

Cervical cancer metastatic to the upper part of the ureter: a rare case

M. Kawanishi, Y. Hashiguchi, M. Kasai, T. Fukuda, T. Ichimura, T. Yasui, T. Sumi

Department of Obstetrics and Gynecology, Osaka City University Graduate School of Medicine, Osaka (Japan)

Summary

Background: Carcinoma metastatic to the upper urinary tract is rare, but cervical cancer metastatic of the upper part of the ureter is extremely rare. **Case:** A 63-year-old woman presented with cervical cancer Stage IVB (T3bN1M1). After diagnosis, the patient received chemotherapy combining cisplatin and paclitaxel. Six months after six cycles of chemotherapy, nephrectomy was performed due to hydronephrosis with tight stricture in the upper part of the ureter, and pathological examination revealed carcinoma metastatic to the ureter from cervical cancer. **Conclusion:** In case of hydronephrosis with tight stricture in the ureter with the cervical cancer patient, metastasis to the ureter should be considered.

Key words: Cervical cancer; Metastasis to the ureter.

Introduction

Carcinoma metastatic to the upper urinary tract including the kidney and the ureter is rare [1-5], but cervical cancer metastatic to the upper part of the ureter is extremely rare [4, 5]. Although symptoms referable to the genitourinary tract are lacking in most cases [5], nephrectomy is performed due to hydronephrosis with tight stricture in the upper part of the ureter. Finally, the pathological examination showed metastasis to the ureter from cervical cancer. Here, the authors present a rare case of cervical cancer metastatic to the upper part of the ureter.

Case Report

A 63-year-old woman without a past medical history of interest was referred to the present hospital with atypical genital bleeding. No other symptoms were observed. Examination of the pelvis, which demonstrated a cervical mass with a necrotic tissue and bleeding, suggested cervical cancer. Furthermore, the left parametrium was resistant to pelvic wall. Ultrasonography revealed an echogenic cervical mass with pyometra. MRI examination of the pelvis, which demonstrated 4×4 cm-sized cervical mass, multiple lymph node swelling in pelvis suspecting metastasis and bone metastasis of left ischium, suggested an advanced cervical cancer. CT examination of the abdomen and chest demonstrated multiple lung metastases. Laboratory investigations showed no remarkable findings. Serum tumor markers were as followed: SCC: 1.5 ng/mL, CEA: 4.1 ng/mL, CA19-9: 4,709 U/mL, CA125: 18 U/mL. The histological examination of cervical tumor showed adenocarcinoma usual type. Therefore, the authors confirmed the diagnosis of primary cervical cancer Stage IVB (T3bN1M1) according to the International Federation of Gynecology and Obstetrics (FIGO) staging system.

After diagnosis, the patient received chemotherapy combining paclitaxel and cisplatin (TP therapy). Six months after six cycles of TP therapy, the patient was admitted to the hospital with pain

in left lumbar region. Ultrasonography revealed a left hydronephrosis. Intravenous urography and CT examination of the abdomen demonstrated a left hydronephrosis with a tight stricture in the upper part of the ureter (Figure 1). Although left ureteral catheterization and nephrostomy were performed, symptoms did not improve. One month after diagnosis of left hydronephrosis, left nephrectomy was performed.

Macroscopically, the size of hydronephrotic kidney was 10×6×3 cm with capsular thickening and cortical atrophy (Figure 2). The upper segment of the ureter was obstructed and papillary tumor was recognized in the wall. The pathological examination showed, infiltration of the entire wall of the ureter with atypical cells. The tumor was densely cellular, and the tumor cells had scanty cytoplasm and small to large-sized hyperchromatic nuclei that were similar to the pattern of the original cervical carcinoma (Figure 3). There was no malignant cell in kidney and the cut-edge segment of the ureter. Finally, the pathological examination showed metastatic cells to the ureter from cervical cancer. The

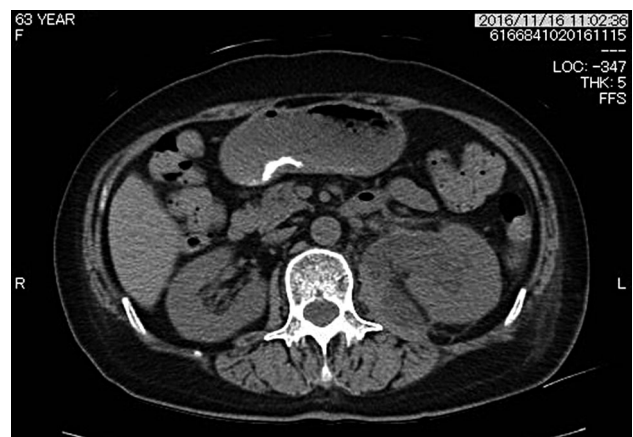


Figure 1. — CT examination of the abdomen, which demonstrates a left hydronephrosis with tight stricture in the upper part of the ureter.

Revised manuscript accepted for publication December 20, 2017

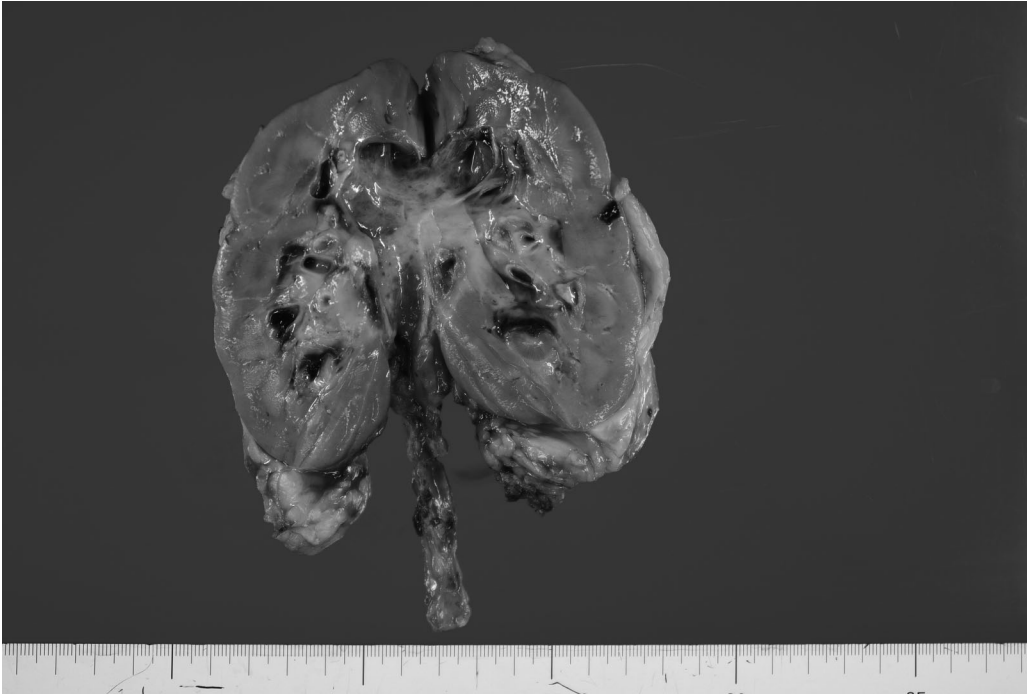


Figure 2. — A macroscopic image of resected left kidney with the upper part of the ureter, which shows hydronephrotic kidney with capsular thickening and cortical atrophy, and an obstructed ureter with a papillary tumor in the wall.

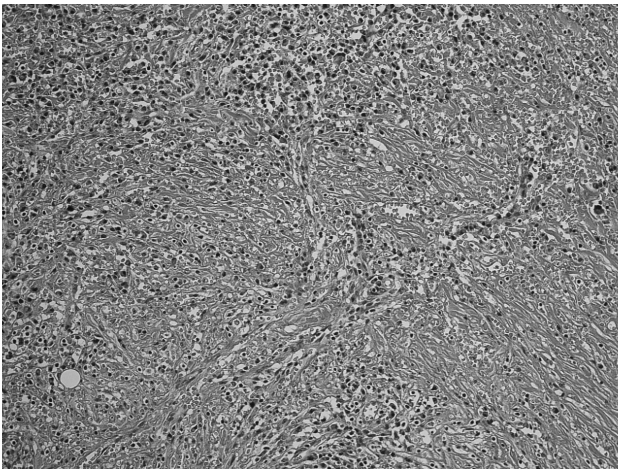


Figure 3. The microscopic image of tumor cells (Hematoxylin and eosin, $\times 20$), which shows scanty cytoplasm and small to large-sized hyperchromatic nuclei.

authors confirmed the diagnosis of a metastasis to the upper part of the ureter from cervical cancer.

To date, ten months after nephrectomy, the patient received the best supportive care, following palliative chemotherapy using TC therapy (paclitaxel and carboplatin) and chemotherapy, combining nedaplatin and irinotecan.

Discussion

Carcinoma metastatic to the upper urinary tract including the kidney and the ureter is rare [1-5], but cervical cancer metastatic to the upper part of the ureter is extremely rare

[4, 5]. To the present authors' knowledge, there is only ten metastatic cases to the kidney and < ten metastatic cases to the upper part of the ureter in the English literature [4, 5]. Stow reported the first metastatic cases to the ureter [6], and Presman *et al.* summarized 35 cases from literature and established criteria for the diagnosis of metastatic disease to the ureter [7]. In the present case, nephrectomy was performed due to hydronephrosis with tight stricture in the upper part of the ureter, and pathological examination revealed carcinoma metastatic to the ureter from cervical cancer. Cohen *et al.* reported that 85% of such patients was asymptomatic [8]. Therefore, the present case appears to be a rare case.

Direct invasion is the main method for the diffusion of cervical cancer, followed by lymphatic metastasis, whereas hematogenous diffusion rarely occurs [1, 2]. Although most reported metastatic cases to the ureter were squamous cell carcinomas, the histological examination showed adenocarcinoma usual type in the present case. This type of cervical cancer may have a different method in the diffusion of cancer cells.

The relief of ureteral obstruction by tubes or ureterolysis may serve only to prolong suffering [4, 5]. Ureteral catheterization is recommended in isolated stricture due to metastasis. Nephrostomy and ureterostomy is indicated if the catheterization is not possible. Nephrectomy is rarely required. In the present case, symptoms were not improved in spite of performing a left ureteral catheterization and nephrostomy, a left nephrectomy was performed. Although conservative treatment, such as a radiation therapy may be an option in this case, metastasis to the ureter from cervi-

cal cancer was revealed by nephrectomy, and the patient could receive following chemotherapy to recover renal function. To date, eight months after nephrectomy, the patient is alive with disease.

In conclusion, metastasis to the ureter from cervical cancer should be considered in case of tight stricture in the upper part of the ureter in patients with cervical cancer. Moreover, nephrectomy may be an option for renal function if the catheterization is not possible for the relief of ureteral obstruction.

References

- [1] Fan G., Xie Y., Pei X., Lei J., Ye M., Zeng G., *et al.*: "Renal metastasis from cervical carcinoma presenting as a renal cyst: A case report". *Oncol. Letters*, 2015, 10, 2761-2764.
- [2] Jeon S.W., Kim S.H., Kwon S.Y.: "Renal metastasis from primary cervical cancer: A case report". *J. Korean Soc. Radiol.*, 2013, 68, 483.
- [3] Soto V.J., Flores O.J., Gutierrez S.J.A., Flores G.J.: "Nephritic colic caused by periuterine fibrosis resulting from metastasis from lobular carcinoma of the breast". *Arch. Esp. Urol.*, 2001, 54, 180.
- [4] Richie J.P., Withers G., Ehrlich R.M.: "Ureteral obstruction secondary to metastatic tumors". *Surg. Gynecol. Obstet.*, 1979, 148, 355.
- [5] Richie J.P., Kantoff P.W.: "Secondary tumors of the ureter". *Holland-Frei Cancer Medicine*, 6th ed., 2003.
- [6] Stow B.: "Fibrolymphsarcomata of both ureters, metastatic to a primary lymphsarcoma of the anterior mediastinum of the thymus origin". *Ann. Surg.*, 1909, 50, 901.
- [7] Presman D., Ehrlich L.: "Metastatic tumors of the ureter". *J. Urol.*, 1948, 59, 312.
- [8] Cohen W.M., Freed S.Z., Hassan J.: "Metastatic cancer of the ureter. A review of the literature and case presentations". *J. Urol.*, 1974, 112, 188.

Corresponding Author:

Y. HASHIGUCHI, M.D.

Department of Obstetrics and Gynecology

Osaka City University Graduate School of Medicine

1-4-3 Asahimachi, Abeno-ku

Osaka 545-8585 (Japan)

e-mail: hashiguchi@med.osaka-cu.ac.jp