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Autoimmune Hepatic Syndrome in a Male Patient: A Rare Association of Type 1 Autoimmune Hepatitis with Type 1 Diabetes – A Case Report and Literature Review

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Abstract **Case Report**

Autoimmune hepatitis (AIH) is a rare chronic liver disease of immune origin that predominantly affects women. Its occurrence in men is unusual and often associated with a more severe course. We report the case of a male patient with cirrhosis secondary to type 1 AIH, in association with type 1 diabetes and subclinical autoimmune thyroiditis. This case highlights the importance of screening for associated autoimmune conditions, even in male patients. A review of the literature is provided to discuss clinical, prognostic, and therapeutic implications.

Keywords: Autoimmune hepatitis, Type 1 diabetes, Autoimmune thyroiditis, Male, Cirrhosis, Polyautoimmunity, Autoimmune disease.

INTRODUCTION

Autoimmune hepatitis (AIH) is a chronic inflammatory liver disease characterized by immune-mediated hepatocellular injury, polyclonal hypergammaglobulinemia, presence of autoantibodies, and favorable response to immunosuppressive therapy [1,2]. While predominantly affecting women, about 20% of cases occur in men, who tend to present at more advanced stages and have less favorable outcomes [3,4].

AIH can coexist with other autoimmune disorders, forming part of a polyautoimmune syndrome, defined by the presence of at least two autoimmune diseases in the same individual [5,6]. Frequent associations include autoimmune thyroiditis, type 1 diabetes (T1D), celiac disease, and primary biliary cholangitis [7,8]. While this overlap is well documented in women, it remains rare and underexplored in male patients, where it may lead to silent progression toward severe liver disease [9].

We present a case of type 1 AIH in a male patient with compensated cirrhosis, associated with T1D and subclinical autoimmune thyroiditis, to explore the clinical features and implications of hepatic polyautoimmunity in men in light of current literature.

CASE PRESENTATION

A 61-year-old man with no notable family history was under follow-up in our department for compensated cirrhosis secondary to type 1 autoimmune hepatitis. The condition was initially revealed by cholestatic jaundice, diffuse pruritus, pale stools, and dark urine. Initial investigations showed marked hepatocellular injury with elevated transaminases, polyclonal hypergammaglobulinemia, and positive antinuclear and smooth muscle antibodies. Viral hepatitis serologies were negative. A diagnosis of type 1 AIH was made, and the patient responded well to oral corticosteroids combined with azathioprine. However, therapy was discontinued after three months due to financial constraints, with no treatment substitution or hepatology follow-up.

The patient also had longstanding type 1 diabetes, managed with a basal-bolus insulin regimen. The diagnosis was made several years earlier, in the absence of metabolic syndrome, and suggested an autoimmune etiology. Due to this autoimmune background, an extended workup was performed, revealing significantly elevated anti-thyroperoxidase (anti-TPO) antibodies with normal TSH. Thyroid ultrasound showed a hypoechoic, heterogeneous, non-

nodular gland, consistent with subclinical autoimmune thyroiditis.

He was readmitted for recurrent jaundice associated with intense fatigue and moderate deterioration of general condition. On admission, he was alert, normotensive, afebrile, with a BMI of 18.3 kg/m². Physical examination revealed no ascites, hepatic tenderness, or signs of portal hypertension. Blood tests showed significant hyperbilirubinemia, reduced prothrombin time (74%), preserved albumin, and a Child-Pugh score of B8. MELD score was 16. Abdominal ultrasound revealed a dysmorphic liver without focal lesions or portal vein thrombosis. Alpha-fetoprotein was normal, and infectious screening was negative.

Corticosteroid therapy was reintroduced early during hospitalization with close monitoring of hepatic evolution. Insulin therapy was adjusted with endocrinology consultation. The subclinical autoimmune thyroiditis did not require hormonal substitution but was monitored regularly. The patient's clinical condition improved, with resolution of jaundice, increased energy, and stabilization of hepatic parameters.

DISCUSSION

Autoimmune hepatitis is a rare but potentially severe chronic liver disease, characterized by autoantibodies, elevated liver enzymes and IgG, and good response to immunosuppression [1,2]. Type 1 AIH is the most common form in adults and is typically associated with ANA and SMA antibodies [1]. Although females are more frequently affected, up to 20% of cases occur in men, who often present later and with more advanced fibrosis, as well as less durable treatment responses [3,4].

Our patient had compensated cirrhosis at diagnosis, consistent with the reported male tendency toward more insidious and fibrosing forms. Literature suggests that in men, the lack of early clinical signs and lower clinical suspicion may delay treatment initiation, increasing the risk of cirrhosis [3–5]. A study by Umemura *et al.* in a Japanese cohort showed that men had significantly higher histological activity and fibrosis scores at diagnosis [6].

The coexistence of T1D and autoimmune thyroiditis in this case suggests an underlying polyautoimmune state, defined as the presence of two or more autoimmune diseases in one individual [7]. This is considered incomplete when involving two disorders, and complete when involving three or more [7,8]. The AIH–T1D combination is reported in about 5–10% of AIH cases, with much lower prevalence in men [9]. In a study by Ferrari *et al*., most patients were women with autoimmune polyendocrine syndrome [9]. In our case, diabetes preceded AIH onset, a common sequence in polyautoimmunity, where endocrine disease often predates hepatic involvement.

Autoimmune thyroiditis, identified here in subclinical form, is also a frequent AIH association, with a reported prevalence of 15–30% [10,11]. Diagnosis is based on anti-TPO positivity and suggestive ultrasound findings, even in the absence of thyroid dysfunction. Early recognition of these forms is essential to prevent metabolic complications [11]. This case underlines the importance of systematic screening for autoimmune comorbidities in AIH.

From a pathophysiological standpoint, these overlapping disorders may share immunogenetic susceptibility, particularly HLA-DR3, DR4, and DQ2 haplotypes, frequently involved in all three diseases [12]. Loss of immune tolerance may be driven by Treg dysfunction, cytokine imbalance (e.g., IL-6, IFN-γ), and gut microbiota dysregulation [13,14]. Emerging studies have also implicated the hepatic microbiome in autoimmune liver diseases by altering gut permeability and antigen presentation [14].

Management of such cases requires a multidisciplinary approach. Corticosteroids remain first-line for AIH, often followed by azathioprine. However, poor adherence is a major concern, as shown in our case. Early treatment withdrawal is a well-known relapse factor, particularly detrimental in men [2,4,5]. A recent Turkish study by Yilmaz *et al.* confirmed that male patients had significantly shorter event-free survival due to higher therapy discontinuation rates and irregular follow-up [15]. T1D management requires close coordination with endocrinologists, especially during hepatic catabolic phases with increased hypoglycemia risk. Although subclinical, autoimmune thyroiditis also requires long-term monitoring.

CONCLUSION

This case illustrates the complexity of overlapping autoimmune syndromes in male patients, particularly when type 1 autoimmune hepatitis coexists with endocrinopathies such as type 1 diabetes and autoimmune thyroiditis. Recognizing such associations is critical—even in the absence of overt clinical signs—for appropriate screening, multidisciplinary management, and personalized care. Male sex should be considered a risk factor for delayed diagnosis and suboptimal treatment response. A coordinated strategy promoting treatment adherence and anticipating disease relapses is essential to improve long-term outcomes

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