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CASE REPORT

Primary hepatic lymphoma: A rare case report

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Abstract

Primary hepatic lymphoma (PHL) is a rare clinical entity comprising 0.016% of all cases of non-Hodgkin's lymphoma and 0.4% of extranodal non-Hodgkin's lymphoma and can be missed easily. Here, we report a case of PHL treated with primary hepatic resection followed by an Rituximab Cyclophosphamide Doxorubicin Vincristine Prednisone (R-CHOP) chemotherapy regimen, diagnosed after postoperative biopsy report. The patient presented with complaints of pain abdomen, vomiting, anorexia, and weight loss. She had hepatomegaly and no other significant finding. Blood investigations were unremarkable. Biopsy or fine needle aspiration cytology (FNAC) was not taken before surgery. Contrast-enhanced computed tomography of the abdomen demonstrated well-defined solid mass with central hypodense fluid attenuating area in the liver with a thin pseudocapsule. The differential diagnoses considered were secondary to the liver, hepatocellular carcinoma, and hemangioma. Left hepatectomy with the removal of the middle hepatic vein was performed. The postoperative biopsy was reported as diffuse large B cell lymphoma of the liver.

Introduction

Non-Hodgkin's lymphoma (NHL) most commonly affects lymph nodes and liver as secondary involvement, but primary hepatic lymphoma (PHL) is a rare clinical condition that is confined to the liver only with normal peripheral blood smear and without the involvement of any other organ or lymph node. We report an interesting case of an old lady who presented to us with pain abdomen and hepatic mass, which was diagnosed as PHL after postoperative biopsy report and treated with R-CHOP chemotherapy regimen following hepatic resection.

Case report

A 55-year-old female presented with complaints of pain in the right hypochondrium and epigastrium for the last 20 days, which was dull aching and continuous in nature, aggravated by deep inspiration, and was associated with nausea and nonbilious vomiting for the last 2 days. History of anorexia and weight loss was present. There was no history of fever, recurrent pain abdomen, jaundice, altered bowel habit, hematemesis, or melena. There was no comorbidity, and the patient was neither a smoker nor an alcoholic. She had no history of similar complaints in her family. Clinical examination demonstrated palpable liver extending 5 cm below the right subcostal margin, irregular surface, firm in consistency, rounded margin, nontender with a span of 15 cm. The rest of the abdomen examination was normal. There were no signs of liver cell failure, and digital rectal examination was normal. Her blood investigations demonstrated a normal peripheral smear with mild eosinophilia, and liver function tests were within normal limits, except for elevated alkaline phosphatase (ALP) (393 IU/L) and low albumin (2.5 g/dL). Human immunodeficiency virus (HIV) and HBsAg and hepatitis C virus (HCV) serology were negative. Upper gastro intestinal (GI) endoscopy and flexible sigmoidoscopy were normal. Tumor markers alpha-fetoprotein (AFP) (3.6 ng/dL) and carcinoembryonic antigen (CEA) (1.2 ng/mL) were normal. Contrast enhanced computerised tomography (CECT) abdomen showed a well-defined solid mass lesion of ~9 × 13.4 × 6 cm occupying segment 3, 4, 5 of the liver, with central fluid attenuating hypodense area. The lesion shows poor enhancement in the arterial phase; progressive enhancement in the portal venous phase, which is persistent in the hepatic venous phase; and no washout in delayed phase (Fig. 1a,b). A thin rim of enhancing pseudocapsule is also noted surrounding the lesion.

The differential diagnoses considered were secondary to the liver, hepatocellular carcinoma and hemangioma. A left hepatectomy with the removal of the middle hepatic vein was performed.

The postoperative biopsy demonstrated diffuse large B cell lymphoma with tumor cells positive for leucocyte common antigen (LCA), CD 20, and Bcl 2 and negative for CD 3, Mum1, CD 10, and Bcl 6 (Fig. 1c,d). Lymph node from porta hepatis showed reactive changes, and the resected gall bladder had features of chronic cholecystitis. After the biopsy report, bone marrow aspiration and biopsy and CECT thorax were performed, which were normal. In the postoperative period, a peripheral smear was performed, which was also normal.

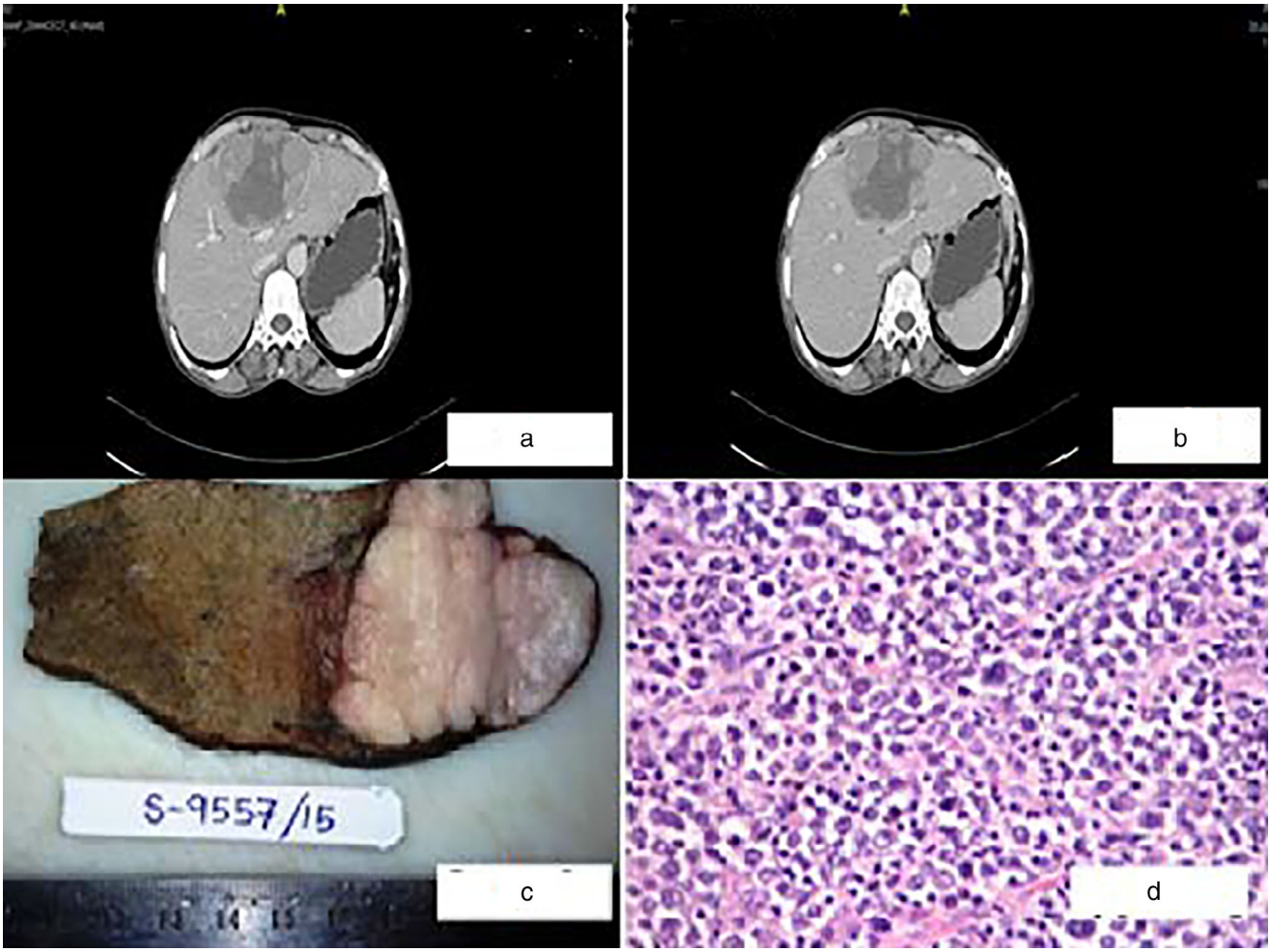

Figure 1 (a, b) Contrast enhanced computerised tomography (CECT) abdomen showing progressive enhancement in portal phase and no washout in delayed phase; (c) cut section of liver specimen showing a well-circumscribed 16 × 9 cm gray-white lobulated lesion without any necrosis; (d) histopathology pictures showing sheets of noncohesive large atypical lymphoid cells with moderate amount of eosinophilic to amphophilic cytoplasm containing round to irregular-shaped large nuclei with prominent nucleoli.

Discussion

PHL is defined as lymphoma confined only to the liver without the involvement of any other organ, such as spleen, bone marrow, lymph nodes, peripheral blood, or other tissues.[1–3] Widely accepted diagnostic criteria for PHL were proposed by Lei *et al.* in 1998[4] and are as follows: (i) at presentation, the patient's symptoms are caused mainly by liver involvement; (ii) absence of palpable lymphadenopathy and no radiological evidence of distant lymphadenopathy; and (iii) absence of leukemic blood involvement in the peripheral blood smear. The liver is the largest and most important reticuloendothelial organ of our body and is commonly involved in 40% of NHL patients at presentation, but PHL is an unusual disease and a rare form of extranodal lymphomas, accounting for less than 1% of all extranodal lymphomas.[1,2] It can occur at any age but is usually found in the fifth or sixth decade of life, with male/female ratio of 2–3/1.[4,5] The pathogenesis of PHL is still unclear, and it has been associated with Epstein Barr Virus (EBV), HCV, HIV, or human T cell lymphotropic virus (HTLV) infections; liver cirrhosis; systemic lupus erythematosus; and immunosuppressive therapy.[3,6–8] Among all these, hepatitis C infection is strongly associated with PHL.[6,9,10] However, our patient did not have any of the above conditions.

PHL presents with nonspecific symptoms such as right upper quadrant or epigastric pain, fatigue, anorexia, nausea, weight loss, or fever. It can rarely present with fulminant hepatic failure if diffuse liver involvement is present.[4,5,9–11] It may mimic other diseases related to the hepatobiliary system, such as infections, neoplasms, or cirrhosis, and even present with jaundice.[4,10,11]

Hepatomegaly is the most frequent finding. Liver function tests are usually normal, except elevation of ALP. On analysis of laboratory data, lactic dehydrogenase is elevated most of the time, while tumor markers such as AFP and CEA remain within normal ranges.[6,12] In our case as well, all the investigations were normal except elevated ALP.[4,6] Tumor markers help in the differential diagnosis of hepatocellular carcinoma or

metastatic disease. Most of the time, the diagnosis is an incidental finding during investigations for nonspecific symptoms. However, in our case, hepatomegaly was present. Radiological features of PHL are usually nonspecific, and the most common presentation on computed tomography (CT) scan is a solitary hypoattenuating lesion, which may have a central area of low intensity indicating necrosis. Findings on magnetic resonance imaging (MRI) are variable, with the most common being hypointense T1-weighted and hyperintense T2-weighted lesions.[3,4,6,7,10] Because of the rarity of this disease and the nonspecific clinical presentation, laboratory, and radiologic features, PHL may be confused with primary hepatic tumors and hepatic metastases. For diagnosis of PHL, a liver biopsy is required. However, in our case liver biopsy was not performed because the lesion was profoundly symptomatic, and due to the rarity of disease, we did not suspect PHL as a diagnosis preoperatively, and according to triple-phase contrast CT, the lesion was limited to the left lobe of liver, and it was resectable. We considered liver secondary to our first diagnosis and searched for primary diagnosis, but we did not find any.

Treatment options for PHL include surgery, chemotherapy, radiation, or varying combinations of these modalities.[9,13–15] Optimal treatment is not yet defined, but chemotherapy with CHOP-based regimens is the gold standard. The role of surgery is not fully clarified, but there are reports that liver resection followed by adjuvant chemotherapy and/or radiation results in better prognosis.[3,7,13] Yang *et al*. performed a retrospective study to assess the benefits and limits of surgery for PHL and the probability of survival after postoperative chemotherapy. They found that patients with PHL treated with liver resection followed by chemotherapy had a better outcome, and so, postoperative chemotherapy was the only prognostic factor for survival.[6]

In conclusion, this was a rare case of PHL treated with primary hepatic resection followed by postoperative R-CHOP chemotherapy regimen. It is a rare clinical entity and can be missed easily unless carefully evaluated; for example, in this case, we also diagnosed PHL after the postoperative biopsy report. PHL can be treated by all modalities: chemotherapy, surgery, and radiotherapy. Chemotherapy is the gold-standard treatment for PHL, and R-CHOP regimen is preferred. If recognized early, surgery with chemotherapy will give a better prognostic result rather than chemotherapy alone.

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