中文題目:在一乳癌患者的肝內脊隨外造血引起之猛爆性肝炎

英文題目: Intrahepatic extramedullary hematopoiesis with fulminant hepatitis in a breast cancer patient

作　　者: 裘喻翔[1*]、陳昱光[2]、張尊厚[3]、俞志誠[4]、戴明燊[5#]

服務單位: [1]三軍總醫院內科部風濕免疫科，[2]三軍總醫院內科部血液腫瘤科，[3]三軍總醫院放射診斷部，[4]三軍總醫院外科部一般外科，[5]三軍總醫院內科部血液腫瘤科

Abstract

Extramedullary hemopoiesis usually caused by failure of primary hemopoiesis sites in adult, which is bone marrow in adult. EMH happened in any organ but presented at paraspinal space mostly. Here we introduced a rare caused of fulminant hepatitis in a breast cancer patient with bone marrow metastasis related intrahepatic extramedullary hematopoiesis and secondary hemochromatosis.

Introduction

Extramedullary hemopoiesis (EMH) is a nature course in embryonic development. The hematopoiesis process was first initiated in the yolk sac then placenta, aorta – gonad – mesonephros, liver, thymus, spleen involved in, and finally are the bone marrow.[1] In adult, EMH usually due to failure of primary hemopoiesis sites as in bone marrow. The common reasons are myelofibrosis, leukaemia, lymphoma or hemoglobinopathy as thalassemia and sickle cell anemia.[2, 3] The failure or insufficiency of red blood cell production in bone marrow caused hematopoietic compensation in other region of body. The EMH could present in any organ but mostly presented at paraspinal region expecially from the thoracic region to the lumbar region.[4] When EMH involved in liver and it usually presence of hepatomegaly and splenomegaly which is secondary to microscopic diffuse infiltration of hematopoietic tissue.[2] The most of symptoms are caused by mass effect.[5] Here we present a rare cause of fulminant hepatitis by refractory hemosiderosis which may be induced by intrahepatic hematopoiesis.

Case report

A 57-year-old female with left breast cancer came for tumor staging and further treatment plan. She was proved invasive ductal carcinoma, grade 3, of the left breast. The further staging imaging study showed lung, bilateral axillary lymph nodes and multiple bony metastasis on positron emission tomography scan. She presented jaundice, poor appetite and general malaise on admission. She had blood profile which showed white blood cell 2280 /uL, hemoglobin 12.5 g/dL, and platelets 71000/uL. The biochemistry exam revealed elevated aspartate transaminase (AST) : 1128 U/L, alanine transaminase : 330 U/L, total bilirubin: 6.7 mg/dL, and direct bilirubin: 4.6 mg/dL which fulminant hepatitis was suspected. We searched the causes of fulminant hepatitis but there were negative finding on viral hepatitis A, viral hepatitis B, viral hepatitis C, human immunodeficiency virus, parasite screen, and autoimmune screen. She denied taking medications or herbs in recent months. She had traveled to China 2 months before admission. She received abdomen sonography which revealed increased sound attenuation of liver but no other focal lesions

with normal appearance of gall bladder, common bile duce, and spleen. She received magnetic resonance imaging(MRI) of the abdomen. There were few small hepatic cysts and increased hepatic iron burden. For the unknown cause of liver hemochromatosis with fulminant hepatitis, she received liver biopsy. The liver biopsy showed a picture of acute hepatitis, characterized by inflammatory infiltrate composed of a few eosinophils and neutrophils, diffuse steatosis, mild fatty change, multiple foci of spotty necrosis, and focal submassive necrosis of the hepatic tissue (Figure 1a).

We performed the CD71 immunochemical stain and revealed few CD71 positive cells infiltrated in the hepatic tissue (Figure 1b), which confirmed intrahepatic hematopoiesis. We rearranged MRI with iron deposition index (T2 value) which revealed 9.8 ms. A secondary hemochromomatosis related fulminant hepatitis was suspected. The patient received bone marrow biopsy for extramedullary hematopoiesis. The bone marrow showed poorly differentiated metastatic carcinoma and characterized by predominant intertrabecular fibrosis intermixed with some single atypical hyperchromatic tumor cells.

For the hepatitis had poor response to conservative treatment, the patient received chelating therapy with deferoxamine. There was a dramatic improvement of hepatitis after chelating therapy. (Figure 2)

Discussion

Extramedullary hemopoiesis usually caused by failure of primary hemopoiesis sites – bonemarrow- in adult, and the common causes are such as myelofibrosis, leukaemia, lymphoma, thalassemia or sickle cell anemia.[2, 3] Extramedullary hemopoiesis can present in any organ but favored liver, spleen and mostly commonly at paraspinal region.[5] Other place as intraspinal, precardiac space, pleural spaces, pulmonary interstitium, kidneys, adrenal glands, peritoneum, uterine, ovaries, tubes, pre-sacral area, central nervous system, paratrachea, thyroid, lacrimal glands, middle ear, skin, and breast were reported.[2, 3, 6-8] Bone marrow metastasis related extramedullary hemopoiesis were reported in malignant thymoma, Hodgkin's lymphoma, and infiltrating invasive lobular carcinoma of breast.[8-10] There was a report of bone marrow immunoscintigraphy TC-99M labeled antigranulocyte and antimyelocyte murine monoclonal antibodies (BW 250/183) confirming EMH in liver.[10] Although the Tc-99m labeled antibody BW 250/183 was unavailable in our clinic. Our patient confirmed extramedullary hemopoiesis in the liver biopsy by CD-71 immunochemical stain which proved of hematopoietic tissue infiltration in liver directly. The clinical presentation of fulminant hepatitis may be secondary to hematopoietic tissue related hemochromatosis. Iron chelation therapy was not yet been reported in treatment of EMH with hemosiderosis in liver, but in thalassemia patients were widely been use.[11, 12]

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