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CASE REPORT | PANCREAS

Eosinophilic Pancreatitis Diagnosed With Endoscopic Ultrasound

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Abstract

Eosinophilic pancreatitis (EP) is a rare clinical entity, and few cases have been reported. It usually presents on imaging as a pancreatic mass leading to common bile duct obstruction and jaundice. Since it can mimic a malignancy, eosinophilic pancreatitis is often diagnosed after "false positive" pancreatic resections. To our knowledge, we report the only known case of EP in which the diagnosis was made by fine needle aspiration and core biopsy of the pancreas during EUS, sparing the patient a surgical resection. After a steroid course, there was improvement of clinical symptoms.

Introduction

Eosinophilic pancreatitis (EP) is a rare clinical entity, and few cases have been reported.[1-13] In a retrospective study of pancreatic specimens collected over 18 years, less than 1% had increased eosinophils; of those 24 cases, only 3 were classified as eosinophilic pancreatitis.[10] It usually presents on imaging as a pancreatic mass leading to common bile duct obstruction and jaundice.[10,11,13] Since this can mimic a malignancy, eosinophilic pancreatitis is often diagnosed after "false positive" pancreatic resections.[2,3,5,12,14]

Case Report

A 39-year-old Indian man presented with epigastric pressure followed by pruritus, acholic stools, diarrhea, and icterus for 2 weeks. He denied fevers or chills, and was only taking a multivitamin and chamomile tea. There was no family history of pancreatic cancer. The patient never smoked or drank alcohol. Physical examination was only significant for scleral icterus. Laboratory studies were notable for AST 191 U/L, ALT 550 U/L, alkaline phosphatase 444 U/L, total bilirubin 12.9 mg/dL, direct bilirubin 11.3 mg/dL, lipase 351 U/L, and normal CA 19-9.

Abdominal ultrasound showed a hypoechoic lobular mass measuring 6.7 x 4.0 x 3.7 cm in the head of the pancreas, a 10-mm common bile duct, and a distended gallbladder. Contrast abdominal MRI/MRCP showed enlargement of the pancreatic head and uncinate process measuring 5.0 x 4.1 cm and a distended gallbladder (Figure 1). Coronal oblique maximum intensity projection (MIP) image of the biliary system showed occlusion of the common bile duct with tapering within the pancreatic head and occluded pancreatic duct (Figure 2). An endoscopic ultrasound (EUS) demonstrated a diffusely enlarged pancreas, especially in the head and neck, with a normal, non-dilated pancreatic duct measuring 1.6 mm; no focal mass lesion was appreciated (Figure 3). Core biopsy samples of the enlarged pancreatic head obtained using a 19-G EUS needle (Quick-Core, Cook Medical, Bloomington, IN) showed a significant eosinophilic infiltrate (Figure 4). Immunohistochemical stains for IgG and IgG4 were not supportive of autoimmune pancreatitis. There was not enough tissue in the biopsy specimen to perform flow cytometry. ERCP showed a 2-cm distal common bile duct stricture with upstream biliary dilation (Figure 5).

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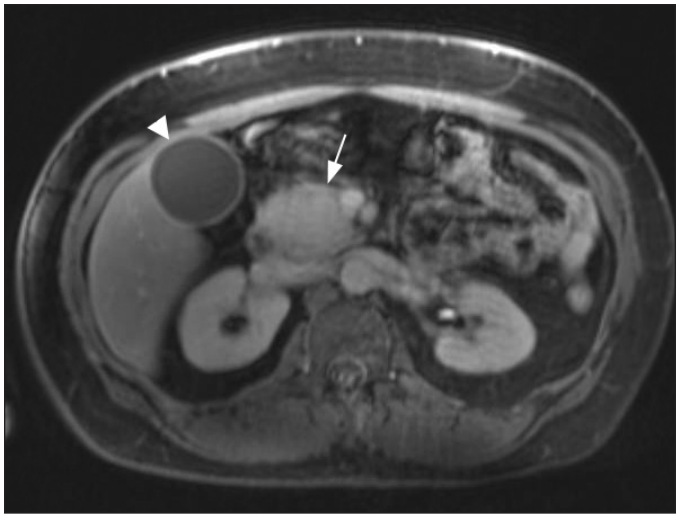

Figure 1. Contrast abdominal MRI/MRCP showed enlargement of the head and uncinate process portions of the pancreas measuring 5.0 x 4.1 cm (arrow) and a distended gallbladder (arrowhead).

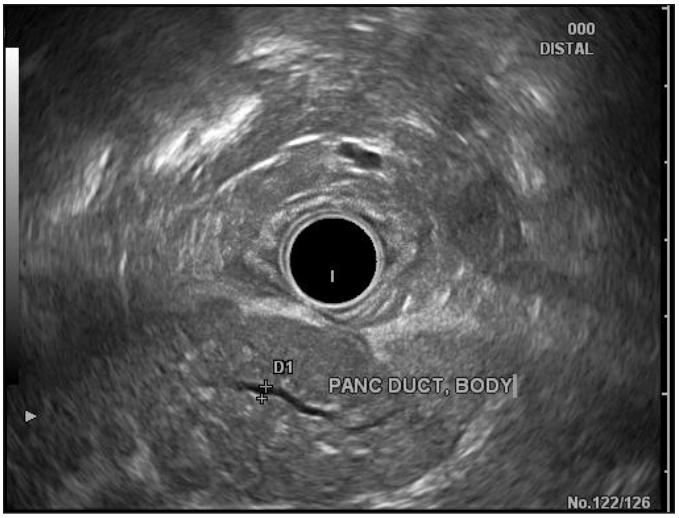

Figure 3. EUS demonstrating a diffusely enlarged pancreas, especially in the head and neck region, with normal, non-dilated pancreatic duct measuring 1.6 mm, and no focal mass lesion.

The patient underwent biliary sphincterotomy, and cytology brushings of the stricture were consistent with reactive ductal cells and were negative for malignancy. A temporary straight, plastic, 10-French biliary stent was placed across the stricture to allow biliary decompression. The patient had a white blood cell count of 7.7 x 10^9 cells/L with 0.9 x 10^9 eosinophils/L (normal: 0.1 to 0.5 x 10^9 eosinophils/L). The patient's IgE level was 135 U/mL (normal: <100 U/mL). The patient was started on oral steroids for presumed eosinophilic pancreatitis and had complete clinical improvement. MRCP 4 months later showed interval decrease in size of the pancreatic head mass to 4.2 x 3.3 cm with less compression on the descending portion of the duodenum (Figure 6). The gallbladder was no longer distended and the pancreatic duct was normal, suggesting that the common bile duct obstruction had improved. He has since tapered his steroids and had his biliary stent removed with resolution of his symptoms and labs. Esophageal biopsies showed normal esophageal mucosa without an increased amount of eosinophils.

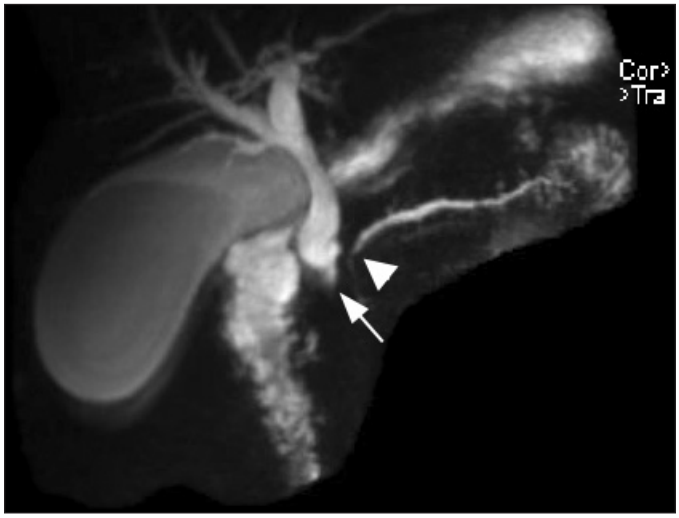

Figure 2. Coronal oblique MIP of the biliary system showed occlusion of the common bile duct within the pancreatic head with tapering (arrow) and occluded pancreatic duct (arrowhead).

Discussion

Many etiologies of eosinophilic pancreatitis have been posited in published case reports, including malignancy, parasitic infection, hypersensitivity response to medications such as carbamazepine, toxin injection, milk allergy, peri-insular eosinophilic infiltration associated with islet hypertrophy in infants of diabetic mothers, and as an entity associated with eosinophilic gastroenteritis or the idiopathic hypereosinophilic syndrome.[1,3,4,7,8] The cause of pancreatitis in our case remains unknown, but there was a symptomatic and radiographic response to a steroid course. Features that may suggest eosinophilic pancreatitis include systemic hypereosinophilia, gastroduodenitis with biopsies demonstrating eosinophilic gastroenteritis, elevated serum IgE, atopy, or asthma. Based on these factors, diagnosis could be confirmed with EUS-guided biopsy and obviate the need for surgery.[2] Our patient did not fit the typical illness script for pancreatic cancer; though he had painless jaundice, he was young and was otherwise well-appearing. Our initial suspicion was for autoimmune pancreatitis based on the diffusely enlarged pancreas without a focal lesion and no main pancreatic duct dilation, which prompted the fine needle aspiration and core biopsies. We suggest that it may be prudent to order a complete blood count with differential and IgE level in a patient with a suspected pancreatic mass but who does not fit the usual demographics for pancreatic cancer. If the eosinophil count or IgE level is elevated, a fine-needle aspiration during

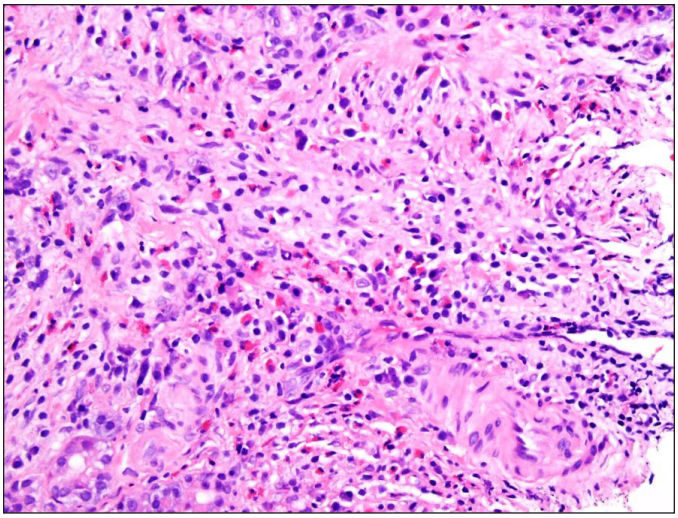

Figure 4. Core biopsy samples revealed a significant eosinophilic infiltrate.

EUS should be considered to rule out eosinophilic pancreatitis. Though a rare entity, enough cases are reported in the literature to consider this diagnosis to potentially avoid an unnecessary and potentially morbid surgery.

Disclosures

Author contributions: S. Kakodkar reviewed the literature, prepared the manuscript, and acquired the images. H. Omar and K. Chi prepared the manuscript and acquired the images. J. Cabrera acquired the images. K. Chi is the article guarantor.

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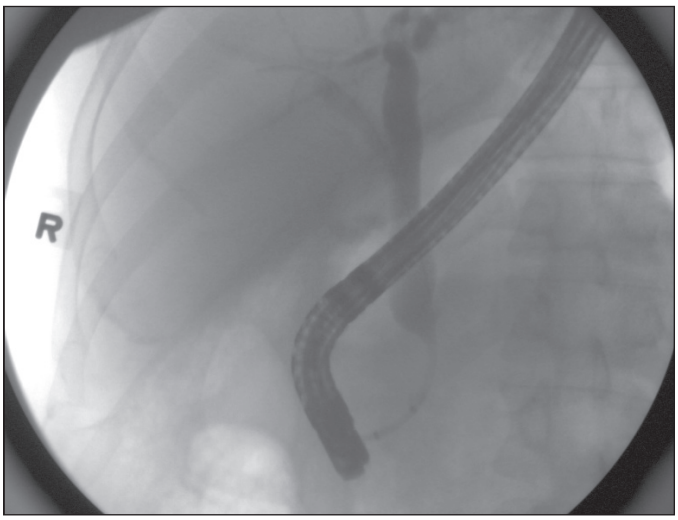

Figure 5. ERCP showed a 2-cm distal common bile duct stricture with upstream biliary dilation.

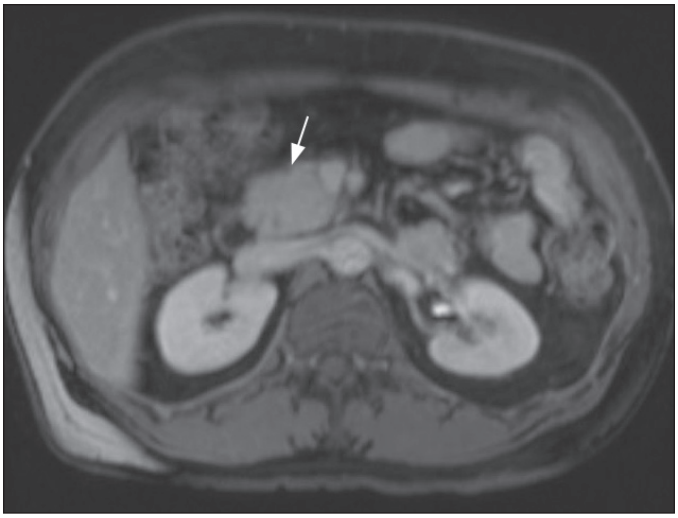

Figure 6. MRCP 4 months later showed interval decrease in size of the mass within head of pancreas to 4.2 x 3.3 cm (arrow), with less mass-effect on the descending portion of the duodenum.

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