

Sarcoidosis presenting as acute pancreatitis

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Abstract

Hypercalcemic states may result in acute pancreatitis. Sarcoidosis has been rarely reported as a cause of acute pancreatitis. A 42-year-old female came with abdominal pain and was found to have acute pancreatitis. Evaluation revealed hypercalcemia and evidence of pulmonary infiltrates and mediastinal lymphadenopathy. Transbronchial lung biopsy revealed noncaseating granulomas consistent with sarcoidosis. In conclusion, sarcoidosis may result in acute pancreatitis by causing hypercalcemia.

Key words

Acute pancreatitis, bronchoscopy, granuloma, hypercalcemia, hyperparathyroidism, sarcoidosis, steroids

Introduction

Sarcoidosis is an autoimmune inflammatory disease which can involve multiple organs. It is characterized by the presence of noncaseating granulomas. It may result in numerous manifestations and may also remain asymptomatic in a subgroup of patients. Gastrointestinal involvement usually manifests as hepatic involvement manifesting as elevated alkaline phosphatase levels.^[1] Pancreatic sarcoidosis is uncommon and usually detected on autopsy. Symptomatic sarcoidosis may mimic pancreatic malignancy and usually occurs as a multisystem disease.^[2] Sarcoidosis, on occasion, may indirectly involve the pancreas by causing pancreatitis secondary to hypercalcemia. Sarcoidosis is an uncommon cause of acute pancreatitis.^[3]


Case Report

A 42-year-old lady was admitted with a history of epigastric pain for 2 days. The pain was severe, nonradiating and was

associated with nonbilious vomiting. There were no previous episodes of pain, history of gallstones or any addictions. She was a known hypertensive well controlled on oral olmesartan. On admission, she had tachycardia (Pulse: 109/min), tachypnea (respiratory rate: 28/min), with blood pressure of 138/98 mm of Hg. She was afebrile, and abdominal palpation revealed epigastric tenderness. There was no palpable lymphadenopathy. On investigations, she was found to have leucocytosis (haemoglobin: 10.4 g/dL, total leucocytes: 14100/mm³, platelets: 245000/mm³). Serum amylase and lipase were elevated (1150 and 854 U/L respectively). She had elevated blood urea nitrogen (26 mg/dL) but a normal creatinine (1.3 mg/dL). The liver functions were normal. The computed tomography done on day seven of pain revealed bulky and heterogenous pancreas with peripancreatic stranding [Figure 1], with ascites and bilateral pleural effusion.

For evaluation of the etiology of acute pancreatitis, abdominal ultrasound revealed no evidence of gallstones, and her triglyceride levels were normal (115 mg/dL). However, she had an elevated serum calcium level (12.8 mg/dL, Normal: 8.7–10.2 mg/dL). Her serum intact parathormone levels were normal (27.68, Normal: 6–65 pg/mL). Her chest roentgenogram revealed diffuse military shadows. Her chest computed tomography revealed multiple diffuse nodular opacities in bilateral lung fields and few fibrotic lesions were seen in the right middle lobe [Figure 2]. Few enlarged subcentimetric lymph nodes were noted in aorto-pulmonary window, pericarinal and right hilar regions. Her sputum for acid-fast bacillus and mantoux skin test were negative. In view

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of hypercalcemia and lung lesions, the patient was evaluated for sarcoidosis. Her serum angiotensinogen converting enzyme levels were normal (60 U/L, Normal: 8–65 U/L). The patient underwent bronchoscopy with bronchoalveolar lavage (BAL) and transbronchial lung biopsy. The BAL revealed pigment laden macrophages, respiratory epithelial cells, and lymphocytes with occasional granuloma. The lung biopsy showed well-formed compact epithelioid cell granulomas with Langhans giant cells with fibrosis around the granulomas [Figure 3]. Stain for acid-fast bacilli was negative. Real-time polymerase chain reaction on BAL was negative for mycobacterium tuberculosis. With intravenous hydration, the patient improved with the systemic inflammatory response settling and normalization of serum calcium levels. The patient was discharged on oral prednisolone 50 mg/day and is asymptomatic after 3 months of follow-up with normal serum calcium levels.

Discussion

Sarcoidosis is a granulomatous inflammatory disease involving multiple organs. It usually is characterized by pulmonary involvement characterized by hilar lymphadenopathy, parenchymal infiltrates and fibrotic changes and is commonly confused with pulmonary tuberculosis in endemic regions.^[3,4] Acute pancreatitis in sarcoidosis may occur secondary to hypercalcemia or granulomatous involvement of the pancreas.^[3,5,6] Hypercalcemia in sarcoidosis occurs variably and is due to increased 1, 25-dihydroxy-Vitamin D production by the sarcoïd granulomas.^[7] It responds well to steroids. In our patient, the presence of hypercalcemia and abnormalities on chest roentgenogram provided the clue to underlying sarcoidosis.

The common causes of acute pancreatitis are alcohol, gallstones, drugs, postendoscopic retrograde cholangiopancreatography, trauma, pancreas divisum and idiopathic.^[8] Hypercalcemia is well-recognized as a precipitant of acute pancreatitis. Various disorders predisposing to hypercalcemia have been reported as a cause of acute pancreatitis including malignancy, parathyroid disorders, and Vitamin D supplementation, intravenous calcium administration and certain drugs like thiazides.^[9-12] Of these parathyroid disorders are amongst the commonest implicated in both the genesis of acute and chronic pancreatitis.^[12,13] The mechanism of hypercalcemia related pancreatitis is not clear but may involve a secretory block, protease activation and intracellular accumulation of zymogens resulting in pancreatic injury.^[14] Increases in extracellular calcium levels result in an increase in intracellular levels resulting in the secretory block and intra-acinar trypsinogen activation as demonstrated in animal models.^[11] Sarcoidosis, by virtue of the increased risk of hypercalcemia, may lead to acute pancreatitis as in our patient. The ultrasound of the neck revealed no evidence of any hyperparathyroid state. The diagnosis of sarcoidosis was eventually clinched by a transbronchial lung biopsy which demonstrated noncaseating

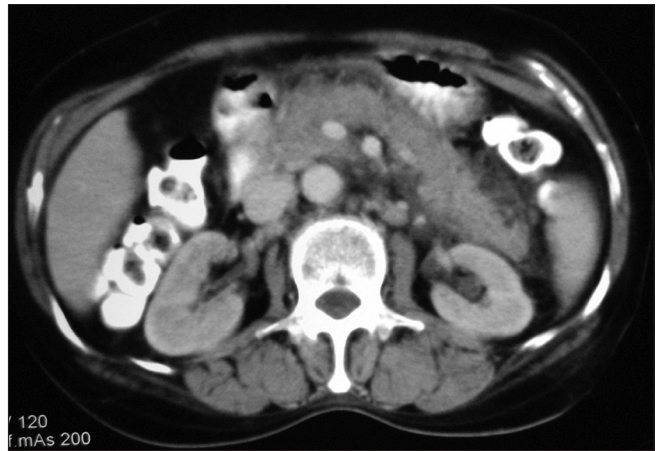


Figure 1: Contrast-enhanced computed tomography of abdomen showing enlarged pancreas with peripancreatic stranding



Figure 2: High resolution computed tomography chest showing bilateral diffuse nodular opacities

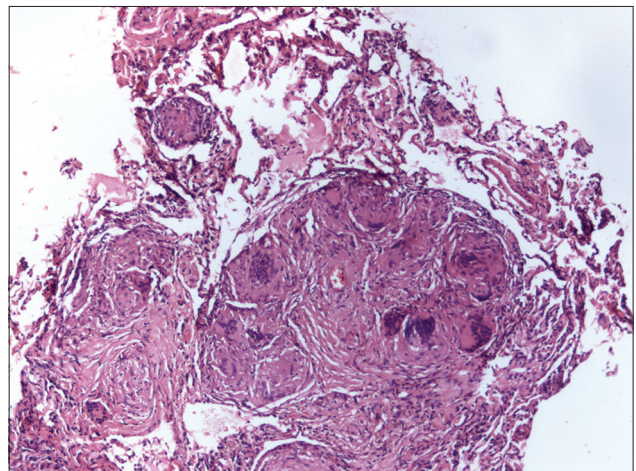


Figure 3: Lung biopsy showing multiple epithelioid cell granulomas with langhans type giant cells with accompanying fibrosis

granulomas. The case is presented as it highlights sarcoidosis as an uncommon etiology of acute pancreatitis especially in the setting of hypercalcemia. Also, it indicates that early recognition of sarcoidosis and consideration of pulmonary

sarcoidosis as a differential of tuberculosis may prevent the devastating and serious complications.

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