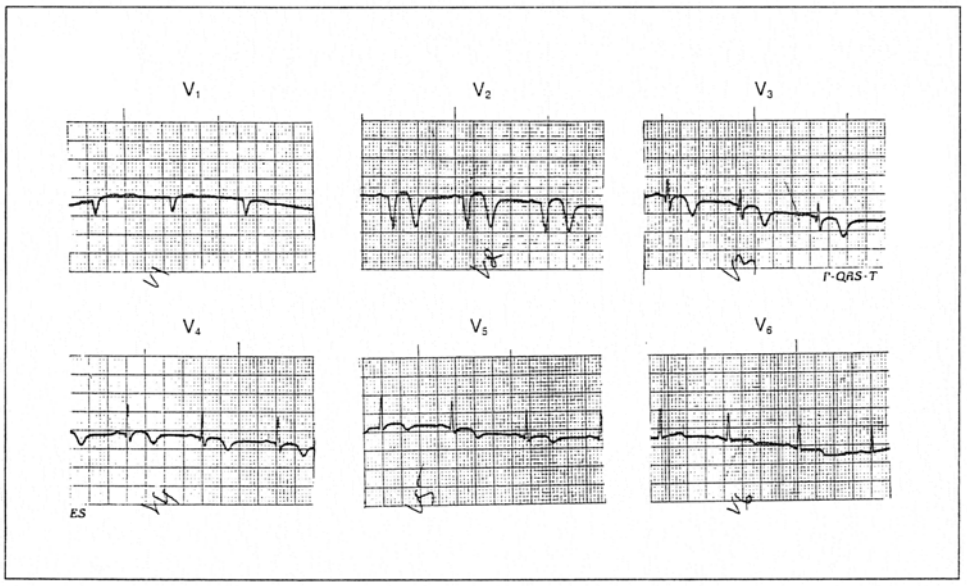

Fig. 2 - ECG showing evidence of anteroseptal infarction.

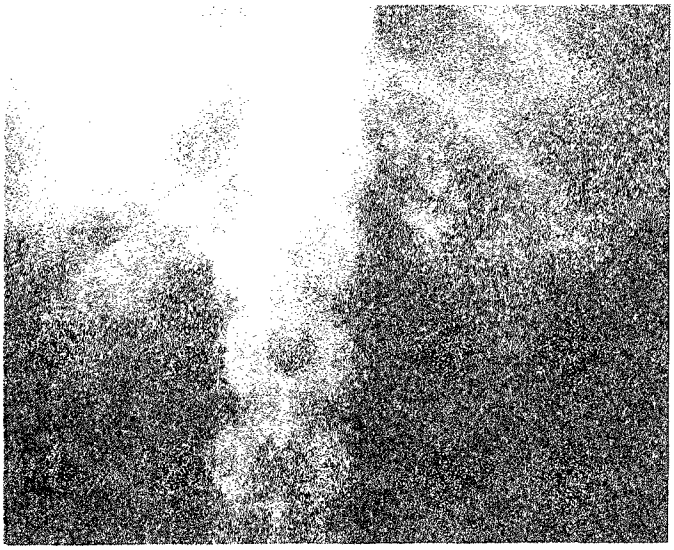

Fig. 3 - X-ray abdomen showing extensive pancreatic calculi in patient nº 2.

protein calorie malnutrition. He was a non-smoker and teetotaller. On examination he was found to be febrile. There was a foul smelling discharge from the right foot. Local examination revealed evidence of ulceration and gangrene of the right hallux. The whole of the right foot had an ischemic appearance. Clinical examination and Doppler studies showed the dorsalis pedis and posterior tibial pulsations to be absent on the right side. The ankle jerks were lost bilaterally. There was evidence of background diabetic retinopathy but no

	patient nº 1	patient nº 2
fasting plasma glucose (mg/dl)	146	209
post-prandial plasma glucose (mg/dl)	323	426
HbA_1 (%)	9.9	10.6
total cholesterol (mg/dl)	169	188
HDL-cholesterol (mg/dl)	47	45
LDL-cholesterol (mg/dl)	110	130
VLDL-cholesterol (mg/dl)	12	13
total cholesterol/HDL-cholesterol ratio	3.6	4.1
	(normal 4.1 ± 0.6)	
LDL-cholesterol/HDL-cholesterol ratio	2.3	2.8
	(normal 2.4 ± 0.6)	
triglyceride (mg/dl)	64	86
fecal chymotrypsin (U/g)	3.1	2.0
	(values < 5.8 diagnostic of exocrine pancreatic insufficiency)	

Tab. 1 - Biochemical investigations of the two patients.

evidence of nephropathy. The patient underwent an above knee amputation of the right leg and is at present doing well.

Table 1 shows the biochemical investigations of the two patients presented in this paper.

DISCUSSION

Earlier reports have stressed the rarity of macrovascular complications in FCPD[1]. In his recent monograph, GEEVARGHESE who has the world's largest series of FCPD with over 1,700 cases, maintains that hemiplegia, myocardial infarction and gangrene are virtually absent in FCPD[1]. This paper presents evidence of two macrovascular complications in FCPD patients. There is no doubt about the diagnosis of FCPD in both cases as it is based on the history of recurrent abdominal pain, insulin requiring diabetes, X-ray evidence of pancreatic calculi, and chronic pancreatitis on ultrasonography and finally by the low fecal chymotrypsin levels. Patient nº 1 demonstrates the occurrence of myocardial infarction and patient nº 2, of peripheral vascular disease. Macrovascular complications are rare in FCPD patients for the following reasons: the patients are relatively young, they have low body mass indices and low serum cholesterol levels[3]. Both the patients presented here were of a relatively older age group and patient nº 1 was not lean. Surprisingly, serum lipid levels were in the normal range on both patients. Ischemic heart disease does occasionally occur in FCPD patients in the older age groups[4]. This paper presents evidence that myocardial infarction and gangrene also do occur in FCPD patients.

SUMMARY

Fibrocalculous pancreatic diabetes (FCPD) is a form of diabetes secondary to chronic, non-alcoholic pancreatitis in tropical countries. Being a secondary form of diabetes, vascular complications are believed to be rare. In this paper we present two case reports of macrovascular complications (myocardial infarction and gangrene). This shows that large vessel disease does occur in FCPD.

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