CASE REPORT

Hepatic involvement in lepromatous leprosy

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Summary  Hepatic involvement in a lepromatous leprosy (LL) patient is reported. The serum concentrations of aminotransferases were much higher than previously described in the leprosy literature. Other causes for hepatic damage were ruled out. Such hepatic involvement and elevation of aminotransferases have never been described in leprosy.

Introduction

Hepatic involvement is common in leprosy. Many descriptions are found in the literature during the twentieth century. The first reports emphasize the lesions seen in lepromatous leprosy (LL).1–3 Later, hepatic damage was also reported in the tuberculoid and borderline forms of leprosy.4,5 Histopathological examination of the liver is abnormal in up to 90% of the patients with LL,6–8 with the most common findings being focal infiltration mainly of lymphocytes and degenerative changes of the hepatocytes.7 During erythema nodosum leprosum (ENL), the liver is frequently involved and the histopathological appearance is similar to that of ENL seen in the skin.8 In contrast to the high frequency of liver involvement, elevation of serum levels of enzymes related to hepatic damage is uncommon and almost always very mild.9 We report a case of a patient with LL and a type 2 reaction which presented as a systemic disease associated with aminotransferase serum concentrations much higher than those described previously. This presentation caused some diagnostic difficulty.

Case report

A 70-year-old man was admitted to the University Hospital, Federal University of Minas Gerais, Belo Horizonte, Brazil, in October 1993. His complaints were asthenia, fever,
disseminated skin lesions, nasal obstruction, and mild oedema of the legs and feet for about 2 months. There was no history of alcohol consumption, drug intake or previous liver disease. On physical examination, he was febrile (38°C) and presented with diffuse infiltration of the skin, including the face. Tender red nodules were noted on the skin of the forearms and thighs. The soles were dry, with ulcerated lesions. The left palm was cyanotic and oedema was observed in the hands and feet. Neurological examination revealed impairment of sensation to pain in the lower limbs, and tenderness and enlargement of the radial cutaneous nerves (mainly on the left side). There were no other abnormalities on physical examination and no stigmata of chronic liver disease. Neither the liver nor the spleen was palpable. Except for mild anemia (haematocrit, 36.8%; normal, 39–49%), blood counts as well as prothrombin and partial thromboplastin times were normal. The erythrocyte sedimentation rate was 100 mm/h (normal, 0–15 mm/h). Serum aspartate aminotransferase (AST) was 145 IU/l (normal, 10–30 IU/l); alanine aminotransferase (ALT), 166 IU/l (normal, 8–20 IU/l); gamma-glutamyltransferase (GGT), 60 IU/l (normal, 9–50 IU/l); albumin, 3.8 g/dl (normal, 3.5–5.5 g/dl); and total globulin, 3.9 g/dl (normal, 2.0–3.5 g/dl). The values for bilirubin, alkaline phosphatase, lactate dehydrogenase (LDH), glucose-6-phosphate dehydrogenase (G6PD), urea nitrogen and creatinine were normal, as was urine examination. The search for antibodies of the IgG and the IgM classes against A hepatitis virus were, respectively, positive and negative; and serological tests for B and C hepatitis viruses were negative. The Venereal Disease Research Laboratory (VDRL) test was negative. Chest X-rays and an abdominal ultrasound examination were unremarkable. LL associated with a severe type 2 reaction was considered as the main diagnostic hypothesis, confirmed by the demonstration of

Figure 1. Photomicrograph of the liver showing focal collection of inflammatory cells, mainly lymphocytes. Liver cells show vascular degeneration with multiplication of nuclei (haematoxylin-eosin × 400).
acid-fast bacilli (AFB) on slit skin smears from skin lesions with a high bacterial index (BI, 4.5 +).

Treatment with prednisone (1 mg/kg per day) was started, followed by marked improvement of the symptoms. Although serious hepatic damage is rarely seen during multidrug therapy (MDT),10 the potential of hepatotoxicity of the anti-leprosy drugs together with the unprecedented high levels of aminotransferases led us to postpone specific therapy until liver biopsy. Histopathological examination of the hepatic fragment (Figure 1) stained by haematoxylin-eosin, Gomori, Perls, reticulin and Fite-Faraco stains showed normal lobular architecture, lymphocytic and histiocytic infiltration around portal areas, vacuolar degeneration of the hepatocytes with multiplication of nuclei, areas of hydropic degeneration and fatty change, and numerous foam cells at portal and at parenchymatous areas with AFB and globi. Rifampin, clofazimine and dapsone were started 7 days after commencing corticosteroid therapy. On that day, the values for AST and the ALT were, respectively, 47 IU/l and 132 IU/l. The patient showed marked and progressive improvement and was discharged 15 days after admission. Prednisone was tapered gradually and was discontinued 3 months after its initiation. At this time, thalidomide (100 mg/day) was started. Serum levels of aminotransferases declined progressively (AST, 34 IU/l and ALT, 36 IU/l). At follow-up 6 months later, the patient remained well with only anaemia (haematocrit, 35.2%). The values for AST (21 IU/l), ALT (12 IU/l), GGT (46 IU/l), albumin (4.3 g/dl) and total globulin (3.4 g/dl) were normal, as were other blood chemicals. About 20 days later, the patient died suddenly at home in a rural area. Autopsy was not performed. According to his family, he was feeling well and no abnormalities were noted before his death.

Discussion

Elevation of hepatic enzymes, especially of the aminotransferases, occurs in leprosy mainly during the reactions,4,9,11,12 and is related to immunocomplex formation and deposition in the liver.13 The case reported here presents the features described above. The histopathological alterations found in hepatic biopsy were also similar to those described in the literature.14,15 The peculiar aspect of our patient is related to serum levels of the aminotransferases, which were about 5 times the upper reference value for the AST and about 8 times that for the ALT. It is well documented in literature about leprosy that hepatic involvement is associated with no or mild increase in the levels of aminotransferases.15 Values of 2–3 times normal limits are uncommon and are considered very high for liver involvement in leprosy. For example, in a study of 20 cases of hepatic involvement in leprosy reaction, the levels of aminotransferases were considered very high (more than twice the normal value) in only four (20%) patients; only one of these cases presented very high values for both enzymes. In the other three patients, such high levels were observed only for ALT.9 In our patient, prompt and progressive decrease in aminotransferase concentrations in response to treatment for the reaction and for leprosy, along with the absence of other demonstrated cause for the hepatic damage, reinforced the aetiological role of leprosy.

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References