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SOLITARY PANCREATIC METASTASIS FROM RENAL CELL CARCINOMA

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A case of asynchronous bilateral renal cell carcinoma with pancreatic metastasis is described. Left nephrectomy and tumorectomy in the right kidney were performed. Solitary metastasis to the pancreas without symptoms was treated by distal pancreatectomy with tumor and splenectomy. Although bilateral renal cell carcinomas were histologically renal cell carcinoma (clear cell subtype, grade 2), the resected pancreatic tumor was renal cell carcinoma with sarcomatoid change. Therefore, the metastatic tumor had a more malignant potential than the primary tumor. The pancreatic metastasis was seen at 6 years 10 months and 2 years 6 months after left nephrectomy and enucleation of the right renal tumors, respectively. The patient is alive without disease and is being treated by α -interferon for 12 months after distal pancreatectomy.

A careful long-term follow-up of the patient with renal cell carcinoma seems to be necessary.

Key words: Renal cell carcinoma, Solitary metastasis, Pancreas

INTRODUCTION

Renal cell carcinoma is a malignant tumor with a high rate of metastatic spread, the most common metastatic site being the lung followed by bone, lymph nodes, brain and liver¹⁾. On the other hand, few patients alive after resection of pancreatic metastasis from renal cell carcinoma have been reported.

We report here a case of pancreatic metastasis from bilateral renal cell carcinoma without symptoms and reviewed the relevant literature.

CASE REPORT

A 52-year-old male visited our hospital with the complaint of asymptomatic macrohematuria on 15, November 1981. The physical examination revealed no abnormalities. Laboratory data showed slight elevation of transaminase. Renal function was within normal limits. Urinalysis revealed no abnormalities (Class I \times 3 times).

Abdominal plain film showed no abnormal calcification. Intravenous pyelography showed swelling of the left kidney and deformity and filling defect of the left renal pelvis. Selective left renal angiography showed a tumorous lesion with hyper-

vascularity in the left kidney. Abdominal computerized tomography showed enhanced mass with contrast medium in the left kidney.

Radical left nephrectomy was performed on 10, December 1981 under the diagnosis of renal cell carcinoma. Gross appearance of the resected kidney was 415 g in weight and the tumor located in the lower pole of the kidney, was yellow and 6 cm \times 6 cm \times 6 cm in size. Histological examination revealed renal cell carcinoma of the left kidney (clear cell subtype, grade 2, pT_{2a}, pNo, pMo) (Fig. 1). He was discharged on 23, December 1981 and followed up at our clinic. Although drip infusion pyelography showed no tumorous lesion, abdominal computerized tomography showed two small tumorous lesions in the right kidney in December, 1985. He was admitted to our hospital on 4 February 1986. Physical examination and laboratory data revealed no abnormalities. Selective right renal angiography showed tumors with hypervascularity in the right kidney. Chest X-ray and bone scintigraphy revealed no abnormalities. Tumor enucleation was performed for two tumorous lesions on 10 February, 1986 under the diagnosis of renal cell carcinoma of the right kidney. Resected

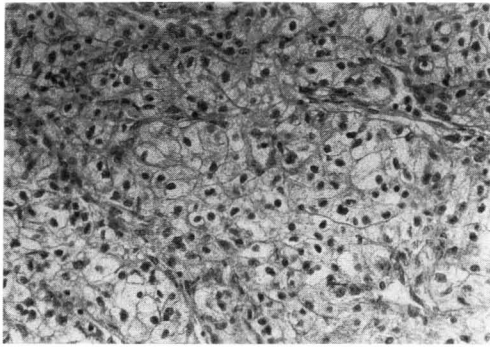


Fig. 1. Histological examination showed the left renal tumor was renal cell carcinoma (clear cell subtype, grade 2) (H&E $\times 60$).

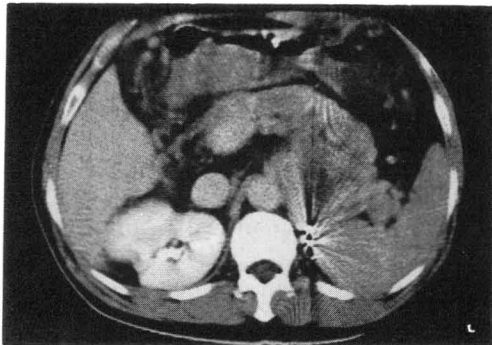


Fig. 2. Abdominal computerized tomography showed a mass in pancreas which was not enhanced by contrast medium, and deformity of the right kidney induced by tumorectomy.

tumors had macroscopically a white-yellow appearance, and were 20 g and 1 g in weight, 20 mm \times 30 mm \times 15 mm and 8 mm \times 8 mm \times 3 mm in size, respectively. Histological examination revealed renal cell carcinoma of the right kidney (clear cell subtype, grade 2, pT1, pNo, pMo). Postoperatively his renal function temporarily worsened (BUN ; 25 mg/dl, Cr ; 2.0 mg/dl), but it returned to the normal range in several days. He was discharged on 3 March 1986, and treated by medroxyprogesterone acetate in our clinic. Although he had no symptoms, abdominal computerized tomography was performed on June, 1988, and it showed a mass in pancreas which was not enhanced by contrast medium, and deformity of the right kidney (Fig. 2). We thought that the deformity of

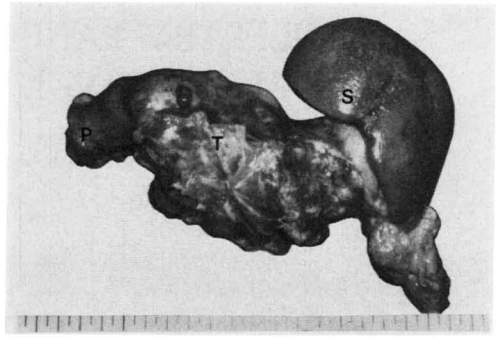


Fig. 3. Resected pancreas tumor was macroscopically yellow-reddish and weighed 150 g. T; Tumor, S; Spleen, P; Pancreas

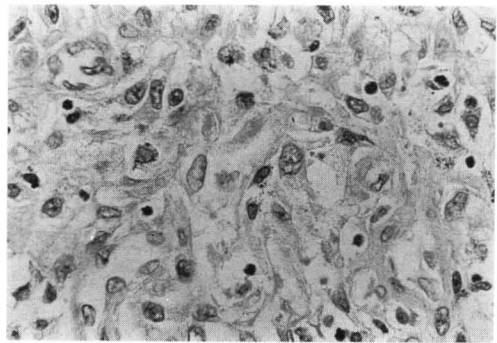


Fig. 4. Histological examination of resected pancreas tumor revealed renal cell carcinoma with sarcomatoid change. (H&E $\times 100$)

the right kidney was induced by enucleation of tumors, because the deformity was detected one month after the operation, and ultrasonography and angiography did not show any tumorous lesion. Laboratory data were within normal limits. The physical examination revealed a hard mass palpable in the upper abdomen. Ultrasonography showed an echogenic mass near the tail of the pancreas. Angiography showed hypervascularity and pooling of contrast medium in the tumorous lesion. The levels of all tumor markers, such as CA 19-9, CA 125 and CEA, were within normal limits. Therefore, a metastatic pancreas tumor was suspected. On 20, August, 1988, distal pancreatectomy and splenectomy were performed, because the frozen section of the tumor obtained during the operation showed renal cell carcinoma. The resected tumor

Table 1. Resected cases of pancreas metastasis from renal cell carcinoma in the literature

Case	Age	Sex	Author (Year)	Primary site	Metastatic site of pancreas	Chief complaints	Size of metastatic lesion	Operation	Prognosis (after pancreatectomy)
1	50	M	Marpuand (1971)	rt ¹⁾ -kidney	head	jaundice	φ 5 cm	PD ⁴⁾ + rt-nephrectomy (simultaneous)	alive without disease (28 mos)
2	66	M	Guttman (1972)	rt-kidney	periampullar (head)	weight loss	1.5 cm	rt-nephrectomy → TP ⁵⁾ (13 years ago)	dead with cerebro-vascular accident (23 days)
3	60	M	Hermanutz (1977)	lt ²⁾ -kidney	head	abdominal pain and discomfort	fist size	lt-nephrectomy → PD (14 years ago)	dead with intestinal bleeding (19 days)
4	43	F	Saxon (1980)	bil ³⁾ -kidney	head	left flank mass	φ 5 cm	bil-nephrectomy → PD (6 mos ago)	alive without disease (12 mos)
5	76	M	Yazaki (1981)	rt-kidney	body	scrotal discomfort high fever	φ 1.5 cm	rt-nephrectomy + PD (simultaneous)	alive without disease (9 mos)
6	58	F	Weerdenburg (1984)	rt-kidney	total	jaundice, weight loss, discomfort	multiple lesions	rt-nephrectomy → TP (13 years ago)	alive with disease (10 mos)
7	55	M	Skaarup (1984)	bil-kidney	head and tail	fatigue, anemia renal dysfunction	two lesions	rt-nephrectomy (13 years ago) lt-partial nephrectomy → TP (2 years ago)	dead with uremia (15 mos) (with disease)
8	72	M	Kishimoto (1985)	lt-kidney	total	jaundice	15 cm × 7.5 cm × 3 cm	lt-nephrectomy → TP (simultaneous)	dead with malnutrition (without disease) (6 mos)
9	66	F	Audisio (1985)	rt-kidney	head	weakness, weight loss	φ 8 cm	rt-nephrectomy → PD (20 years ago)	alive without disease (12 mos)
10	66	F	Carini (1988)	bil-kidney	head	weekness, weight loss abdominal pain	φ 7 cm	lt-nephrectomy (12 years ago) rt-partial nephrectomy → PD (10 mos ago)	alive without disease (13 mos)
11	59	M	Gohji (1989)	bil-kidney	tail	none	9 cm × 4 cm	lt-nephrectomy (6 years 10 mos ago) rt-tumorectomy → DP (2 years 6 mos ago)	alive without disease (12 mos)

1) rt : right, 2) lt : left, 3) bil : bilateral, 4) PD : pancreaticoduodenectomy, 5) TP : total pancreatectomy, 6) DP : distal pancreatectomy with splenectomy

was 9.0 cm × 4.0 cm, weighed 150 g, and was yellow-reddish (Fig. 3). Histological examination revealed renal cell carcinoma with sarcomatoid change (Fig. 4). He was discharged on 10, September, 1988, and was treated by daily muscular injection of α -IFN (300×10^4 Units/day) in our clinic. His condition was good, and his blood glucose was within normal limits for 12 months after operation.

DISCUSSION

Renal cell carcinoma is the third most common malignant tumor in the urological field in Japan. Renal cell carcinoma has several characteristics; 1) spontaneous regression of metastatic lesions²⁾, 2) two growth types, slow growth and rapid³⁾, and, 3) metastatic spread may occur many years after successful nephrectomy⁴⁾.

The metastatic spread of renal cell carcinoma may develop in any organ. Pancreatic metastasis from renal cell carcinoma is rare. Although Klugo et al⁵⁾ reported that common metastatic sites were lungs, bones, lymph nodes, skin and liver, pancreatic metastasis occurred in only 2.8% of the 101 cases. Moreover, Abrams et al⁶⁾ reported pancreatic metastasis was 6% among 1000 autopsy cases. The pancreas is reportedly one of the least common metastatic sites. Only 11 resected cases of pancreatic metastasis from renal cell carcinoma including our case have been reported in the literature up to 1988⁷⁻¹⁶⁾ (Table 1). The patients were between 43 and 76 years old, 7 patients were males and 4 were females (mean age; 61 years). The primary site of renal cell carcinoma was in the right kidney in 5 patients and in the left kidney in 2 patients and bilateral in 4 patients. The metastatic site in the pancreas was in the pancreatic head in 6 patients, in the pancreatic tail in 1, in the head and tail in 1, in the body in 1, and in the total pancreas in 2. Among 11 cases, pancreatic metastasis was detected after nephrectomy in 8 cases, and the period of recurrence was from 6 months to 20 years after nephrectomy. In the others the lesion was detected at the first visit to the clinic. Nephrectomy and

pancreatectomy were performed in all cases. In our case, left nephrectomy was performed on 10 December 1981, and right tumorectomy was performed on 10 February 1986. All resected tumors were histologically renal cell carcinoma of the kidney (clear cell subtype, grade 2). No lymph node was involved. Resected tumorous tissue from the pancreas was histologically renal cell carcinoma with sarcomatoid change. It seemed that the metastatic lesion had a malignant potential than the primary lesion.

In our case, pancreatic metastasis seemed to be caused by the vessel route, because of no direct invasion from kidney or its adjacent organs, and no lymph nodes were involved. Freed¹⁷⁾ and Tolia et al.¹⁸⁾ reported that the most effective treatment is to resect the metastatic lesion, if the patient has solitary metastasis in renal cell carcinoma. We agreed that an aggressive surgical resection may be justified if the metastasis was solitary because there was no effective chemotherapy or radiation therapy for renal cell carcinoma. However, the prognosis is poor, and the 5-year survival rate is 29 to 35% in patients with resection of solitary metastatic lesion^{17,18)}. Although among 11 reported cases, no patient died of cancer, 4 patients died with complications such as renal failure or cerebrovascular accident from 13 days to 15 months after resection of pancreas metastasis. The others were alive with (one patient) or without cancer (6 patients). Only our case had no symptoms, his pancreatic metastasis was detected by abdominal computerized tomography during the follow-up period of renal cell carcinoma. Therefore, a careful long-term follow-up of patients with renal cell carcinoma seemed necessary, since the metastatic lesion generally has a more malignant potential than the primary lesion.

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和文抄録

腎細胞癌の膵転移の1例

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根治的左腎摘除術施行後6年10カ月, および右腎の腫瘍核出術施行後2年6カ月に孤立性膵転移をきたした異時性両側性腎細胞癌の1例を報告する. 腫瘍を含めた膵尾部切除と脾摘が施行された. 両側の腎細胞癌は組織学的に clear cell subtype, grade 2 であったが, 膵転移巣は sarcomatoid change を伴った grade 3 の腎細胞癌であった. すなわち, 転移巣は原

発巣に比べより高い悪性度を有していた. 患者は, その後 α -interferon 療法を受け膵尾部切除術後12カ月を経た1989年8月現在明らかな腫瘍の再発を認めず健在である. 腎細胞癌では, 長期にわたる注意深い follow up が必要である.

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