Successful Management of Metachronous Liver Metastasis After Pancreatoduodenectomy for Pancreatic Ductal Carcinoma Using Hepatectomy and Chemotherapy: A Case Report

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Abstract. A 63-year-old woman was admitted to our Hospital for treatment of pancreatic head ductal carcinoma, and underwent pancreatoduodenectomy (PD) in October 2007. At one month after surgery, she received systemic adjuvant chemotherapy using S-1 for three months. Because the serum carbohydrate antigen 19-9 (CA19-9) value was elevated at 23 months after surgery, the patient underwent systemic chemotherapy using gemcitabine. The serum CA19-9 decreased, but abdominal Computed Tomography (CT) revealed a hepatic metastasis in the ventrolateral segment of left hepatic lobe at 28 months after surgery. The chemotherapy was changed to oral S-1. At 35 months after surgery, abdominal CT revealed reduction of liver metastasis and that the serum CA19-9 was normalized, but chemotherapy had to be withdrawn because of severe myelosuppression. Because of her good general condition, the patient underwent partial hepatectomy for the liver metastasis. Histopathological examination demonstrated a complete response. Thirty six months after hepatectomy and 6 years after PD, the patient remains well without recurrence. We herein report a case of successful treatment for metachronous liver metastasis from pancreatic ductal carcinoma after PD by chemotherapy and hepatectomy and review the current literature.

In spite of recent progression in diagnostic imaging modalities, surgical procedures, and other systemic therapies, the prognosis of pancreatic ductal carcinoma is extremely poor (1). In Japan, pancreatic ductal carcinoma is the fifth leading cause of cancer-related death, with almost 25,000 patients dying of pancreatic cancer in 2007 (1). Moreover, prognosis of patients with liver metastasis after surgical resection of pancreatic ductal carcinoma is very poor, with a reported median survival of 3.8 to 6.3 months (2). Gemcitabine, a deoxycytidine analog, is the most common first-line treatment for liver metastasis from pancreatic cancer (3). However, recent reports on hepatic resection for metachronous liver metastasis from pancreatic ductal carcinoma demonstrate good outcome in limited cases (4-6). We herein report a case of successful treatment for metachronous liver metastasis from pancreatic ductal carcinoma after pancreatoduodenectomy (PD) by chemotherapy and hepatectomy.

Case Report

A 63-year-old woman was referred to our hospital for obstructive jaundice. She was diagnosed as having pancreatic ductal carcinoma, for which subtotal stomach-preserving PD was performed in October, 2007. The tumor was histopathologically-diagnosed as well-differentiated tubular adenocarcinoma. The tumor was classified as pStage III, according to the international Union Against Cancer (UICC) TNM classification (7).

At 1 month after surgery, adjuvant systemic chemotherapy using S-1, an oral fluoropyrimidine, was administered at 100 mg/day for four weeks, followed by two weeks of rest. Because severe myelosuppression was encountered among four courses of S-1 regimen, adjuvant chemotherapy was withdrawn at 4 months after surgery, when the carbohydrate antigen 19-9 (CA19-9) value was normal and follow-up abdominal Computed Tomography (CT) revealed no distant metastasis or local recurrence. However, serum CA19-9 started to rise at 23 months after surgery when we started systemic chemotherapy with gemcitabine at 1,200 mg once-a-week for three weeks, followed by one week of rest. After four courses of this gemcitabine regimen, serum CA19-9 decreased, but abdominal CT revealed a hepatic metastasis in the ventrolateral segment of
left hepatic lobe 28 months after surgery (Figure 1a).

Therefore, we changed the chemotherapy to S-1 regimen which was administered at 80 mg/day for four weeks, followed by two weeks of rest. At 35 months after surgery, abdominal CT revealed reduction of liver metastasis and no other metastasis (Figure 1b), with a normal serum CA19-9 (Figure 2), but chemotherapy was withdrawn, again because of severe myelosuppression. Because of her good general condition, the patient underwent partial hepatectomy of liver metastasis in September 2010. The surgical specimen measured 38×34 mm and revealed a nodular tumor under the liver subcapsule (Figure 3a). Histological diagnosis demonstrated complete necrosis of the lesion (Figure 3b). In addition, there was infiltration of many lymphocytes within the mass (Figure 3c).

Her postoperative course was uneventful. After discharge, the patient was closely followed-up, at 3-month intervals, using ultrasound or CT and measurement of CA19-9, which decreased to a normal value before hepatectomy. Systemic adjuvant chemotherapy was not given after hepatectomy because of the possible occurrence of adverse events. The patient is alive and well, without recurrence, at six years after PD and at 37 months after hepatic resection.

Discussion

Thirty-nine percent to 80% of patients with invasive ductal carcinoma of the pancreas, develop liver metastasis and the prognosis is poor even if curative pancreatectomy is achieved (2, 8). Although many therapies for this type of cancer have been performed, including systemic chemotherapy, the outcome remains dismal.

The efficacy of hepatic resection for liver metastasis has rarely been reported (4, 9-11). Recently, however long-term survival after hepatectomy for liver metastasis from pancreatic ductal cancer limited to the liver by chemotherapy has been reported (12, 13).

In our case, the patient was unable to tolerate adjuvant chemotherapy because of myelosuppression. For recurrence limited to the liver, during systemic chemotherapy, we performed hepatectomy because there were no new lesions except for the isolated liver metastasis. In spite of no adjuvant chemotherapy after hepatectomy, the patient obtained a long disease-free survival of more than three years. Standard treatment for liver metastases from pancreatic ductal cancer is chemotherapy, but surgical resection can be a therapeutic option when the liver metastasis is a single and resectable lesion and when treatment is difficult due to continuous adverse effects. It is, therefore, important to collect more data on such cases to improve prognosis of liver metastasis from pancreatic ductal carcinoma.

References


Received January 4, 2014
Revised February 22, 2014
Accepted February 24, 2014