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Case Report

Autoimmune pancreatitis in an adolescent female following dengue fever: a diagnostic challenge in IgG4-related disease

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ABSTRACT

Autoimmune pancreatitis (AIP), a rare form of chronic pancreatitis, is often misdiagnosed due to its overlap with other causes of pancreatic inflammation. We report an unusual case of an 18-year-old female who developed acute pancreatitis in the context of dengue fever. Persistent elevation of pancreatic enzymes and characteristic imaging led to further evaluation, confirming Type 1 AIP through elevated serum IgG4, weakly positive ANA, and histopathology. This case emphasizes the need for a comprehensive diagnostic approach to avoid delayed diagnosis and prevent irreversible organ damage.

Keywords: Autoimmune pancreatitis, IgG4-related disease, Chronic pancreatitis, Dengue, Fever, Adolescent female

INTRODUCTION

Autoimmune pancreatitis (AIP) is a chronic fibro-inflammatory condition of the pancreas, now recognized as a manifestation of IgG4-related disease (IgG4-RD).[1] It accounts for 5–6% of all chronic pancreatitis cases. Type 1 AIP is associated with elevated serum IgG4 levels and extra-pancreatic manifestations, whereas type 2 is limited to the pancreas and characterized by granulocytic epithelial lesions. AIP can closely mimic pancreatic malignancy, emphasizing the need for careful diagnostic distinction based on imaging, serology, histology, and steroid responsiveness.[2] Although AIP is typically seen in older males, this case highlights its atypical presentation in a young female following dengue infection.

CASE REPORT

An 18-year-old previously healthy female presented with.

Symptoms

3 days of high-grade fever, epigastric pain, and non-bloody vomiting.

No signs

Jaundice or systemic organ dysfunction.

Laboratory tests

Amylase: 558 U/l, Lipase: 2196 U/l, platelet count: 88,000/mm^3, dengue IgM: positive, liver and renal function: normal, calcium and triglycerides: normal.

Imaging

CT abdomen

Edematous pancreas with peripancreatic fat stranding; no gallstones.

MRCP

Bulky distal pancreas with signal changes and loss of lobulation; diffuse gallbladder edema; bilateral pleural effusion; no ductal dilatation. She was treated symptomatically for dengue-associated pancreatitis and discharged after improvement. However, persistent hyperenzymemia (Lipase 829→464 IU/l on follow-up) prompted further evaluation.

Autoimmune work-up

Serum IgG4

312 mg/dl (>2×ULN).

ANA

Weakly positive.

Complement levels

The complements level was normal.

Endoscopic ultrasound (EUS) showed diffuse pancreatic enlargement with a hypoechoic rim. Fine-needle biopsy (FNB) revealed: Dense lymphoplasmacytic infiltrate, prominent storiform fibrosis, obliterative phlebitis, 10 IgG4-positive plasma cells per high-power field. These findings met the international consensus diagnostic criteria (ICDC) for type 1 AIP.

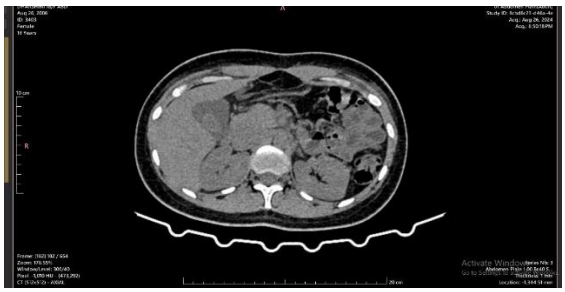

Figure 1: CT Abdomen- Edematous pancreas with peripancreatic fat stranding. No biliary stones.

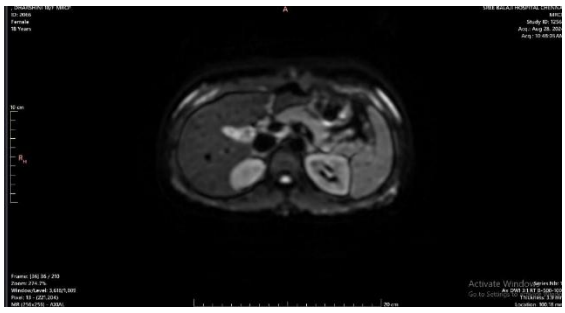

Figure 2: MRCP- Diffuse gallbladder edema, bilateral pleural effusion, bulky distal pancreas with signal changes, and loss of lobulations in head and body. No pancreatic duct dilation.

DISCUSSION

Type 1 AIP is the pancreatic manifestation of IgG4-RD and is characterized by specific histologic and radiologic features, serologic markers (IgG4 >135 mg/dl), and a good response to corticosteroids. While dengue-induced pancreatitis is usually self-limiting, the persistent enzyme elevation and imaging findings in our patient suggested an alternate etiology.[3] Application of the HISORt criteria further supported the diagnosis.

H: Histology–storiform fibrosis, lymphoplasmacytic infiltrate, obliterative phlebitis. I: Imaging–pancreatic enlargement with irregularities. S: Serology–IgG4 >2×ULN. O: Other organ involvement absent; weakly positive ANA. R: Clinical and biochemical response to steroids. Although the association between viral infections and autoimmune diseases remains under study, viral infections such as dengue may act as potential triggers in genetically predisposed individuals.

Treatment and outcome

Initiated on oral prednisolone 40 mg/day, clinical improvement within 2 weeks, lipase dropped to 202 IU/l, resolution of abdominal symptoms. Repeat imaging: Reduced pancreatic swelling. Steroid taper over 8 weeks. Patient remains asymptomatic with no recurrence at 6-month follow-up.

Imaging in the present case serves as important evidence in the diagnosis of autoimmune pancreatitis over dengue-induced acute pancreatitis alone. CT abdomen showed edematous pancreatic tissue with related fat stranding but an absence of gallstones, essentially eliminating gallstones-related pancreatitis.[4] The MRCP results were closer to normal, with bulkiness of the distal pancreatic body and signal changes, pleural effusion bilaterally, diffuse gallbladder edema with no ductal branches dilatation.[5]

This is consistent with the usual radiological findings of type 1 autoimmune pancreatitis with diffuse enlargement and lobular architecture of the pancreas implicating an inflammatory rather than blocking mechanism. The lack of biliary obstruction is especially important because autoimmune pancreatitis features obstruction of the ducts, which is not present in the pancreatic malignancy case. In this way, the imaging augments the serological and histological data, further along supporting the HISORt criteria. This indicates the decisive role radiological interpretation still has in differentiating between autoimmune pancreatitis and other mimicking diseases.

CONCLUSION

This case underscores the importance of considering autoimmune etiologies in young patients with persistent pancreatitis. A multidisciplinary approach incorporating imaging, serology, and histopathology is essential for

diagnosis. Early corticosteroid therapy can reverse disease and prevent complications.

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