A patient with primary biliary cirrhosis associated with autoimmune hemolytic anemia

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Abstract: Primary biliary cirrhosis is often associated with autoimmune conditions, such as thyroid disease, sicca complex, and rheumatoid arthritis. However, an association with autoimmune hemolytic anemia has rarely been reported. We present a case of primary biliary cirrhosis associated with warm type autoimmune hemolytic anemia, and we review prior reports.

Key words: primary biliary cirrhosis, autoimmune hemolytic anemia, warm type

Introduction

Primary biliary cirrhosis (PBC) principally affects middle-aged women, may be an autoimmune disorder, and is characterized by progressive cholestasis, pruritus, hyperpigmentation, and the development of biliary cirrhosis with complications of ascites and portal hypertension. This disease is increasingly recognized as a systemic disorder associated with various autoimmune diseases. It has been estimated that up to 84% of patients with PBC have at least one associated autoimmune disease and 41% of the patients have two or more.¹ However, autoimmune hemolytic anemia has not been well described in association with PBC. We report a patient who presented with significant warm antibody immune hemolytic anemia and was coincidentally found to have PBC.

Case report

A 68-year-old woman was admitted to a local general hospital with hemoptysis in August, 1997. She had a history of total colectomy performed because of tuberculosis of the colon at age 56 years. At age 63 years, she was diagnosed as having Hashimoto’s thyroiditis at our hospital, on the basis of hypothyroidism, pericardial effusion, and positive thyroid test and microsome test. Oral administration of dried thyroid (100 μg per day) was started, but she discontinued the therapy herself after 1 year.

On admission at the local general hospital, her laboratory data revealed the following abnormalities: hemoglobin (Hb), 6.3 g/dl; reticulocyte count, 260‰ (reference range, 3–11‰); haptoglobin, 41 mg/dl (range, 100–300 mg/dl); total serum bilirubin (T-bil), 4.6 mg/dl (range, 0.3–0.8 mg/dl); direct serum bilirubin (D-bil), 3.3 mg/dl (range, 0.3–0.8 mg/dl); aspartate aminotransferase (AST), 76 IU/l (range, 6–37 IU/l); alanine aminotransferase (ALT), 90 IU/l (range, 10–34 IU/l); alkaline phosphatase (ALP), 237 IU/l (70–250 IU/l); γ-glutamyltranspeptidase (γ-GTP), 255 IU/l (range, 7–45 IU/l); total cholesterol (T-cho), 116 mg/dl (range, 130–220 mg/dl); anti-thyroglobulin 18.5 U/ml (range, 0.3–10 U/ml); antinuclear antibody (ANA) was positive at a titer of 1:40. Anti-microsome test was also positive, at a titer of 1:400. Hepatitis B surface antigen and antibody to hepatitis C virus were both negative. The direct antiglobulin test (direct Coombs’ test) was positive for anti-IgG, anti-C3b, and C3d. Based on the above laboratory data, she was diagnosed as having autoimmune hemolytic anemia (AIHA). Hence, she was treated with prednisolone (PSL) 60 mg/day. Her anemia immediately responded to this treatment, and PSL was therefore gradually tapered to 25 mg/day. Four weeks after initiation of the prednisolone therapy, her hemoglobin level had recovered to 11.7 g/dl and her general condition had improved. However, the liver dysfunction continued, so, in October 1997, she was referred to our hospital to investigate the etiology of the liver damage.

On admission at our hospital, physical examination revealed neither jaundice, hepatomegaly, nor splenome-
A late inspiratory coarse crackle was audible in her lower back. Chest X-ray and chest computed tomography showed findings suggestive of interstitial lung disease without malignancy. Based on these findings, we diagnosed that the hemoptysis was caused by interstitial lung disease.

Results of laboratory tests on admission were: Hb, 13.9 g/dl; reticulocytes, 47%; T-bil, 1.9 mg/dl; D-bil, 0.7 mg/dl; ALT, 97 IU/l; AST, 185 IU/l; ALP, 512 IU/l; γ-GTP, 767 IU/l; T-Cho, 252 mg/dl. Elevated levels of serum immunoglobulins were noted: IgG, 2100 mg/dl (reference range, 800–1800 mg/dl); IgA, 690 mg/dl (range, 150–310 mg/dl); IgM, 309 mg/dl (range, 80–230 mg/dl). Her serum copper level was 78 μg/dl (range, 78–131 μg/dl). ANA was present at a titer of 1:40. However, anti-mitochondrial antibody (AMA) and its M2

**Fig. 1.** Needle biopsy of the liver shows lobular disorganization and mild aggregates of lymphoid cells in portal area, with mild piecemeal necrosis. H&E, ×200

**Fig. 2.** The portal area was infiltrated by inflammatory cells and the bile ducts were scanty. H&E, ×200