Case Report

Autoimmune pancreatitis mimicking pancreatic cancer

Mohamed Hammami[1], Faouzi Noomen[1], Omar Toumi[1], Olfa Harzallah[2], Ammar Mahmoudi[1], Wassim Kallel[1], Khadija Zouari[1], Abdelaziz Hamdi[1]

Departments of General Surgery[1] and Internal Medicine[2], Fattouma Bourguiba Hospital, Monastir 5000, Tunisia.

Citation: Hammami M, Noomen F, Toumi O, Harzallah O, Mahmoudi A, Kallel W, Zouari K, Hamdi A. Autoimmune pancreatitis mimicking pancreatic cancer. **North Am J Med Sci** 2011; 3: 520-523.
doi: 10.4297/najms.2011.3520

Abstract

Context: Autoimmune pancreatitis is a particular type of pancreatitis of presumed autoimmune etiology, it is an entity distinct from all others forms of chronic pancreatitis, characterized by clinical, histopathological, radiographic, serologic and therapeutic features. This benign disease resembles pancreatic carcinoma both clinically and radiographically. **Case Report:** A 27-year-old man presented with obstructive jaundice and evocative image of pancreatic tumor. A pancreaticoduodenectomy (Whipple operation) was performed and pathological examination of the specimen diagnosed AIP. Patient responded well to a course of corticosteroids with resolution of clinical and biological disorders. **Conclusion:** Accurate and timely diagnosis of autoimmune pancreatitis is particularly important because steroid therapy is effective and pancreatic resection is not necessary.

Keywords: Autoimmune diseases, chronic pancreatitis, obstructive jaundice, pancreatic neoplasm, steroids.

Correspondence to: Mohamed Hammami, Department of General Surgery, Fattouma Bourguiba Hospital, Monastir 5000, Tunisia. Tel.: 0021697239167, Email: hammami.chirurgie@yahoo.fr

Introduction

Autoimmune pancreatitis (AIP) is a particular type of pancreatitis of presumed autoimmune aetiology, characterized by swelling of the pancreas, narrowing of the main pancreatic duct, elevation of serum immunoglobulin G (IgG), presence of autoantibody, lymphoplasmacytic infiltration and dense fibrosis on histopathology [1-3]. It was first described by Yoshida et al in 1995 [4]. 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. Autoimmune pancreatitis can mimic pancreatic adenocarcinoma clinically and radiographically.

We report a case of AIP presenting with obstructive jaundice with a pancreatic mass mimicking malignancy.

Case Report

A 27-year-old man presented with a two-week history of mild epigastric and right-sided abdominal discomfort associated with progressive jaundice. He had no history of alcohol abuse or other predisposing factors for chronic pancreatitis. On examination, he was deeply jaundiced but his other clinical examinations were unremarkable. There were no stigmata of chronic liver disease.

Laboratory examination showed aspartate aminotransferase (AST) 133 IU/L, alanine aminotransferase (ALT) 282 IU/L, alkaline phosphatase (ALP) 766 IU/L, γ-glutamyl transpeptidase (GGT) 423 IU/L, bilirubin 89 µmol/L, Tumor marker values: CA19-9= 433 U/ml (N < 33), CEA = 2,38 mg/ml (N < 2,5) and absence of antinuclear antibody (ANA).

Ultrasonography and subsequent Computed tomography (CT) of the abdomen showed a diffusely enlarged pancreas with a so-called "sausage-like" appearance as well as enhancement of the pancreas in the portal phase. No pancreatic calcification and intraductal stones were observed. Mild intra-hepatic bilary dilatation and dilated common bile duct (CBD) of 13mm were noted (Figure 1). Magnetic resonance cholangiopancreatography (MRCP) indicated important intrahepatic biliary dilatation and a saccular dilatation of the common bile duct (Figure 2). The pancreatic duct appeared to be normal.

A provisional diagnosis of pancreatic malignancy was made. Exploratory laparotomy revealed a swollen pancreas with a palpable mass in the pancreatic head. The mass was resectable and a pancreaticoduodenectomy (Whipple operation) was performed. Postoperative period was uneventful. Histopathological examination of the resected specimen showed chronic pancreatitis with lymphoplasmacytic infiltration raising the diagnosis of AIP. The patient was therefore started on a trial of steroid therapy with a tapering dose of oral prednisone 40 mg/day with good effect. After 3 weeks of treatment, his biochemical indices returned to normal and the symptom of jaundice disappeared as well. The patient managed to completely wean off prednisone after a period of ten months.

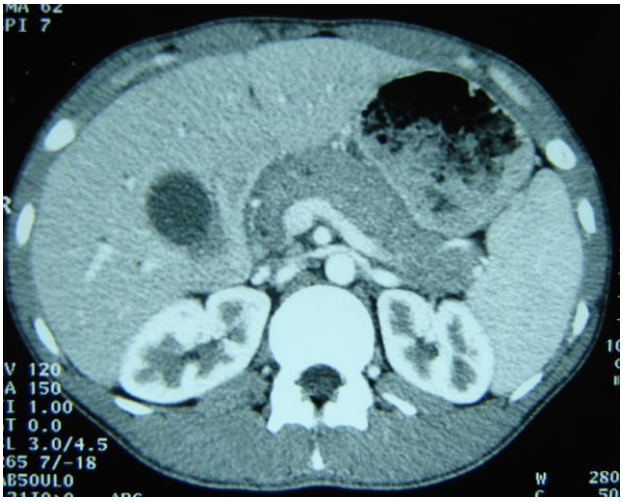

Fig. 1 Pancreatic phase contrast-enhanced axial CT image shows diffuse enlargement and loss of lobulation of pancreas surrounded by capsule-like rim of low-attenuation soft tissue

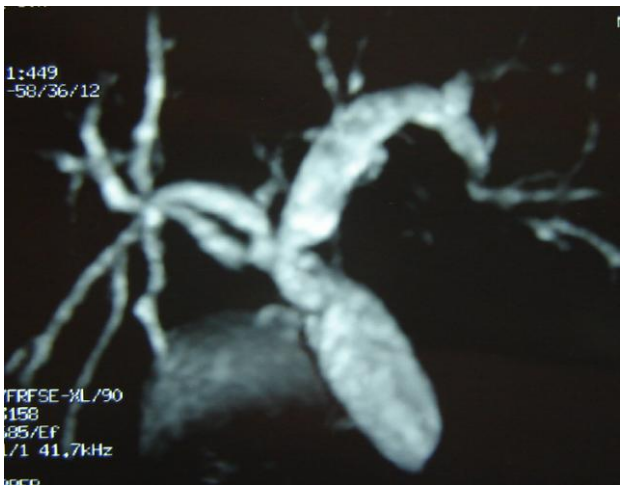

Fig 2 MRCP showing important intrahepatic biliary dilatation (more pronounced on the left) and a saccular dilatation of the common bile duct.

Discussion

Autoimmune pancreatitis, first described by Sarles et al in 1961 [5] as “primary inflammatory sclerosis” of the pancreas, was later understood to be a distinctive subtype of chronic pancreatitis caused by autoimmune inflammatory processes with heavy lymphocyte infiltration and fibrosis that result in organ dysfunction. At present, increasing numbers of AIP patients have been diagnosed and it is recognized as a worldwide entity with specific clinical, histopathologic, radiographic, and serologic features [6].

AIP is said to account for up to 27% of Whipple resections performed for suspected pancreatic adenocarcinoma in the past [7]. The exact incidence of AIP is still unknown, three case series have shown a prevalence rate of 5%-6% for chronic pancreatitis [8-10]. Autoimmune pancreatitis appears to be a disease of the elderly, as most patients are more than 50 years old at diagnosis. Twice as many men as women are affected [7, 11]. Many patients have no history of alcohol abuse or other traditional risk factors for chronic pancreatitis. A wide range of symptoms are reported by patients at the clinical onset of the disease. They commonly include intermittent or progressive jaundice, mild epigastric pain or discomfort, and weight loss. Typical presentations of acute pancreatitis are very rare [11-14]. AIP is frequently associated with other autoimmune diseases including sclerosing cholangitis, primary biliary cirrhosis, inflammatory bowel disease, rheumatoid arthritis, hypothyroidism, sarcoidosis, Sjogren's syndrome and diabetes mellitus. In addition, autoimmune pancreatitis has been seen in association with retroperitoneal fibrosis and lung nodules [7, 11, 15].

Typical immunological abnormalities in autoimmune pancreatitis are increased levels of serum gamma-globulin, IgG, or IgG4, and the presence of autoantibodies including antinuclear antibody (ANA), anti–smooth muscle antibody (ASMA), rheumatoid factor, antilactoferrin antibody and anticarbonic anhydrase antibody-II. Serum IgG4 is considered the most sensitive and specific marker and is elevated in 63% to 94% of patients with autoimmune pancreatitis [6, 7, 12].

Imaging evaluation plays a critical role in the diagnosis of AIP. The features of CT imaging include: (1) diffuse swelling of the pancreas, which is referred to as a "sausage-like" or "bulky" appearance; (2) a capsule-like smooth rim of low density surrounding the pancreas, which appears to be a characteristic of autoimmune pancreatitis; (3) absence of pancreatic calcification and intraductal stones; and (4) delayed enhancement of pancreatic parenchyma. On endoscopic retrograde cholangiopancreatography irregular pancreatic duct narrowing and common bile duct strictures may be seen. Magnetic resonance cholangiopancreatography, a non-invasive imaging technique demonstrates biliary strictures but does not adequately show the pancreatic duct [6, 16, 17]. Some have proposed using endoscopic ultrasonography to guide biopsy in cases of suspected autoimmune pancreatitis [12]. Fine-needle aspiration biopsy, guided by endoscopic ultrasonography, is frequently used to rule out adenocarcinoma [18, 19].

Histologic evaluation remains the gold standard for diagnosis, it shows predominantly periductal inflammation consisting of a dense interstitial lymphoplasmacytic infiltrate, thus causing duct obstruction with acinar tissue fibrosis. In addition, ductal dilatation, calcifications and proteinaceous plugs are absent [6]. Biopsy of extrapancreatic sites, including the bile ducts and major duodenal papilla, may also facilitate the diagnosis [12, 20].

Data have suggested that a swollen duodenal papilla with positivity for IgG4 immunostaining was useful in both the diagnosis [21] and prognosis of AIP.

It is imperative to differentiate autoimmune pancreatitis from pancreatic cancer owing to the vastly different prognostic and therapeutic implications. In a series of autoimmune pancreatitis from the United Kingdom, the majority of patients (73%) were referred with suspected pancreatic malignancy on cross sectional imaging [22]. In a Korean study of 67 patients, 12 patients underwent surgery due to a diagnosis of pancreatic carcinoma [23]. Because of this difficulty, several types of diagnostic criteria have been proposed [9, 24-26]. For practical purposes, the revised Japanese and Kim's criteria are more useful as they focus on imaging studies together with either serological or histological evidence [1].

With these diagnostic criteria a patient who meets criterion 1 and any of criteria 2-5 can be diagnosed as having AIP: (1) imaging criteria: diffuse enlargement of the pancreas and diffuse or segmental irregular narrowing of the main pancreatic duct (essential); (2) laboratory criteria: elevated levels of IgG and/or IgG4, or the presence of autoantibodies; (3) histopathologic criteria: fibrosis and lymphoplasmocytic infiltration; (4) association with other autoimmune diseases; and (5) response to steroid therapy.

Steroids are the first choice of therapy in patients with AIP. Prednisone is usually initiated at a dose of 0.4-0.6 mg/kg per day for a period of months. Most patients are usually treated for 2-3 months, with a tapering schedule of 5 mg every 2-4 weeks [6, 11]. Some authors recommend a long-term steroid maintenance therapy [7]. The response to steroid therapy is usually dramatic. It is defined as improvement in clinical symptoms (decreased jaundice, abdominal and back pain), negative conversion of detected autoantibodies, normalization of elevated levels of IgG and reversal of abnormal pancreatic imaging [11, 27]. 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 [7]. Pancreatic endocrine and exocrine dysfunctions, which are frequently associated with AIP, can sometimes improve or even resolve during/after steroid therapy [28].

Conclusion

Autoimmune pancreatitis represents a recently described subset of chronic pancreatitis. Although it is characterized by clinical, histopathological, radiographic and serologic features, the diagnosis still remains difficult. It can mimic pancreatic malignancy when presenting as a pancreatic mass, thus causing biliary tract obstruction.

Early diagnosis of this potentially treatable disease is important because response to steroids is dramatic, and unnecessary surgical intervention with its attendant morbidity can be avoided.

References

1. Lin LF, Huang PT, Ho KS, Tung JN. Autoimmune chronic pancreatitis. J Chin Med Assoc 2008; 71: 14-22.
2. Okazaki K, Uchida K, Matsushita M, Takaoka M. Autoimmune pancreatitis. Intern Med 2005; 44: 1215-1223.
3. Pickartz T, Mayerle J, Lerch MM. Autoimmune pancreatitis. Nat Clin Pract Gastroenterol Hepatol 2007; 4: 314-323.
4. Yoshida K, Toki F, Takeuchi T, Watanabe S, Shiratori K, Hayashi N. Chronic pancreatitis caused by an autoimmune abnormality. Proposal of the concept of autoimmune pancreatitis. Dig Dis Sci 1995; 40: 1561-1568.
5. Sarles H, Sarles JC, Muratore R, Guien C. Chronic inflammatory sclerosis of the pancreas: an autonomous pancreatic disease? Am J Dig Dis 1961; 6: 688–698.
6. Qin-Song S, Da-Zhi C, Ren L, Qiang H, Dong-Dong H, Fei P, Ping L, Zhao-Wei Q. Autoimmune pancreatitis: report of two cases and literature review Hepatobiliary Pancreat Dis Int 2009; 8: 653-656.
7. Lo RSC, Singh RK, Austin AS, Freeman JG. Autoimmune pancreatitis presenting as a pancreatic mass mimicking malignancy. Singapore Med J 2011; 52(4): e79-e81.
8. Song Y, Liu QD, Zhou NX, Zhang WZ, Wang DJ. Diagnosis and management of autoimmune pancreatitis: experience from China. World J Gastroenterol 2008;14:601-606.
9. Pearson RK, Longnecker DS, Chari ST, Smyrk TC, Okazaki K, Frulloni L, et al. Controversies in clinical pancreatology: autoimmune pancreatitis: does it exist? Pancreas 2003;27:1-13.
10. Okazaki K. Autoimmune pancreatitis: etiology, pathogenesis, clinical findings and treatment. The Japanese experience. JOP 2005;6:89-96.
11. Fan BG, Andrén-Sandberg Å. Autoimmune pancreatitis. North Am J Med Sci 2009; 1: 148-151.
12. Law R, Bronner DM, Vogt D, Stevens T. Autoimmune pancreatitis: A mimic of pancreatic cancer. Cleveland Clinic Journal Of Medicine. 2009; 76 (10): 607-615.
13. Kallel L, Naija N, Boubaker J, Filali A. Autoimmune pancreatitis: A systematic review. La Tunisie Medicale 2011; 89 (3): 221-230.
14. Frulloni L, Amodio A, Katsotourchi AM, Vantini I. A practical approach to the diagnosis of autoimmune pancreatitis. World J Gastroenterol 2011; 17(16): 2076-2079.
15. Lévy P, Hammel P, Ruszniewski P. Pancréatite

auto-immune. Presse Med. 2007; 36: 1925-1934.
16. Noor MT, Lal A, Kochhar R, et al. Autoimmune Pancreatitis: A Report from India. J Pancreas 2010; 11(3): 213-219.
17. Bodily KD, Takahashi N, Fletcher JG, et al. Autoimmune Pancreatitis: Pancreatic and Extrapancreatic Imaging Findings. AJR 2009; 192: 431-437.
18. Buscarini E, De Lisi S, Arcidiacono PG, et al. Endoscopic ultrasonography findings in autoimmune pancreatitis. World J Gastroenterol 2011; 17(16): 2080-2085.
19. Kamisawa T, Anjiki H, Takuma K, Egawa N, Itoi T, Itokawa F. Endoscopic approach for diagnosing autoimmune pancreatitis. World J Gastrointest Endosc 2010; 2(1): 20-24.
20. Kubota K, Nakajima A. The therapeutic strategy for autoimmune pancreatitis is subject to the endoscopic features of the duodenal papilla. Ther Adv Gastroenterol 2010; 3(6): 383-395.
21. Kamisawa T, Yuyang T, Nakajima H, Tsuruta K, Okamoto A. Usefulness of biopsying the major duodenal papilla to diagnose autoimmune pancreatitis: a prospective study using IgG4-immunostaining. World J Gastroentorol 2006; 12: 2031-2033.
22. Church NI, Pereira SP, Deheragoda MG, et al. Autoimmune pancreatitis: clinical and radiological features and objective response to steroid therapy in a UK series. Am J Gastroenterol 2007; 102:2417-2425.
23. Ryu JK, Chung JB, Park SW, et al. Review of 67 patients with autoimmune pancreatitis in Korea: a multicenter nationwide study. Pancreas 2008; 37: 377-385.
24. Kim KP, Kim MH, Kim JC, Lee SS, Seo DW, Lee SK. Diagnostic criteria for autoimmune chronic pancreatitis revisited. World J Gastroenterol 2006 ;12 : 2487-2496.
25. Okazaki K, Kawa S, Kamisawa T, et al. Clinical diagnostic criteria of autoimmune pancreatitis: revised proposal. J Gastroenterol 2006;41:626-631.
26. Chari ST, Smyrk TC, Levy MJ, et al. Diagnosis of autoimmune pancreatitis: the Mayo Clinic experience. Clin Gastroenterol Hepatol 2006;4:1010-1016.
27. Frinkelberg DL, Fernandez–del Castillo C. Autoimmune Pancreatitis: Disease Evolution, Staging, Response Assessment, and CT Features That Predict Response to Corticosteroid Therapy. Radiology 2009; 250 (1): 118-129.
28. Kamisawa T, Egawa N, Inokuma S, et al. Pancreatic endocrine and exocrine function and salivary gland function in autoimmune pancreatitis before and after steroid therapy. Pancreas 2003; 27:235-238.