

AMCoR

Asahikawa Medical College Repository <http://amcor.asahikawa-med.ac.jp/>

泌尿器科紀要 (2007.09) 53巻9号:631～634.

腎結石に合併したCA125,CA19-9産生性腎盂乳頭状腺癌の1例
(CASE REPORT OF RENAL PELVIC ADENOCARCINOMA
ASSOCIATED WITH A RENAL STONE THAT PRODUCED
CARBOHYDRATE ANTIGEN 125 AND CARBOHYDRATE ANTIGEN 19
-9)

安住誠, 芳生旭辰, 沼田篤, 谷口成実, 佐賀祐司, 橋本博,
柿崎秀宏

Title:

Case report of renal pelvic adenocarcinoma associated with a renal stone that produced carbohydrate antigen 125 and carbohydrate antigen 19-9

Authors:

Makoto Azumi, Kyokushin Hou, Atsushi Numata, Narumi Taniguchi, Yuji Saga, Hiroshi Hashimoto and Hidehiro Kakizaki

Institution:

The Department of Urology, Asahikawa Medical College

Key Words:

renal pelvic adenocarcinoma, carbohydrate antigen 125, carbohydrate antigen 19-9, renal stone, paclitaxel

Running title:

Azumi, et al.: Renal pelvic adenocarcinoma, renal stone

Abstract

A 68-year-old man underwent left side simple nephrectomy for symptomatic severe hydronephrosis with decreased function due to renal stone. Because of severe adhesion around the kidney, the renal pelvic wall was torn during the operation. Pathological diagnosis was papillary adenocarcinoma of the renal pelvis with positive staining for carbohydrate antigen 125 (CA125) and carbohydrate antigen 19-9 (CA19-9). Retrospective analysis of preoperative blood sample showed a high level of CA125 and CA19-9. Four-cycle adjuvant chemotherapy with paclitaxel/carboplatin (TJ regimen) was performed. However, local recurrence developed 1 month after the termination of chemotherapy. Although papillary adenocarcinoma of the renal pelvis is extremely rare, the possibility of renal pelvic tumor should be kept in mind for patients who have long-standing renal stone and hydronephrosis with irregularity at the renal pelvic wall. CA125 and CA19-9 can be a useful marker for upper urinary tract tumor.

Introduction

Carbohydrate antigen 125(CA125) and carbohydrate antigen 19-9(CA19-9) are widely used as a tumor marker of gastrointestinal tract. While CA125 and CA19-9 are known to elevate in urinary tract tumor, there are a few reports of papillary adenocarcinoma producing CA125 and CA19-9. We report a case of renal pelvic adenocarcinoma associated with a renal stone that produced CA125 and CA19-9.

Case report

A 68-year-old man was referred to our hospital because of persistent left upper abdominal pain and body weight loss of 10kg for previous 1 month. He had been previously treated for left renal staghorn calculi in our hospital but lost to follow-up. Abdominal enhanced CT scan (Figure 1) revealed marked left hydronephrosis and renal stone. Retrospective re-evaluation of CT-scan did indicate the presence of irregular masses at the renal pelvic and calyceal walls (Figure 1). Percutaneous nephrostomy was already performed at the referring hospital, but the urine drainage was not good and the symptom did not improve. Under the diagnosis of pyonephrosis due to renal stone, nephrectomy by a flank incision was performed.

Because of severe adhesion around the kidney, the peritoneum was opened and the renal pelvic wall was torn during the operation, and cloudy urine together with tissue-like debris came out into the surgical field. Pathological diagnosis was well differentiated papillary adenocarcinoma of the renal pelvis (Figure 2A) not papillary urothelial carcinoma or papillary renal cell carcinoma. Immunohistochemical study revealed that the cytoplasm of the cancer cells stained positively for carcinoembryonic antigen (CEA), CA125 and CA19-9 (Figure 2B, C). Retrospective analysis of preoperative blood sample showed a high level of CA125 (69 unit/ml) and CA19-9 (752 unit/ml) but not CEA. Although there was no obvious distant metastasis, intraoperative implantation of tumor cells was highly suspected. Upon the informed consent, an adjuvant chemotherapy with 4 cycles of paclitaxel(175 mg/ m²) and carboplatin (dose adjusted to an area under the curve of 5) (TJ regimen) was performed. Serum level of CA19-9 and CA125 once decreased to 45 unit/ml and 12 unit/ml, respectively. However 1 month after the last cycle of chemotherapy, abdominal CT scan revealed a local recurrence of the tumor. Thereafter obstructive ileus developed due to tumor invasion, and serum level of CA19-9 and CA125 increased rapidly (553 unit/ml and 34 unit/ml, respectively). He has been receiving palliative treatment, and alive for 7 months after the last cycle of

chemotherapy.

Discussion

Papillary adenocarcinoma of the upper urinary tract is extremely rare and only five cases producing CA125, CA19-9 or CEA have been reported (Table 1).¹⁻⁵ To our knowledge this is the sixth case of papillary adenocarcinoma of the upper urinary tract that showed production of CA125, CA19-9 or CEA.

Ward suggested that adenocarcinoma of the urinary tract may result from urothelial changes caused by urolithiasis and chronic inflammation causing cystic and glandular metaplasia.⁶ Some urothelial tumors show elevation of these tumor markers, but in most of the urothelial tumors these markers do not elevate and they can not be a reliable indicator for tumor screening. Some reports have stated that the higher level of these markers correlate with the higher histological grade.⁷⁻⁹ In these cases, measurement of these tumor markers may be useful to monitor the effect of chemotherapy and the state of the disease during follow-up. In the present case, tumor recurrence was associated with an elevation of CA125 and CA19-9.

Long-standing renal stone can be associated with upper

urinary tract tumor including squamous cell carcinoma. The possibility of upper urinary tract tumor should be kept in mind for patients who have long-standing renal stone and hydronephrosis with irregular masses around the renal pelvic wall.

There is no established regimen for chemotherapy for advanced primary adenocarcinoma of the urinary tract. Onishi *et al.* reported that M-VAC (methotrexate, vinblastine, doxorubicin, and cisplatin) regimen of chemotherapy for papillary adenocarcinoma was not effective, but four cycles of TJ regimen resulted in complete disappearance of the primary tumor in the ureter and paraaortic lymph node swelling without severe side effects.⁴ Sakata *et al.* reported a case of primary adenocarcinoma of the renal pelvis and ureter producing α -fetoprotein (AFP) that was treated effectively with paclitaxel, ifosfamide and cisplatin (TIP regimen).¹⁰ In the present case, 4 cycles of adjuvant chemotherapy with TJ regimen temporarily decreased serum level of CA125 and CA19-9, but could not prevent the local recurrence.

References

- 1) Haitel A, Wiener HG, Susami M: Primary adenocarcinoma of the ureter. Case report with immunohistochemical characterization. *Pathol Res Pract* **192**: 81, 1996
- 2) Iwaki H, Wakabayashi Y, Kushima R, et al.: Primary adenocarcinoma of the ureter producing carbohydrate antigen 19-9. *J Urol* **156**: 14, 1996
- 3) Aida Y, Kudo O, Yamakawa K, et al.: Papillary adenocarcinoma of the ureter producing carcinoembryonic antigen and carbohydrate antigen. *J Urol* **168**: 2535, 2002
- 4) Onishi T, Franco EO, Shibahara T, et al.: Papillary adenocarcinoma of the renal pelvis and ureter producing carcinoembryonic antigen, carbohydrate antigen 19-9 and carbohydrate antigen 125. *Int J Urol* **12**: 214-216, 2005
- 5) Kobori Y, Shigehara K, Amano T, et al.: Port site metastasis of primary adenocarcinoma of the renal pelvis after a laparoscopic nephrectomy: a case report. *Acta Urologica Japonica* **51**: 105-108, 2005
- 6) Ward AM: Glandular neoplasia within the urinary tract: The etiology of adenocarcinoma of the urothelium with a review of the literature. *VirchowsArch Abt A Path Anat* **352**: 296-311, 1971
- 7) Nakatsu H, Kobayashi I, Onishi Y, et al.: ABO(H)blood group

antigens and carcinoembryonic antigens as indicators of malignant potential in patients with transitional cell carcinoma of the bladder. J Urol **131**: 252, 1984

8) Abel PD, Cornell C, Buamah PK, et al.: Assessment of serum CA 19.9 as a tumor marker in patients with carcinoma of the bladder and prostate. Brit J Urol **59**: 427, 1987

9) Abe T, Konari S, Ogata M, et al.: A case of CEA-producing renal pelvic and ureteral cancer. Acta Urol Jpn **49**: 75-79, 2003

10) Sakata Y, Onishi T, Yamada Y, et al.: α -Fetoprotein producing renal pelvic and ureter tumor. J Urol **166**: 1830, 2001

Legends for Figures

Figure 1 Abdominal enhanced CT-scan revealed marked left hydronephrosis with renal pelvic stone. Irregular multiple masses were seen at the renal pelvic and calyceal walls.

Figure 2 A: Histopathological examination of the renal pelvic tumor showed well differentiated papillary adenocarcinoma (H-E, ×200). B: Immunohistochemical staining for CA125 showed cytoplasmic staining (×200). C: Immunohistochemical staining for CA19-9 showed cytoplasmic staining (×200).

Table 1 Reported cases of tumor markers (CEA, CA19-9, and CA125) positive adenocarcinoma of the upper urinary tract

腎結石に合併した CA125、CA19-9 産生性腎

盂乳頭状腺癌の 1 例

安住 誠、芳生 旭辰、沼田 篤、谷口 成実、

佐賀 祐司、橋本 博、柿崎 秀宏

旭川医科大学泌尿器科学講座

患者は 68 歳、男性。腎結石による腎機能低下を伴った症候性高度水腎症のため左腎摘出術が施行された。腎周囲の強度の癒着のため、術中腎盂壁が破れた。病理学的診断は腎盂乳頭状腺癌で、CA125、CA19-9 に陽性所見を示した。術前の血液検体を調べたところ CA125 および CA19-9 が高値であることが明らかとなった。術後化学療法としてパクリタキセルとカルボプラチンを用いた T J 療法が 4 サイクル施行された。しかし化学療法終了 1 ヶ月後に局所再発した。腎盂乳頭状腺癌は極めて稀な疾患であるが、長期にわたる腎結石や腎盂壁の不整を伴った水腎症が認められ

た場合、腎盂腫瘍の可能性があることを忘れてはならないであろう。CA125およびCA19-9は上部尿路腫瘍の有用なマーカーになり得る。

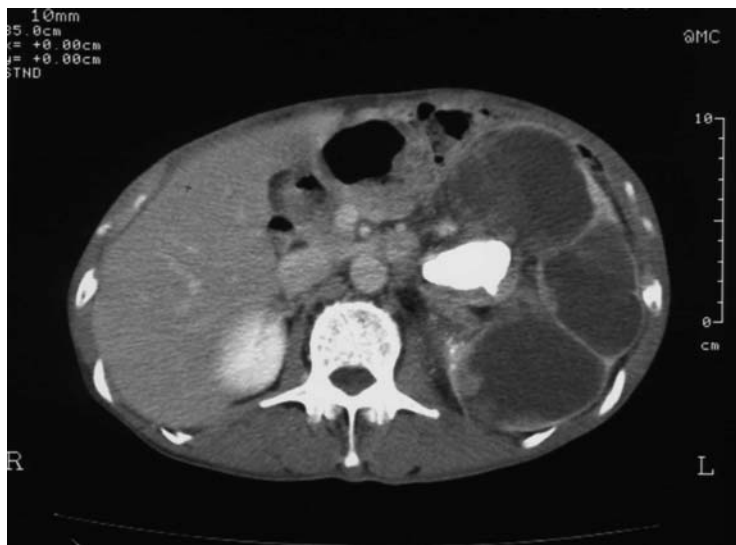


Figure 1

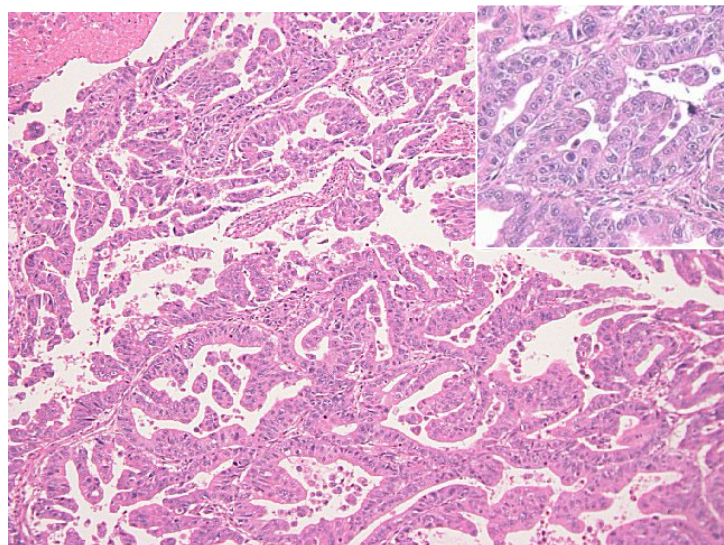


Figure 2A

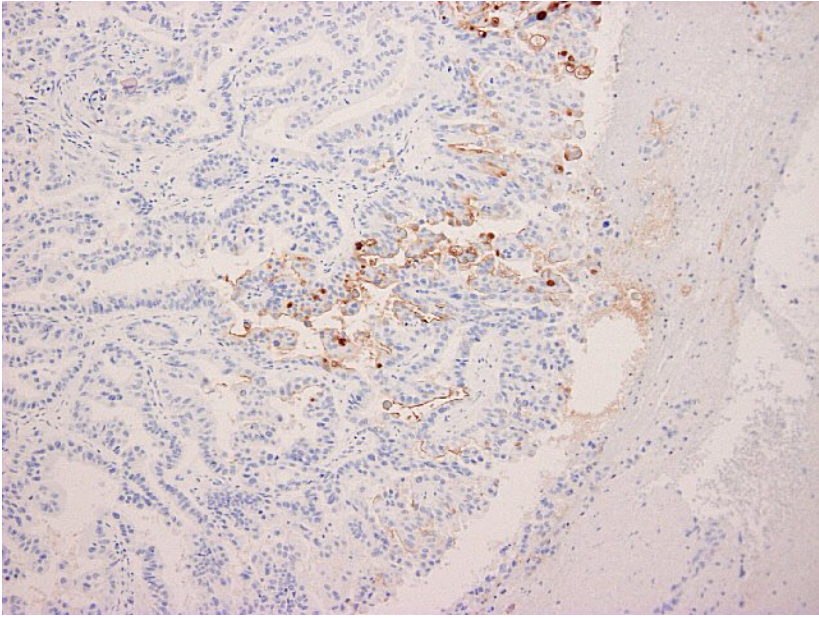


Figure 2B

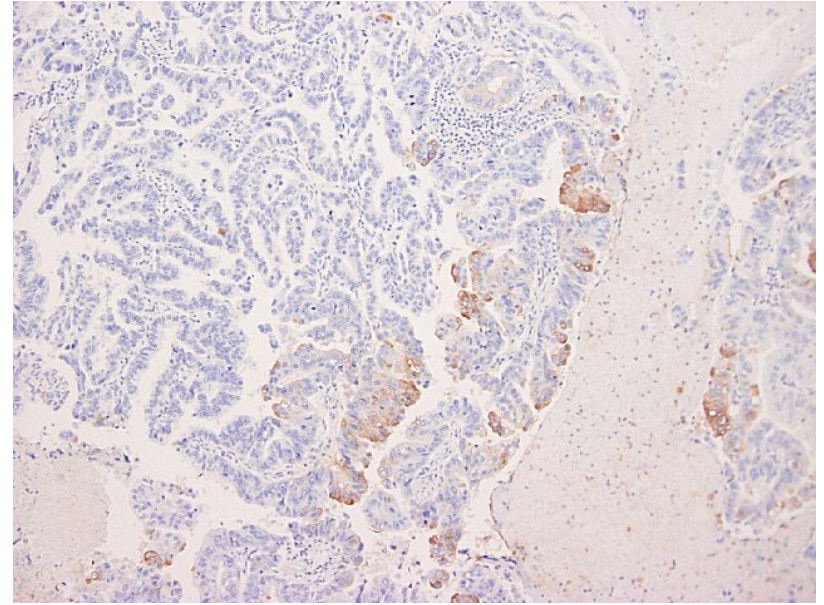


Figure 2C

Table1. Reported cases of tumor markers (CEA, CA19-9, and CA125) positive adenocarcinoma of the upper urinary tract

Case No.	Author	Age	Sex	Site	Tumor markers	Treatment	Status	Duration
1	Haitel et al.(1996)	68	M	Left ureter	CEA, unknown	OP	DOD	3Mo
2	Iwaki et al.(1996)	62	M	Left ureter	CA19-9, 88.7 ^①	OP	NED	24Mo
3	Aida et al.(2002)	62	F		CEA, 24.5 ^② CA19-9, 313.3 ^①	OP	NED	12Mo
4	Onishi(2005)	72	F	Right renal pelvis and ureter, para-aortic lymphonode	CEA, 5250 ^② CA19-9, 18310 ^① CA125, 1234 ^①	CT+OP	NED	12Mo
5	Kohori(2005)	76	F	Left renal pelvis	CA19-9, 155 ^①	RT+CT	DOD	19Mo
6	Our case(2006)	68	M	Left renal pelvis	CEA, 3.5 ^② CA19-9, 752 ^① CA125, 69 ^①	CT+OP	AWC	6Mo

CEA, carcinoembryonic antigen; CA19-9, carbohydrate antigen 19-9; CA125, carbohydrate antigen 125

①, unit/ml; ②, ng/ml; OP, operation; CT, chemotherapy; RT, radiation therapy

DOD, died of disease; NED, no evidence of disease; AWC, alive with cancer; months, Mo

腎結石に合併した CA125、CA19-9 産生性腎

盂乳頭状腺癌の 1 例

安住 誠、芳生 旭辰、沼田 篤、谷口 成実、

佐賀 祐司、橋本 博、柿崎 秀宏

旭川医科大学泌尿器科学講座

患者は 68 歳、男性。腎結石による腎機能低下を伴った症候性高度水腎症のため左腎摘出術が施行された。腎周囲の強度の癒着のため、術中腎盂壁が破れた。病理学的診断は腎盂乳頭状腺癌で、CA125、CA19-9 に陽性所見を示した。術前の血液検体を調べたところ CA125 および CA19-9 が高値であることが明らかとなった。術後化学療法としてパクリタキセルとカルボプラチンを用いた T J 療法が 4 サイクル施行された。しかし化学療法終了 1 ヶ月後に局所再発した。腎盂乳頭状腺癌は極めて稀な疾患であるが、長期にわたる腎結石や腎盂壁の不整を伴った水腎症が認められ

た場合、腎盂腫瘍の可能性があることを忘れてはならないであろう。CA125およびCA19-9は上部尿路腫瘍の有用なマーカーになり得る。