CASE REPORT

Autoimmune Pancreatitis Mimicking Cholangiocarcinoma/Pancreatic Cancer Presenting As Painless Jaundice and Porta Hepatis Adenopathy: A Case Report

GLiu-An Zhongying*, Manners Christopher, Ginzberg Dina, Zhu Hongfa, Ligresti Rosario, Arad Danit

Department of medicine, Hackensack University Medical Center, United States

ABSTRACT

Autoimmune pancreatitis (AIP) is a rare and unique cause of obstructive jaundice in adults. Due to overlapping symptomatology, clinical presentation, and laboratory findings with malignant pathologies such as cholangiocarcinoma or pancreatic cancer, it is important to consider AIP in the differential diagnosis of new-onset obstructive jaundice. To underscore this, we present a case of obstructive jaundice resulting from isolated porta-hepatis adenopathy secondary to autoimmune pancreatitis in a previously healthy 62-year-old male.

INTRODUCTION

Autoimmune pancreatitis (AIP) is a form of non-alcoholic pancreatitis driven by chronic inflammation, characterized by prominent lymphocyte infiltration and pancreatic fibrosis, ultimately leading to organ dysfunction. [1] Accounting for 2% of all chronic pancreatitis cases, AIP is classified into two subtypes with differing demographics and systemic involvement. Type 1 AIP typically affects older males in their 60s to 70s and is associated with systemic manifestations involving multiple organ systems. It is characterized by high serum immunoglobulin G-4 (IgG-4) concentrations (usually exceeding twice the upper limit of normal) and IgG-4-bearing plasma-cell infiltration of the pancreas, superimposed on a background of lymphoplasmacytic sclerosing pancreatitis. In contrast, Type 2 AIP lacks systemic involvement and IgG-4 positivity, and is characterized by granulocytic epithelial lesions in the pancreatic duct. It predominantly affects younger patients of both genders and has a high correlation with inflammatory bowel disease [2].

Clinical features of AIP include jaundice, epigastric abdominal pain, fatigue, unintentional weight loss, loss of appetite, nausea, vomiting, dark urine, pale stool, and occasionally insulin resistance due to destruction of insulin-secreting islet cells. Painless jaundice and mass lesion on imaging are the most common presenting symptoms of AIP.

The overlap in symptomatology, imaging, and laboratory findings makes it challenging to differentiate AIP from biliary and pancreatic malignancies. The International Consensus Diagnostic Criteria (ICDC) for AIP, established in 2011, provides an algorithmic definition based on a combination of imaging, histologic, and serologic findings. Together with the 2011 Japan Pancreas Society guidelines, these criteria offer the highest accuracy in diagnosing AIP.[3,4] Key criteria include pancreatic and ductal imaging, serology, histopathology of the pancreas, and responsiveness to steroid therapy, all of which are crucial in distinguishing AIP from pancreatic cancer [5].

This report describes an atypical presentation of autoimmune pancreatitis, where porta hepatis adenopathy resulted in common bile duct obstruction and painless jaundice initially suspected as pancreatic malignancy. It underscores the importance of making a prompt and accurate diagnosis to differentiate this unusual presentation of AIP from pancreatic malignancy, cholangiocarcinoma, or abdominal lymphoma.

CASE REPORT

In July 2022, a 62-year-old male with a medical history of diabetes mellitus type II, hypertension, hyperlipidemia, and asthma presented to the emergency room with a three-week history of fatigue, jaundice, and indigestion. He reported concomitant weight loss of 20 pounds without associated anorexia, and denied fever or night sweats. His social history included a 20-pack-year smoking history,

Received 17-Mar-2024 Manuscript No IPP-24-19224**Editor Assigned** 19-Mar-2024 PreQC No IPP-24-19224(PQ) **Reviewed** 6-Apr-2024 QC No IPP-24-19224 **Revised** 15-Apr-2024 Manuscript No IPP-24-19224(R) **Published** 22-Apr-2024 DOI 10.35841/1590-8577-25.2.853

Corresponding Author Zhongying Liu-An,
Department of medicine,
Hackensack University Medical Center,
United States
E-mail zhongying.liuan@hmhn.org

Citation: Zhongying L, Christopher M, Dina G, Hongfa Z, Rosario L, Danit A. Autoimmune Pancreatitis Mimicking Cholangiocarcinoma/Pancreatic Cancer Presenting As Painless Jaundice and Porta Hepatis Adenopathy: A Case Report. JOP. J Pancreas. (2024) 25:853.

with no notable alcohol use. There was no significant family history of autoimmune diseases or cancers, and the patient had no personal history of autoimmune diseases. On initial physical examination, scleral icterus, jaundice, and slight tenderness in the right upper quadrant were noted, along with a soft abdomen and negative Murphy's sign. Initial laboratory testing revealed a mixed cholestatic and hepatocellular pattern of injury, with a serum alkaline phosphatase of 1,917 U/L (ref. 40-150 U/L), total bilirubin of 10.1 mg/dL (ref. 0.2-1.2 mg/dL), direct bilirubin of 7.3 mg/dL (ref. 0.0-0.5 mg/dL), aspartate transaminase of 550 U/L (ref. 5-34 U/L), and alanine transaminase of 749 U/L (ref. 0-55 U/L). Lipase was elevated to 180 U/L (ref. 8-78 U/L). Serum CA 19-9 was 24 U/mL (ref. <34 U/mL) and alpha-fetoprotein (AFP) was 3.9 ng/mL (ref. <6.1 ng/mL). Hepatitis serologies and serum lymphoma panel returned negative.

Right upper quadrant ultrasound showed a normal-appearing gallbladder with minimal sludge, nonspecific gallbladder wall thickening, absent pericholecystic fluid, and prominent intrahepatic biliary duct dilatation with a common hepatic duct size of 15.4 mm. A CT of the abdomen and pelvis with contrast evidenced a normal-appearing liver and pancreas with pronounced common bile duct (CBD) dilation to 1.7 cm with abrupt termination of the distal CBD **(Figure 1)**. The patient underwent endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasound (EUS) on hospital day 2, which demonstrated a 2.4 cm hypoechoic mass causing distal duct obstruction and compression of the superior mesenteric vein with portal collateralization, diffusely heterogeneous pancreatic enhancement, hypoechoic porta hepatis adenopathy and pancreatic duct (PD) dilation to 4 mm **(Figures 2 and 3)**. Fine needle biopsy (FNB) of the two largest porta hepatis lymph nodes and stenting of the PD and CBD were performed for diagnosis and decompression.

FNB sampling, as illustrated in **(Figure 4)**, revealed diffuse mixed inflammatory infiltrate with lymphocytes, plasma cells, and eosinophils and associated "storiform fibrosis" and atrophy - compatible with a diagnosis of autoimmune pancreatitis. As shown in **(Figure 5)**, CD138 staining showed abundant plasma cells with high-number of IgG-4 positive cells - with an exact number hard to determine due to high background. In light of these findings and the high suspicion for AIP, the patient was started on a course of oral steroids and close endoscopic follow-up. Serum IgG-4 levels obtained on subsequent follow-up were elevated at 667, and were shown to have decreased to 343.2 with the steroid treatment months later.

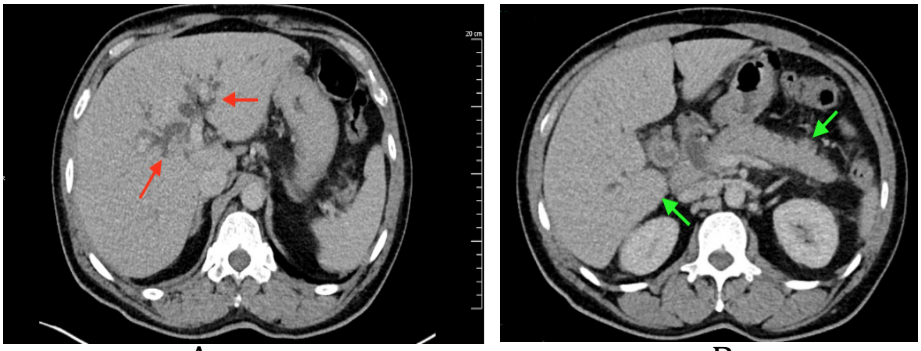

Figure 1. CT abdomen and pelvis findings.

A: extensive intrahepatic and trabeculated bile duct dilatation with CBD measuring up to 1.7 cm (red arrows). B: normal appearing pancreas and liver (green arrows), atypical for AIP.

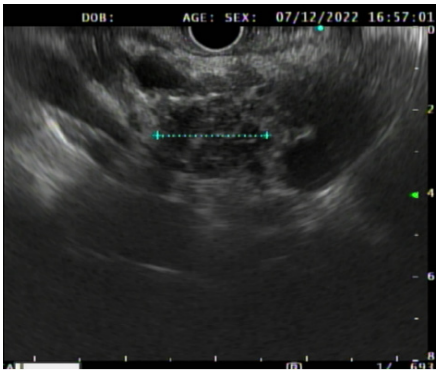

Figure 2. EUS imaging shows CBD dilated to 1.7 cm due to distal obstruction from a 2.4 cm hypoechoic mass in the porta hepatis - representing the area of matted adenopathy.

Citation: Zhongying L, Christopher M, Dina G, Hongfa Z, Rosario L, Danit A. Autoimmune Pancreatitis Mimicking Cholangiocarcinoma/Pancreatic Cancer Presenting As Painless Jaundice and Porta Hepatis Adenopathy: A Case Report. JOP. J Pancreas. (2024) 25:853.

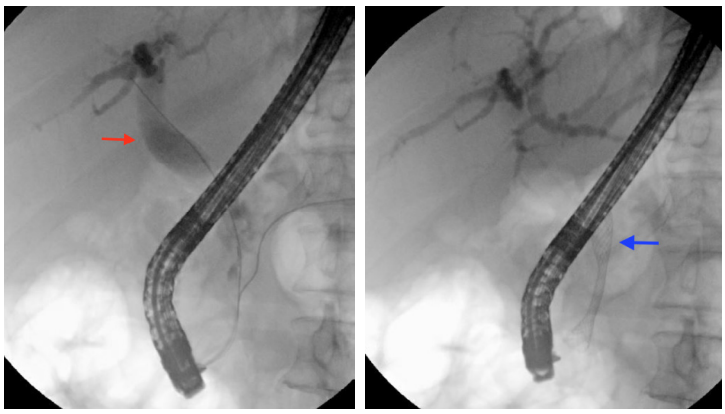

Figure 3. ERCP shows CBD dilation and CBD stenting.
A: CBD dilation (red arrow). B: CBD stented using 10 x 40 mm covered Wallflex (blue arrow).

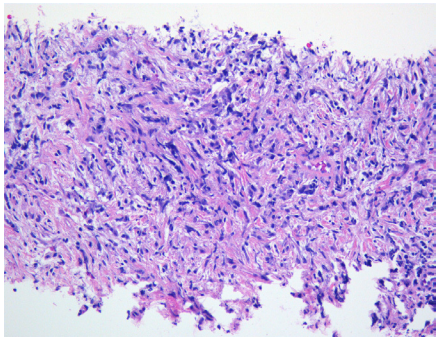

Figure 4. Hematoxylin & Eosin stained slide shows diffuse lymphoplasmacytic infiltrate with storiform fibrosis, suggestive of AIP extending to the peripancreatic soft tissue.

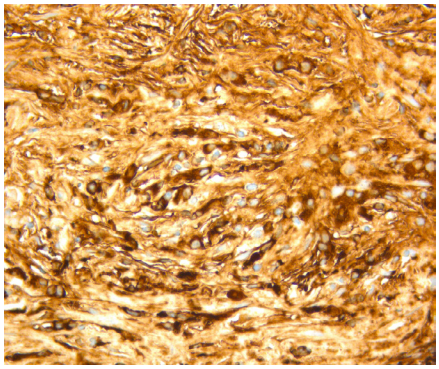

Figure 5. IgG-4 immunostaining of the mass, showing IgG-4 positive plasma cells.

DISCUSSION

The ICDC uses five cardinal features to diagnose AIP: imaging of pancreatic parenchyma and duct, serology, other organ involvement, pancreatic histology, and an optional criterion of response to steroid therapy.[3,6] According to the ICDC criteria, AIP can be classified into type 1 and type 2. Type 1 AIP predominates in elderly men and typically presents with obstructive jaundice and minimal abdominal pain, accompanied by elevated IgG and IgG-4 levels. Conversely, Type 2 AIP affects younger individuals in their 40s, with no gender bias, IgG/IgG-4 elevation, or systemic involvement.

AIP can be classified into two main types based on radiologic imaging features: diffuse and focal. While the diffuse type is more prevalent, characterized by pancreatic enlargement either diffusely or focally, focal AIP is less common. In focal AIP, patients exhibit mass-like enlargement of the pancreas, observed in 18-40% of cases. Although any portion of the pancreas can be affected, involvement of the pancreatic head is more frequent **[7, 8]**.

Only a few cases have been reported of AIP with a focal mass **[9, 10]**. Our case presents an instance where focal AIP with a discrete mass did not exhibit typical findings on endoscopic ultrasound (EUS), endoscopic

Citation: Zhongying L, Christopher M, Dina G, Hongfa Z, Rosario L, Danit A. Autoimmune Pancreatitis Mimicking Cholangiocarcinoma/Pancreatic Cancer Presenting As Painless Jaundice and Porta Hepatis Adenopathy: A Case Report. JOP. J Pancreas. (2024) 25:853.

retrograde cholangiopancreatography (ERCP), and computed tomography (CT) scans. It clinically mimicked a neoplasm. Clinically, the mass mimicked a neoplasm. One characteristic finding of ERCP in AIP is diffuse or segmental narrowing of the main pancreatic duct, which was absent in our patient's imaging. Instead, EUS/ERCP revealed common bile duct dilation to 1.7 cm, attributed to distal duct obstruction from a 2.4 cm hypoechoic mass within a matted lymph node mass in the porta hepatis, rather than originating from the pancreas itself. This mass posed diagnostic challenges as it was indistinguishable from cholangiocarcinoma without further workup. Additionally, a capsule-like rim around the pancreas, highly specific for AIP, was not observed. In a study by Dong et. al, common bile duct dilationwas found to be more common in pancreatic cancer than in AIP **[11]**. Our patient's CT scan revealed extensive intrahepatic and trabeculated dilation with common bile duct dilation up to 1.7 cm, despite an otherwise normal liver and an unremarkable pancreas.

The focal type of AIP can be challenging to differentiate from pancreatic cancer or cholangiocarcinoma due to shared clinical features, such as elderly male patients presenting with painless obstructive jaundice, new-onset diabetes mellitus, and elevated levels of serum tumor markers **[12]** Our patient presented with a clinical profile closely resembling that of pancreatic cancer or cholangiocarcinoma: a male in his 60s experiencing painless jaundice and weight loss. Both his clinical presentation and imaging findings initially suggested these malignancies. IgG-4 levels play a crucial role in diagnosing AIP. While they are normal in 20% of AIP type 1 patients and elevated in 10% of pancreatic cancers, a study by Hamano et al. found that IgG-4 levels were significantly and specifically elevated in patients with AIP **[13, 14]**. Although IgG-4 levels are not a specific diagnostic tool, a cutoff value greater than 135 has shown a sensitivity of 95% and specificity of 97% in diagnosing AIP. Our patient had an IgG-4 level of 667. Additionally, the patient's AFP and CA 19-9 tumor markers were both within normal limits.

Histology serves as the gold standard in diagnosing AIP and distinguishing it from pancreatic cancer or cholangiocarcinoma. Endoscopic ultrasound-guided fine needle biopsy is typically the preferred method for tissue acquisition. In this patient, biopsy results from the pancreatic head and the matted area of adenopathy near the porta hepatis revealed diffuse mixed inflammatory infiltrate, including lymphocytes, plasma cells, and eosinophils, along with evidence of "storiform fibrosis" and atrophy. Absence of malignancy in the biopsy findings supported a diagnosis more consistent with type 1 AIP.

Another hallmark of AIP is its rapid response to corticosteroid treatment, as outlined in the International Consensus Diagnostic Criteria (ICDC) guidelines. Radiologic resolution or significant symptom improvement strongly supports the diagnosis of AIP. Consequently, the patient was initiated on prednisone 40 mg PO daily for 4 weeks, leading to dramatic relief of symptoms, normalization of liver chemistries, and improvement in serum IgG-4 levels. These positive treatment outcomes further support AIP as the underlying cause of the obstructing mass.

CONCLUSION

This case of a patient with AIP exemplifies an atypical presentation of a rare disease. Many of the patient's presenting symptoms, initial laboratory findings, and imaging studies closely resembled those of pancreatic cancer or cholangiocarcinoma. It underscores the importance of considering this rare diagnosis in the appropriate demographic and being vigilant for such atypical presentations to ensure prompt diagnosis and treatment. AIP is a disease entity known for its dramatic response to treatment, further emphasizing the significance of early recognition and intervention.

REFERENCE

1. Li SY, Huang XY, Chen YT, Liu Y, Zhao S. Autoimmune pancreatitis characterized by predominant CD8+ T lymphocyte infiltration. World J Gastroenterol. 2011;17(41):4635. [PMID: 22147972]

2. Matsubayashi H, Kakushima N, Takizawa K, Tanaka M, Imai K, Hotta K, et al. Diagnosis of autoimmune pancreatitis. World J Gastroenterol. 2014;20(44):16559. [PMID: 25469024]

3. Shimosegawa T, Chari ST, Frulloni L, Kamisawa T, Kawa S, Mino-Kenudson M, et al. International consensus diagnostic criteria for autoimmune pancreatitis: guidelines of the International Association of Pancreatology. Pancreas. 2011;40(3):352-8. [PMID: 21412117]

4. Maruyama M, Watanabe T, Kanai K, Oguchi T, Muraki T, Hamano H, et al. International consensus diagnostic criteria for autoimmune pancreatitis and its Japanese amendment have improved diagnostic ability over existing criteria. Gastroenterol Res Pract. 2013. [PMID: 24348535]

5. Takuma K, Kamisawa T, Gopalakrishna R, Hara S, Tabata T, Inaba Y, et al. Strategy to differentiate autoimmune pancreatitis from pancreas cancer. World J Gastroenterol. 2012;18(10):1015. [PMID: 22416175]

6. Shimosegawa T, Chari ST, Frulloni L, Kamisawa T, Kawa S, Mino-Kenudson M, et al. International consensus diagnostic criteria for autoimmune pancreatitis: guidelines of the International Association of Pancreatology. Pancreas. 2011;40(3):352-8. [PMID: 21412117]

7. Tabata T, Kamisawa T, Takuma K, Hara S, Kuruma S, Inaba Y. Differences between diffuse and focal autoimmune pancreatitis. World J Gastroenterol. 2012;18(17):2099. [PMID: 22563198]

8. Takahashi N. CT and MR features of autoimmune pancreatitis. Radiology. 2013. [PMID: 17229877]

9. Taniguchi T, Seko S, Azuma K, Tamegai M, Nishida O, Inoue F, et al. Autoimmune pancreatitis detected as a mass in the tail of the pancreas. J Gastroenterol Hepatol. 2000;15(4):461-4. [PMID: 10824895]

10. Ohana M, Okazaki K, Hajiro K, Kobashi Y. Multiple pancreatic masses associated with autoimmunity. Am J Gastroenterol. 1998;93(1):99-102. [PMID: 9448184]

11. Dong Y, D'Onofrio M, Hocke M, Jenssen C, Potthoff A, Atkinson N, et al. Autoimmune pancreatitis: Imaging features. Endosc Ultrasound. 2018;7(3):196-203. [PMID: 28836516]

12. Vijayakumar A, Vijayakumar A. Imaging of focal autoimmune pancreatitis and differentiating it from pancreatic cancer. ISRN Radiol. 2013;2013. [PMID: 24967284]

Citation: Zhongying L, Christopher M, Dina G, Hongfa Z, Rosario L, Danit A. Autoimmune Pancreatitis Mimicking Cholangiocarcinoma/Pancreatic Cancer Presenting As Painless Jaundice and Porta Hepatis Adenopathy: A Case Report. JOP. J Pancreas. (2024) 25:853.

13. Sah RP, Chari ST. Serologic issues in IgG4-related systemic disease and autoimmune pancreatitis. Curr Opin Rheumatol. 2011;23(1):108-13. [PMID: 21124093]

14. Hamano H, Kawa S, Horiuchi A, Unno H, Furuya N, Akamatsu T, et al. High serum IgG4 concentrations in patients with sclerosing pancreatitis. N Engl J Med. 2001;344(10):732-8. [PMID: 11236777]

Citation: Zhongying L, Christopher M, Dina G, Hongfa Z, Rosario L, Danit A. Autoimmune Pancreatitis Mimicking Cholangiocarcinoma/Pancreatic Cancer Presenting As Painless Jaundice and Porta Hepatis Adenopathy: A Case Report. JOP. J Pancreas. (2024) 25:853.