Autoimmune pancreatitis presenting as a pancreatic mass mimicking malignancy

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ABSTRACT

Autoimmune pancreatitis is a rare cause of chronic pancreatitis and pancreatic mass. We describe a case of focal autoimmune pancreatitis in a 51-year-old man presenting with obstructive jaundice and pancreatic mass, mimicking malignancy. The immunological test was suggestive of autoimmune pancreatitis, and the patient responded well to a course of steroids, with complete resolution of the pancreatic mass. Autoimmune pancreatitis, therefore, must be kept in mind as a differential diagnosis of pancreatic mass. Recognition of this disease by its typical radiological and serological findings may help to avoid unnecessary surgical resection.

Keywords: autoimmune diseases, chronic pancreatitis, obstructive jaundice, pancreatic neoplasm, steroids

## INTRODUCTION

Autoimmune pancreatitis (AIP) is a form of chronic pancreatitis of presumed autoimmune aetiology.[1] It was first described by Yoshida et al in 1995.[2] The number of cases has since increased due to the increasing ability to diagnose it using immunological markers and the feasibility to biopsy the pancreas. Patients with AIP present with a variety of symptoms. We report a case of AIP presenting with obstructive jaundice with a pancreatic mass mimicking malignancy.

CASE REPORT

A 51-year-old Asian restaurateur was referred to our unit in March 2007. He had a two-week history of jaundice, itching, non-specific, right-sided mild abdominal discomfort, and had lost about 6 kg. Apart from a recent diagnosis of type 2 diabetes mellitus, he was otherwise fit and well. There was no previous history of jaundice and he possessed none of the risk factors for hepatitis. He had stopped drinking alcohol six years prior to this presentation. On examination, he was deeply jaundiced, but his other clinical examinations were unremarkable. There were no stigmata of chronic liver disease.
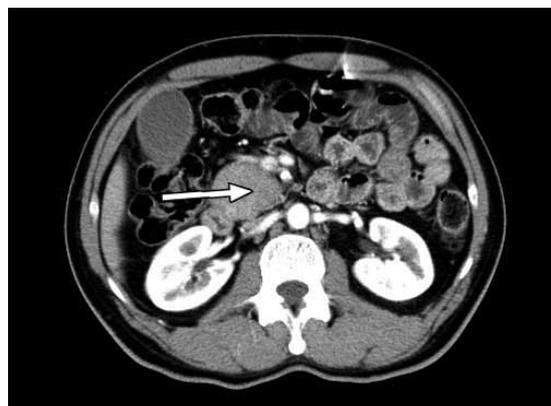
Fig. 1 CT image of the abdomen shows a pancreatic mass (arrow).

Blood test revealed a mixed hepatitic and obstructive picture (bilirubin 130 μmol/L, alkaline phosphatase 540 U/L, alanine transaminase 357 U/L, aspartate transaminase 123 U/L, γGT 1117 U/L). Liver synthetic functions were normal (albumin 40 g/dl and international normalised ratio 0.9). A full screening confirmed exclusion of infective, autoimmune and metabolic causes of liver disease. Ultrasonography and subsequent computed tomography (CT) of the abdomen revealed a large, solid enhancing mass lesion in the head of the pancreas measuring 6.0 cm × 4.0 cm × 4.6 cm, with involvement of the uncinate process. Mild intrahepatic biliary dilatation and a dilated common bile duct (CBD) of 1.5 cm were noted. The pancreatic duct appeared to be prominent (Fig. 1). A provisional diagnosis of pancreatic malignancy was made. Attempts at endoscopic retrograde cholangiopancreatography (ERCP) to decompress the biliary system were unsuccessful. As this presumed pancreatic malignancy was deemed unlikely to be resectable, percutaneous transhepatic cholangiogram and the placement of a metal biliary stent were undertaken to achieve biliary decompression. Subsequent endoscopic ultrasonography and fine needle aspiration did not yield enough tissue for a definitive diagnosis.

The patient remained reasonably well and his jaundice subsided after biliary stenting. Tumour markers were unremarkable; carbohydrate antigen 19.9 was 66 (normal < 33) ku/l, carcinoembryonic antigen was 2.2 (normal < 2.8) ug/l and alpha-foetoprotein was normal at 3 kiu/L. Autoantibodies and immunoglobulin were

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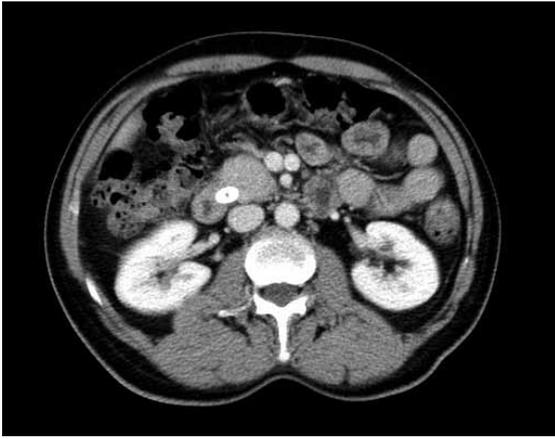Research Fellow

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Fig. 2 CT image shows a resolution of the pancreatic mass with steroid treatment.

normal, but IgG4 was three times above the upper limit of the normal range, raising the differential diagnosis of AIP. The patient was therefore started on a trial of steroid therapy with a tapering dose of oral prednisolone 30 mg with good effect. CT imaging done eight weeks after commencement of steroids revealed considerable reduction in the size of the pancreatic head mass. Follow-up CT imaging performed six months later revealed a normal-looking pancreas (Fig. 2). The patient managed to completely wean off prednisolone after a period of ten months. He remained well six months later. His glycaemic control deteriorated while on steroids, and insulin therapy was thus commenced. Post steroid therapy, the patient continued to require insulin, albeit at a lower dose.

DISCUSSION

Although AIP is a rare condition, it has become increasingly common in the past ten years. A nationwide survey conducted in Japan has found a prevalence is 0.82 per 100,000 population of Japanese individuals.[3] AIP is said to account for up to 27% of Whipple resections performed for suspected pancreatic adenocarcinoma in the past.[4] While AIP occurs in both genders, it is reported to be at least twice as common in men as in women. Most cases occur during late adulthood (age > 50 years).[5] Although most cases of AIP have been reported from Japan, it is evident that the disease also occurs in other populations.[6] Its common presenting symptoms are mild abdominal pain, jaundice and weight loss. Typical presentations of acute pancreatitis are very rare.[1] AIP is frequently associated with other autoimmune diseases such as rheumatoid arthritis, Sjögren's syndrome, inflammatory bowel disease and diabetes mellitus.[7] Extrapancreatic manifestations of AIP may also involve the lungs

and kidneys. Immunological abnormalities include hypergammaglobulinaemia, elevated serum IgG4 levels and the presence of autoantibodies.

IgG4 is a bispecific and functionally monovalent antibody. Although elevated serum IgG4 levels are associated with autoimmune pancreatitis, they may merely represent a secondary response to a yet unidentified primary trigger of the inflammatory process.[1] IgG4-negative AIP is a recognised entity, as the literature shows that approximately 20% of AIP patients have normal IgG4 levels.[8] Elevated IgG4 is also not entirely specific for AIP. 5% of pancreatic cancer patients exhibit slightly elevated levels of IgG4, where levels are generally less than two-fold of the upper limit of normal.[8] Therefore, the elevation of serum IgG4 to more than twice the upper limit of normal is highly suggestive, although not diagnostic, of AIP.

The classic appearance of diffuse AIP on abdominal CT is a sausage-shaped enlargement of the pancreas, with homogenous attenuation, moderate enhancement and a peripheral rim of hypoattenuation halo.[1] For focal pancreatic involvement, AIP often involves the head of the pancreas and typically appears as a low-attenuation or an iso-attenuation mass, as in our case. The finding of diffuse pancreatic ductal narrowing, if present, is said to be highly diagnostic of AIP.[9] On ERCP, irregular pancreatic duct narrowing and CBD strictures may be seen. Endoscopic ultrasonography provides the opportunity for fine needle aspiration, but does not have pathognomonic findings on its own. Magnetic resonance cholangiopancreatography demonstrates biliary strictures but does not adequately show the pancreatic duct narrowing. Histological changes in AIP show predominantly periductal inflammation consisting of a dense interstitial lymphoplasmacytic infiltrate, thus causing duct obstruction with acinar tissue fibrosis.[10]

The original diagnostic criteria proposed by the Japan Pancreas Society requires the presence of characteristic imaging features together with either serological or histological evidence.[11] Chari et al subsequently proposed the HISORt criteria, which relies on histology, imaging, serology, other organ involvement and response to steroids.[12] In this set of diagnostic criteria, the diagnosis of AIP is made using one or more positive criteria on: (a) diagnostic histology; (b) characteristic imaging with elevated serum IgG4 level; or (c) response to steroids. Steroids are the first choice of therapy in patients with AIP.[13] The usual recommendation is an initial dose of 30–40 mg/day for 1–2 months and the dose is tapered by 5 mg every 2–4

weeks.[14] Some authors recommend a long-term steroid maintenance therapy.[15] The response to steroid therapy is usually dramatic. Imaging studies have demonstrated that improvement can be observed within 1–2 months.[16] Laboratory parameters of AIP also improve during or after steroid therapy; antibodies become undetectable, and hypergammaglobulinaemia and IgG4 levels decrease. Nearly 50% of AIP patients suffer a relapse post treatment or fail to wean off steroids. Azathioprine seems to be effective in this group of patients.[17] There is evidence to suggest that pancreatic endocrine and exocrine dysfunctions, which are frequently associated with AIP, can sometimes improve or even resolve during/after steroid therapy.[18] Prior to steroid therapy, patients with jaundice should be considered for biliary drainage, especially if the presence of bacterial infection is evident.

In summary, AIP is an immune-based systemic disease that can be diagnosed using a combination of histological and/or imaging plus serological criteria. It can mimic pancreatic malignancy when presenting as a pancreatic mass, thus causing biliary tract obstruction. This disease is responsive to immunosuppressive therapy. AIP as a differential diagnosis of a pancreatic mass should be borne in mind so as to avoid unnecessary major surgery.

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