Liver Transplantation in a Patient With Clinical Manifestations of Cryptogenic Cirrhosis: A Case Report of Hepar Lobatum as a Primary Liver Condition


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ABSTRACT

Background. This article reports a case of hepar lobatum, a peculiar and rare type of liver deformity, originally described in association with infectious or parasitic diseases and with malignancies.

Case Report. We have described a 42-year-old woman with this disorder, which was unrelated to the known conditions and referred for liver transplantation for having clinical manifestations of cirrhosis, portal hypertension, and impaired hepatic function.

Conclusions. The observed histologic pattern suggests that hepar lobatum could be, in some patients, the effect of a primary process of hamartomatous origin involving the organ vascular supply.

THE SHRINKAGE OF LIVER PARENCHYMA involving ≥1 lobes occurs in about 13% of cirrhotic organs, in 50% of those with noncirrhotic portal hypertension, and rarely in other conditions [1]. Hepar lobatum, a rare cause of chronic liver disease, was originally described in patients with tertiary syphilis as a morphologic manifestation of healing gummas [2,3]. These can be single or multiple and are tuberculoid giant cell granulomas with amorphous pale necrotic centers accompanied by plasma cells and areas of endarteritis obliterans. The subsequent healing process is by fibrosis with broad bands of scarring which may distort the liver [4].

In the 1990s, another infectoparasitary disease—a case of advanced hepatic schistosomiasis with similar morphology—was reported; the obliteration of portal vein branches and its consequent focal parenchymal atrophy and collapse and the liver lymphatic plexus involvement by the ova were suggested as the possible pathophysiologic pathways [5].

As more data became available, several studies have reported an association between hepar lobatum and some cases of diffuse metastatic involvement of the organ, usually by breast carcinoma, a situation coined as hepar lobatum carcinomatousum [2,6–11]. The disease was also related to metastatic rectal [12] and gastric [13] carcinomas, and to Hodgkin lymphoma [1,14]. The histologic picture, according to the main theory, is owing to vascular injury by direct neoplastic invasion and its consequent ischemic damage or to the intrahepatic veins involvement by the progression of the stromal reaction associated with the tumor cells [7–9].

Finally, many cases have been observed after chemotherapy [7,9,10,12,13,15], and the morphology has been attributed to regression of the tumor nodules with subsequent tissue collapse, fibrosis, and scar contraction [4,10,13].

CASE REPORT

A 42-year-old woman had a 17-year history of mental confusion and weakness associated with the development of telangiectasias on the face and the presternal region and with upper digestive bleeding episodes. Previously, she had had 2 pregnancies and a personal history of depression, hypothyroidism, and a smoking habit. There was no evidence of regular alcohol intake or drug consumption. The patient was taking citalopram, lorazepam, and levothyroxine, and has used oral contraceptives in the past. No known chemotherapeutic agent was mentioned. Physical examination showed jaundice, palmar erythema, spider angiomas on the trunk, ascites, and a nonpalpable liver.

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Initial blood tests revealed increased serum levels of aspartate aminotransferase (57 U/L; normal, <27), normal levels of alanine aminotransferase (31 U/L; normal, <34), increased bilirubinemia (8.42 mg/dL; normal, <1), with 4.11 mg/dL for the conjugated form (normal, ≤0.3) and elevated alkaline phosphatase (254 U/L; normal, <104) and γ-glutamyl-transpeptidase (216 U/L; normal, <42). They also showed thrombocytopenia, with a platelet count of 62,000/mm³ (150,000 < normal < 400,000) and an International Normalized Ratio of 1.60 (normal, ≤1.25). The patient had no evidence of chronic infection by hepatotropic viruses or by Treponema pallidum (the search results for the hepatitis B surface antigen, hepatitis B core antibody, hepatitis B surface antibody, hepatitis C virus antibody, and for the chemiluminescent microparticle immunoassay treponemic test were negative), the serum ceruloplasmin level was 0.23 g/L (0.2 < normal < 0.6), the gamma fraction in the serum protein electrophoresis was normal (1.80 g/dL), and she had a negative test for antinuclear factor. Helical multislice computed tomography showed a reduced size liver with lobulated contour and a significant architectural distortion without hypervascular lesions (Fig 1).

The patient underwent orthotopic liver transplantation (Model for End-stage Liver Disease score, 24; Child-Pugh score, category C) with removal of apparent appendage tissue at the splenogastric ligament and the precaval region. The explant liver weighed 630 g, measured 19.5 × 12.5 × 8.8 cm, and had a gross appearance of a coarsely lobated organ, with a smooth surface and multiple crevices and depressions sharply mingled with various sized lobular areas, sometimes linked to the organ by a delicate strand of parenchyma. The light brown liver’s cut surface revealed sparse interconnected thin to moderately thick dark bands, but devoid of suspected focal lesions on gross examination (Fig 2). Samples were taken from 8 different regions according to the conventional sampling method in which all of the liver segments are analyzed under gross interpretation and histologic examination. The gallbladder was located in its normal site and did not have calculi.

Histologic examination showed a mixed pattern of liver lesions (Fig 3), resulting in a pseudocirrhotic appearance with moderate degree of fibrosis in some portal tracts and occasional bands of connective tissue in a vaguely nodular fashion, which also exhibited dilated and tortuous vessels and proliferated bile ductules with a neutrophilic and lymphocytic infiltrate. Moreover, there was focal ductopenia and mild periportal and perisegmental interface activity. Lobular changes included areas of macrogromatic steatosis, hepatocyte ballooning, peliosis, and a moderate degree of hepatocellular

Fig 1. Axial (A) and coronal reformatted (B) portal venous phase computed tomography exhibiting a shrunken dysmorphic liver, with grossly lobulated contours and widened fissures. Note also ascites, splenomegaly, and paraesophageal, perigastric, and periesplenic varices (arrows).

Fig 2. (A-C) Gross appearance of the liver revealing the deep fissures and the lobated smooth surface. The dilated gallbladder can be observed near the hepatic hilum. (D) Cut surface showing the crevices and the parenchyma lobated appearance.
siderosis, evidenced by Prussian blue staining. There was no evidence of neoplasia in the sampled material.

DISCUSSION

The present case showed the gross morphology of hepar lobatum in a patient with portal hypertension and impaired liver function initially treated as a cryptogenic cirrhosis carrier. Indeed, all of the known putative markers, including those for autoimmune liver disorders, were negative and computed tomography showed diffuse parenchymal architectural distortion. Histologic examination, however, revealed a pseudocirrhotic appearance with a mixed pattern of liver lesions; however, it was neither related to secure morphologic evidence of any infectoparasitary disease nor to neoplasia. In fact, the real cause of the disease remained initially unclear.

Nevertheless, a few important observations could be made according to morphologic studies of other situations that show some similarity to parts of the present case. It is true that severe tissue shrinkage and parenchymal extinction occur when there is hepatic vein obstruction [1]. On the other hand, focal enlargement of the liver, in response to a regenerative stimulus or arteriovenous shunts, may cause tumor-like nodules such as those seen in patients with massive hepatic necrosis, cirrhosis, Budd-Chiari syndrome, hereditary hemorrhagic telangiectasia, portal vein absence, and portal vein thrombosis [14]. Indeed, hepar lobatum shows the union of areas of parenchymal atrophy and compensatory hyperplasia and has been usually associated with vascular abnormalities [14].

In our case, the proliferated bile ductules with a neutrophilic and lymphocytic infiltrate, the focal ductopenia, the mild periportal and perisepal interface activity, and the areas of macrogotocular steatosis, hepatocyte ballooning, and hepatocellular siderosis could be explained as less specific histologic signs of chronic liver damage. However, considering the peculiar morphology and way of distribution observed in many portal vessels as well as the absence of other clear etiologic agents, it would be reasonable to suggest that hepar lobatum could be, in some patients, the effect of a hamartomatous process in which the primary anomalous vascular supply would cause the same final

Fig 3. (A) Portal tracts enlargement with focal parenchymal nodularity (stain: Masson trichrome; original magnification, ×100). (B-E) Anomalous portal vessels exhibited in detail. (B) Portal proliferated bile ductules. (C, E) Areas of macrogotocular steatosis. (D) Enlarged portal tract with septa (stain: hematoxylin and eosin; original magnification, ×200 [B-D] and ×100 [E]). (F) Field exhibiting focal peliosis (stain: hematoxylin and eosin; original magnification, ×200).
picture as those seen in the other described causes of this rare type of liver deformity.

REFERENCES


