

Radiofrequency ablation of recurrent cholangiocarcinoma after orthotopic liver transplantation - a case report

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Abstract

AIM: To report the use of radiofrequency ablation in the treatment of recurrent cholangiocarcinoma in the transplanted liver.

METHODS: A lady who underwent orthotopic liver transplantation (OLT) for intrahepatic cholangiocarcinoma recurrence of tumour 13 mo after transplantation in spite of adjuvant chemotherapy. Her recurrent tumour was treated with radiofrequency ablation.

RESULTS: She survived for 18 mo following the recurrence of her tumour.

CONCLUSION: Radiofrequency ablation can be used safely in the transplanted liver to treat recurrent tumour.

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Key words: Cholangiocarcinoma; Orthotopic liver transplantation; Radiofrequency ablation; Recurrence

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INTRODUCTION

Intra hepatic cholangiocarcinoma (IHCC) is a primary adenocarcinoma of the intrahepatic biliary tree. It is the second most common primary liver cancer after hepatocellular cancer (HCC)^[1]. Although surgical resection is the treatment of choice affording the best outcome, many patients are unresectable because of associated advanced liver disease or advanced stage of the tumour^[2-4]. Occasional patients have experienced long-term survival (10% to 20% at 5 years) after orthotopic liver transplantation (OLT) for cholangiocarcinoma, suggesting that this procedure has the potential to prolong survival in this disease^[5,6].

However, recurrence rate after OLT is high and there is no effective treatment for recurrent liver tumour.

We describe a case of IHCC, which underwent OLT for bilobar disease and had a recurrence after 14 mo. Her recurrent tumour was treated using chemotherapy and radiofrequency ablation and the patient survived for 19 mo after recurrence. This is the first case report of using radiofrequency ablation in

the treatment of recurrent liver tumour after liver transplantation.

CASE REPORT

A 59 year old lady underwent laparoscopic cholecystectomy for symptomatic gall stone disease in January 1998 at a district general hospital. During surgery she was found having a single lesion in left lobe of her liver. Biopsy of the lesion suggested it to be a metastatic adenocarcinoma. Investigation for the primary site did not reveal any evidence of primary tumour. The patient was referred to our unit for further management.

On review of the histology slide in our Pathology Department, the liver lesion was found to be an intra-hepatic cholangiocarcinoma.

CT, MRI and laparoscopy were carried out to stage the disease. The staging investigations revealed a bilobar liver tumor without any evidence of extra hepatic diseases.

She underwent orthotopic liver transplantation (OLT) in May 1999 for her intrahepatic cholangiocarcinoma. Her postoperative recovery was uneventful and her immunosuppression regimen consisted of Tacrolimus, mycophenolate and steroids.

After operation, she was started on chemotherapy using 5 fluorouracil (200 mg/m²), doxorubicin (10 mg/m²) and mitomycin (3 mg/m²) in a 56-d cycle. She received three cycles of chemotherapy and a follow-up CT scan in January 2000 (7 mo after OLT) showed no evidence of tumor recurrence in her graft and her tumour markers (CA 19-9) were within normal limit.

A repeat CT scan in July 2000 (13 mo after OLT) showed 3 lesions in the liver distributed in both lobes of the liver and ultrasound-guided biopsies of the lesion confirmed it to be a recurrent cholangiocarcinoma. She underwent radiofrequency ablation of her liver tumor under ultrasound guidance.

Result of radiofrequency ablation was monitored using tumor marker and CT scan. After ablation she was also started on palliative chemotherapy using epirubicin, cisplatin and 5FU which consisted of infusional 5 fluorouracil, with three weekly infusions of cisplatin and intravenous bolus of epirubicin. After her 2nd cycle of chemotherapy she developed peripheral neuropathy and renal dysfunction thus epirubicin and cisplatin were stopped and 5 FU was continued as a single agent. She received 23 cycles of 5FU.

Her disease was static till October 2001. But in November her tumor marker started rising and a CT scan done in November 2001 showed multiple lesions in the liver and evidence of portal vein encasement by the tumor.

She died of the progressive tumor in February 2002.

DISCUSSION

In the age of organ shortage, the role of OLT in cholangiocarcinoma (CC) treatment is controversial, as its recurrence rate is high. In a recent report of largest single centre experience of OLT for CC, the median time to recurrence was 10.6 mo and 77.8% of patients developed recurrence within 2 years after OLT. The 1- and 3- year survival rates were 71% and 35% respectively. Recurrent tumour was the major cause of death in 40% of patients^[7]. Survival after OLT for cholangiocarcinoma in the absence of effective adjuvant therapy is discouraging, with an

average 3-year survival rate of 20%, mainly because of death from malignant disease relapse^[5,6].

The result of OLT for IHCC is not very clear, as there are not many large series reported. In a series by Pichlmayer *et al*^[6], the median survival time in 18 patients with IHCC after liver transplantation was 5 mo and the 1-year survival rate was 13.9%.

The poor outcome in all series was mainly due to death from tumor recurrence in the liver. Postoperative chemotherapy alone or in combination with irradiation therapy could not prolong survival. The Baylor group reported a disease-free survival rate of only 13% using this approach, and the University of Pittsburgh reported a 4-year survival rate of 22%. In our case, tumor recurred 13 mo after OLT although the patient received adjuvant chemotherapy. As shown in other studies, postoperative adjuvant therapy is not very effective in preventing recurrence and there is no effective treatment for recurrent liver tumors.

Radiofrequency ablation (RFA) is a relatively new technique to ablate local tumors. RFA has been used extensively to treat primary and metastatic liver tumors^[8,9]. RFA has also been used to treat patients with liver tumors associated with advanced liver diseases waiting for liver transplantation to prevent tumor growth^[10]. The recurrence after surgical resection of cholangiocarcinoma is also common and treatment of recurrent cholangiocarcinoma using radiofrequency ablation has been shown to be effective in a case report^[11]. Our study shows that RFA can also be used to treat local recurrence of cholangiocarcinoma after OLT. The advantage of RFA is that it can be repeated and carried out percutaneously.

This study suggests that radiofrequency ablation can be used safely and effectively in patients with tumor recurrence in the liver after OLT for cholangiocarcinoma. Probably the use of RFA can also be extended to treat other recurrent tumors of the liver after OLT.

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