



When Blood is Thicker Than Water: A Case of Acute Pancreatitis Secondary to Familial Hypertriglyceridemia

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Introduction

Hypertriglyceridemia is one of the major causes of acute pancreatitis, accounting for up to 10% of all cases [1]. It typically occurs in patients with dyslipidemia in the presence of a secondary condition, such as inadequately controlled diabetes, excess alcohol consumption or medication use. It is also associated with greater clinical severity and rate of complications compared to other etiologies of acute pancreatitis [1]. Familial hypertriglyceridemia is characterized by an increase in VLDL particles and follows an autosomal dominant inheritance pattern [2]. Here we discuss a patient case of acute pancreatitis secondary to familial hypertriglyceridemia.

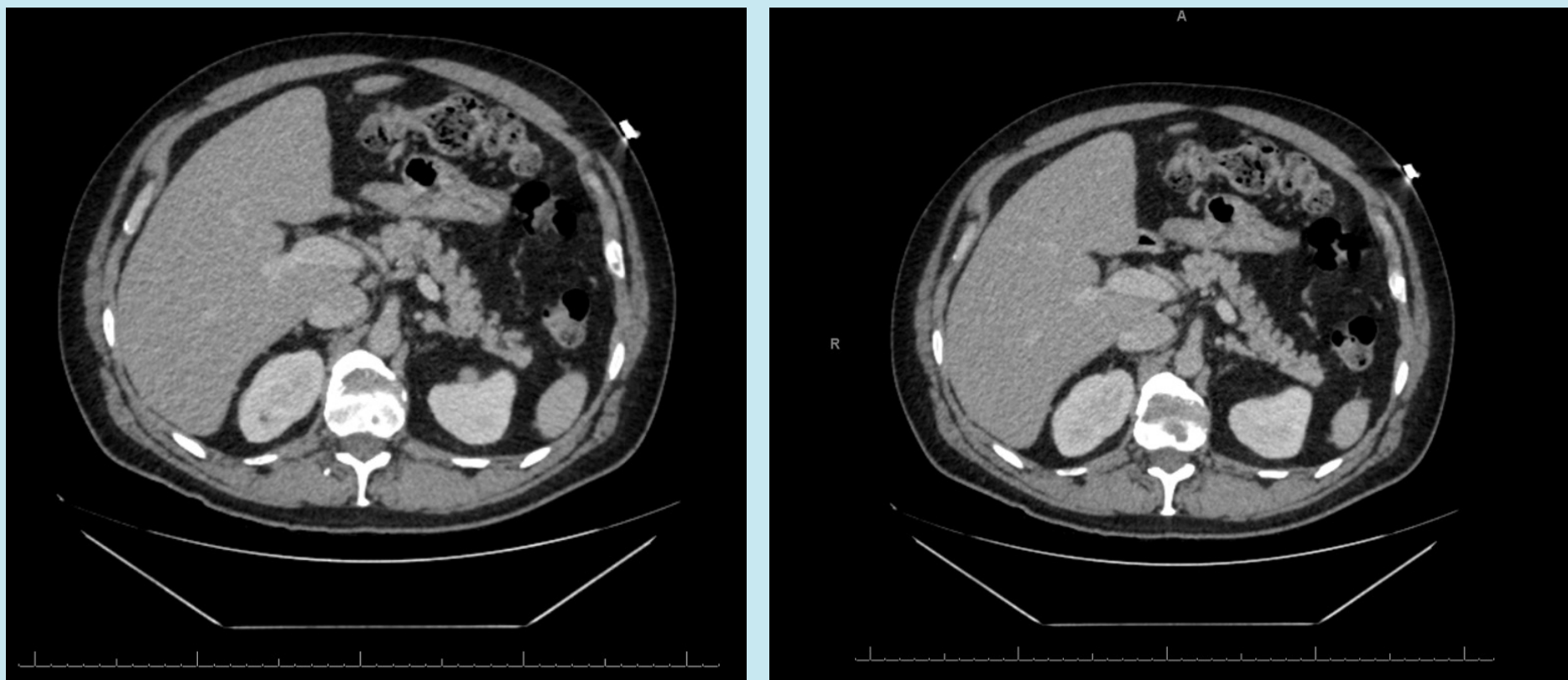


Figure 1,2: Axial computed tomography scans showing fat stranding along the pancreas head.

Case Presentation

A 56-year-old male with hypertension, uncontrolled diabetes mellitus (A1C 12.6%), and familial hypertriglyceridemia presented to the emergency department with chief concern of abdominal pain for two days. The pain was described as 9/10 pressure radiating across the abdomen, to the sternum. The patient stopped taking his prescribed medications one year prior, including amlodipine 10 mg daily, atorvastatin 20 mg daily, fish oil 1000 mg BID, cholecalciferol 50 mcg daily, vitamin B12 500 mcg daily, lisinopril 40 mg daily, and metformin 1000 mg BID.

Physical exam was unremarkable aside from tenderness to palpation diffusely throughout the abdomen. Blood drawn for labs had a white hue and was noted to be “strongly lipemic”. Labs revealed elevated triglyceride count >8000 mg/dL, cholesterol >705 mg/dL and lactic acid was 5.0 mmol/.. Glucose was elevated to 403 mg/dL, sodium decreased to 114 mEq/L, and lipase elevated to 298 U/L. Liver Function Tests (LFTs) were within normal limits. Abdominal CT showed fat stranding along the anterior aspect of the pancreatic head (Fig. 1), confirming diagnosis of acute pancreatitis secondary to familial hypertriglyceridemia based on the Atlanta Classification [3].

The patient was managed with insulin drip until triglycerides were <500 mg/dL, IV fluids to slowly correct sodium, bowel rest with NPO initially and restarting low-fat diet as tolerated and restarted on anti-lipid management for hypertriglyceridemia. Medications at discharge included atorvastatin 40 mg daily, fenofibrate 145mg daily, fish oil 2000 mg BID for medium-chain fatty acids, lisinopril 10 mg daily, basal insulin and metformin 500 mg BID.

Discussion

Acute pancreatitis is a disease that has many different etiologies, the most common of which include alcohol and gallstones, followed by hypertriglyceridemia-mediated disease. Pancreatitis secondary to hypertriglyceridemia typically occurs in those with genetic lipid disorders, most commonly types I, IV, or V [4]. The proposed mechanism for hypertriglyceridemia-induced pancreatitis suggests that high levels of lipids increase plasma viscosity, resulting in ischemia and inflammation of pancreatic tissue [1]. Proper workup is necessary to determine the etiology of pancreatitis. Liver function tests, lipid panel, and pancreatic enzymes are important laboratory values to obtain. Right upper quadrant ultrasound is an important step to identify obstructive causes if indicated. Magnetic Resonance Cholangiopancreatography (MRCP) and abdominal CT may also aid in workup. All patients should be managed with aggressive IV fluids, early enteral feeding to advance as tolerated, and pain medication, with further management to control the underlying etiology.

Management of familial hypertriglyceridemia will help in preventing recurrence of this disease. These treatments are primarily focused on reducing levels of triglycerides, managing comorbid conditions, and lifestyle modifications such as diet and exercise [5]. Statins are often the first-line pharmacotherapy choice. Fibrates such as fenofibrate and gemfibrozil may also be used for management of hypertriglyceridemia [6]. Fibrates have been shown to reduce triglycerides levels by up to 50%, attributing to their placement onto the typical treatment protocol [6]. Other medications such as niacin and fish oil (omega-3 fatty acids) have been shown to reduce both VLDL and triglyceride levels [7].

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