

## Case Reports

### PRIMARY BILIARY CIRRHOSIS IN A PATIENT WITH PROGRESSIVE SYSTEMIC SCLEROSIS. A CASE REPORT

E.J. KUCHARZ,\* G. JONDERKO,\* J. RUBISZ-BRZEZINSKA,\*\*  
AND P. BESSER\*\*\*

*From the Fourth,\* and Seventh\*\*\* Departments of Internal Medicine, and the \*\*First Dept. of  
Dermatology, Silesian School of Medicine, Katowice, Poland.*

#### ABSTRACT

A 63-year-old woman suffering from progressive systemic sclerosis for about 20 years disclosed symptoms of liver disease within the last three years. Diagnosis of biliary cirrhosis was established on the basis of clinical picture, pathological examination of the hepatic tissue sample, immunological tests, and x-ray studies. Association of systemic sclerosis with primary biliary cirrhosis is briefly reviewed. *MJIRI, Vol. 7, No.2, 133-135, 1993.*

**Keywords:** Primary biliary cirrhosis; progressive systemic sclerosis

#### INTRODUCTION

Primary biliary cirrhosis is frequently associated with other multiorgan involvements.<sup>1</sup> One of the involvements is progressive systemic sclerosis. The incidence of the association of systemic sclerosis and primary biliary cirrhosis has been disputed in the last two decades. Sherlock and Schener<sup>2</sup> found signs of scleroderma in 3% of patients with primary biliary cirrhosis only. Slightly higher incidence was reported by Buffet and Etienne.<sup>3</sup> In the study of eighty-three patients with primary biliary cirrhosis investigated with a focus on the symptoms of rheumatic disorders, the prevalence of systemic sclerosis was found to be 17%.<sup>4</sup> There are also a few reports of individuals with both disorders.

In the present report, we described a patient with

progressive systemic sclerosis and primary biliary cirrhosis, and briefly discussed the possible mechanisms of the association of these disorders.

#### CASE REPORT

A 63-year-old white woman was admitted in January, 1991, for investigation of the jaundice and severe pruritis which appeared gradually in the course of progressive systemic sclerosis. The diagnosis of systemic sclerosis had been established 10 years before although the Raynaud's phenomenon had occurred for the first time about 20 years before admission to our hospital. There was no significant past history of any disease or exposure to chemical agents. The gallbladder was removed due to the presence of gallstones five years before.

On admission, significant cutaneous changes were observed. They were localized mostly on the face and distal parts of the extremities. The disease was classified as type

Author's address: Fourth Department of Internal Medicine, Silesian School of Medicine, ul. Engelsa 102  
PL 43-100 Tychy, Poland.

## Primary Biliary Cirrhosis and Systemic Sclerosis

II of progressive systemic sclerosis according to the classification of Holzmann et al.<sup>5</sup> Moderate jaundice was also noted and was accompanied by pruritis.

Laboratory studies disclosed the followings: hemoglobin 5.9 mmol/l; hematocrit 38%; red cell count  $4.2 \times 10^6/\text{mm}^3$ ; white cell count  $9.0 \times 10^3/\text{mm}^3$ ; thrombocyte count  $151,000/\text{mm}^3$ ; ESR 60 mm/h. Activity of serum aspartate aminotransferase was 110 U/l, alanine aminotransferase 80 U/l, alkaline phosphatase 792 U/l, and gamma-glutamyltranspeptidase 383 U/l. Total bilirubin level was 95.6  $\mu\text{mol/l}$ , and conjugated bilirubin 81.4  $\mu\text{mol/l}$ . Cholesterol level was 10.2 mmol/l, and total lipid level was 5.0 g/l. The following levels of acute phase indices and immunoglobulins were shown: seromuroid 0.63 g/l, haptoglobin 0.68 g/l,  $\alpha_1$ -antitrypsin 2.05 g/l,  $\alpha_2$ -macroglobulin 1.90 g/l, ceruloplasmin 0.543 g/l, transferrin 2.95 g/l, IgG 12.1 g/l, IgA 3.24 g/l, and IgM 5.05 g/l. Total serum protein level was 70.5 g/l, albumin 34.5 g/l, and  $\gamma$ -globulin 16.9 g/l.

The most profound internal organ involvement of progressive systemic sclerosis referred to the gastrointestinal system. The patient suffered from marked dysphagia; the x-ray studies and esophagoscopy revealed lack of esophageal motility due to wall stiffness. Gastroscopy showed ulceration in the antrum and diminished gastric motility. Histopathological examination of the gastric mucosa showed signs of chronic gastritis. Gastroparesis was confirmed by determination of the gastric emptying. The half-time ( $T_{1/2}$ ) for emptying solid food was 166 min as compared to  $92 \pm 19$  min for age-matched healthy women.

Ultrasonographic examination of abdomen showed a normal-sized liver with homogenous structure and a normal-sized vena cava. The spleen was slightly enlarged (129 mm in length). There was not any other abnormality within the abdomen.

Intravenous cholangiography did not demonstrate the biliary ducts. Endoscopic retrograde cholangiopancreatography showed the normal shape and size of the intra- and extrahepatic biliary ducts. This finding facilitated exclusion of sclerosing cholangitis as a cause of cholestasis.

Histopathological examination of the hepatic tissue obtained with needle biopsy showed chronic hepatitis and enhanced cholestasis. Antimitochondrial antibodies and antibodies against smooth muscles were found in the serum.

Computed tomography of the vertebral bodies showed a slight decrease in hydroxyapatite content within the skeleton.

### DISCUSSION

Progressive systemic sclerosis is a multiorgan disorder of connective tissue. The etiology of disease remains

unknown. Despite involvement of several organs, hepatic involvement in progressive systemic sclerosis is relatively rare. The most frequent liver disorder associated with systemic sclerosis is primary biliary cirrhosis. The random association of primary biliary cirrhosis and systemic sclerosis is highly unlikely since both disorders are relatively uncommon. The nature of this association remains obscure as the etiology of both diseases is largely unknown. The pathological tissue reaction in both diseases reveals some general similarities, namely, an early inflammatory reaction followed by fibrosis. Progressive systemic sclerosis is associated with a number of autoimmune phenomena.<sup>6</sup> Similarly autoimmunity is believed to contribute to the development of primary biliary cirrhosis.<sup>7</sup>

Association of primary sclerosing cholangitis with systemic sclerosis was reported in one patient by Fraile et al.<sup>8</sup> General symptomatology of this disease which is a chronic inflammation leading to fibrosis and obliteration of the bile duct is similar to that of primary biliary cirrhosis. Primary sclerosing cholangitis was excluded in our patient on the basis of endoscopic retrograde cholangiopancreatographic findings.

Determination of hydroxyapatite content in the vertebral body was carried out in our patient in order to evaluate hepatic osteodystrophy. The osteodystrophy is caused by a multifactorial liability for vitamin D deficiency and calcium malabsorption.<sup>9-11</sup> The values of hydroxyapatite within the skeleton were found to be close to the lower limit of the normal range and osteodystrophy was excluded.

From the practical point of view, it is important to evaluate liver function in all patients with systemic sclerosis and to investigate all patients with primary biliary cirrhosis for symptoms of connective tissue disorders. These signs are commonly attributed to the multiorgan involvement of the hepatic disease, and in fact are caused by a separate nosological unit.

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