

BRAIN AND BONE METASTASIS OF HEPATOCELLULAR CARCINOMA AFTER A LIVER TRANSPLANTATION – CASE REPORT

Metástases ósseas e cerebral após transplante de fígado - Relato de caso

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ABSTRACT

Liver transplantation has improved the disease-free survival of patients with hepatocellular carcinoma, although local tumor recurrence, and less often extra hepatic metastasis are a possible outcome. We report a case of nervous system metastasis from hepatocarcinoma after liver transplantation. The patient was a sixty-four year old male with cirrhosis due to alcoholic liver disease who underwent a liver transplantation in March 2001. Histological sections of the removed liver have shown well-differentiated hepatocellular carcinoma in II and III hepatic segments. Four months after transplantation, the patient showed repeated pleural effusions and bone pain. Computerized tomography and ultrasound indicated lesions of focal tumor hepatic segments III and IV, and retroperitoneal adenomegaly, and rib and femur metastasis. The patient went into a state of mental confusion, and cranium CT showed brain metastasis in the left parietal lobe. He died in November 2001. The global survival was 8 months with a 6-month tumor-free survival. We reported this case due to the uncommon extrahepatic metastases.

Keywords: Metastase; Liver Transplantation; Liver Neoplasm.

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INTRODUCTION

Liver transplantation has been the therapeutic choice for hepatocellular carcinoma in cases of single tumors up to 5cm, cases of up to three lesions in which the larger one is up to 3cm and when the sum of all lesions does not exceed 9cm.¹ Brain metastases from hepatocellular carcinoma occur seldom in countries where this pathology is unusual. The most common metastasis sites are lungs (55%), abdominal lymph nodes (41%) and bones (28%). Metastases are often related to advanced tumor stages (TNM-IVA), to vascular tumor invasion and to the presence of larger than 3cm multifocal tumors or lesions.^{2,3} The lung, abdominal lymph nodes and bones are the typical sites of extrahepatic metastatic HCC. Most extrahepatic HCC occurs in patients with advanced intrahepatic tumor stage (stage IVA). Incidental extrahepatic lesions at CT in patients with stage I or II intrahepatic HCC are unlikely to present metastatic HCC. We report here a case of patient with hepatocellular carcinoma who had severe bone and brain metastasis.

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CASE REPORT

H.C.S, sixty-four year old, male, married, industry worker with cirrhosis due to alcoholic liver disease, Child Pugh B. He underwent liver transplantation in March 2001 and was discharged in May 2001. Histological sections of removed liver showed well-differentiated hepatocellular carcinoma in hepatic segment II of 3cm, and segment III of 2cm, without microvascular, neural or lymphatic invasion. The patient had a good outcome until the fourth month after transplantation, and then had repetitive pleural effusion and bone pain. The cytology of pleural effusion was negative to metastatic cells. Cintilographic scan in September with Galio showed metastatic tumor in the seventh right rib, left femur and acetabulum. Ultrasonography showed lesions of local tumors in segments III of 2cm and segment IV of 3cm with retroperitoneal adenomegaly. The level of alpha-fetoprotein was 2,300 ng/ml. The patient went into a state of mental confusion and the cranium computerized tomography showed brain metastasis in the left parietal lobe. He had a six-month tumor-free survival period, but died two months later. From 700 liver transplantations performed from 1991 to 2014, 150 had hepatocellular carcinoma, and from those, only this case subject presented brain and bone metastasis.

DISCUSSION

The prevalence of hepatocellular carcinoma in the Western Hemisphere is around 4:100,000 inhabitants. Due to the association with chronic liver failure, the treatment of choice is surgery.³⁻⁹ Hepatic resections are indicated in patients classified as Child Pugh A with a single lesion up to 5cm, several nodes up to 3cm

each, and the sum of all shall not exceed 9cm.⁹ Liver transplantation is indicated for patients classified as Child Pugh B or C. The estimated survival in 1, 3 and 5 years has been 87%, 82% and 70%, respectively. The perioperative mortality rate ranges from 6% to 17%.^{1,9} Despite these good results, a possible tumoral relapse is often multicellular and lethal. This outcome has been related to the depletory effects of immunosuppression on tumoral cells. Other related factors are tumor size, multifocal presentation, the existence of vascular tumor invasion, and advanced tumor stage (TMN-IV a) or higher alphafeto protein level before transplantation.^{1,9-12}

In the case reported there was no incidence of microcellular invasion and the lesion was smaller than 5cm, but the lesions were multicentral in different hepatic lobes. This may be the predisposing factor for recurrence. The brain metastases of hepatocellular carcinoma are rare even in countries where such tumor is most common; in liver-transplanted patients this occurrence is even more rare ^{2,3,9-11}. The clinical presentation of brain metastasis is usually exuberant, and it includes mental confusion and bone manifestation in the skull.⁵⁻¹⁰ The presentation in our case was headache and mental confusion. Bone pain can also occur, but is unusual and metastases should be investigated.⁹⁻¹¹

The survival rate in cases with extra hepatic tumoral recurrence is 4.6 months (mean value) and the survival rate at the end of one year is 20.3%.⁹⁻¹¹

This was the only brain and concomitant bone metastasis case in our casuistic from January 1991 to December 2014 in about 650 liver transplantations.

The occurrence of brain metastasis of hepatocellular carcinoma after a liver transplantation is rare with few reports in the literature.

RESUMO

O transplante hepático melhorou a sobrevida livre de doença em pacientes com carcinoma hepatocelular, embora a recidiva tumoral local, e menos frequentemente, a metástase extrahepática possam acontecer. Relatamos aqui um caso de metástase óssea e cerebral de câncer de fígado no sistema nervoso ocorridas após um transplante de fígado. Tratava-se de paciente do sexo masculino, 64 anos com cirrose por doença hepática alcoólica, submetido a transplante hepático em março de 2001. Seções histológicas do fígado removido apresentavam carcinoma hepatocelular bem diferenciado nos segmentos hepáticos II e III. Quatro meses após o transplante, o paciente apresentou derrame pleural e dor óssea. Na investigação diagnóstica detectaram-se ao ultrassom e tomografia computadorizada lesões tumorais nos segmentos III e IV hepáticos focais, adenomegalia retroperitoneal e metástase óssea em costela e fêmur. O paciente entrou em estado de confusão mental e a tomografia de crânio mostrou presença de metástase cerebral no lobo parietal esquerdo. Ele morreu em novembro de 2001. A sobrevida global foi de oito meses, com sobrevivência livre de doença de seis meses. Dada a raridade dessas lesões, reportamos esse caso.

Descritores: Metástases; Transplante de Fígado; Câncer de Fígado

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