

## A CASE OF GASTRIC CARCINOMA SELECTIVELY METASTASIZED TO THE URINARY TRACT

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It has been reported in autopsy studies that the secondary neoplastic involvement of the kidney and the bladder occurs more often than clinically observed<sup>1,2)</sup>. Stomach cancer is regarded as one of the tumors responsible for such a discrepancy. To our knowledge, however, it has not been reported that the metastatic deposit from gastric carcinoma is virtually limited to the urinary system, presenting severe urinary symptoms and causing a unique stomal stenosis following cutaneous transureteroureterostomy. Herein we report such a case.

### CASE REPORT

T. K., a 65-year-old woman was first seen in February 10, 1972, with a five month history of urinary frequency, pain on micturition and occasional hematuria. The urine was sterile and cystoscopy revealed a minimal change of chronic cystitis. Six days later she received a gastrectomy for a cancer, extension of which was limited within the stomach. The operation was thought to be successful and the convalescence was also uneventful except for the persistent urinary symptoms. Bladder malignancy was strongly suggested by repeated urinary cytology, but no decisive evidence could be obtained by multiple biopsies which were made twice under anesthesia.

A contraction of the urinary bladder developed gradually during the following 3 years with a dilatation of the left renal

pelvis and the ureter. A left cutaneous transureteroureterostomy was performed on July 11, 1975, for palliative salvation. Both ureters were found to show remarkable changes on gross as well as microscopic examinations.

In spite of an excellent urine drainage without use of catheters, urinary tract infection which developed after the diversion persisted against vigorous treatments. Moreover, the wall of the ureteral stoma became gradually thickened and eventually a stenosis developed in March 1977 (Fig. 1). Biopsy of the stoma revealed nothing but a chronic ureteritis. General condition of the patient pursued a downhill course probably due to a suppurative pyelonephritis and she died on October 4, 1977.

Postmortem examination revealed an anaplastic solid carcinoma widely metastasized to the left kidney and ureter distal to the cutaneous stoma, to the bladder and minimally to the left lung and paratracheal lymph nodes also (Fig. 2). The metastatic tumor was histologically identical with the primary stomach cancer. No recurrence in the residual stomach was observed.

It was an interesting microscopic finding that the tumor invasion was found not only in some Bowman's spaces but also markedly in the renal tubules (Fig. 3, 4). The mucous membrane and muscular layers of the ureter and bladder were extensively replaced by tumor cells (Fig. 5). Lymphatic and venous invasions were also

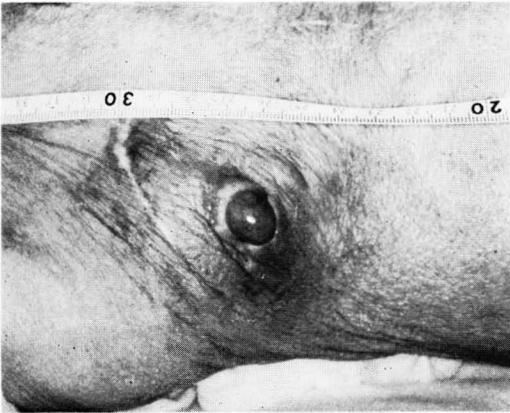


Fig. 1. Ureteral stoma anastomosed to skin showed an expansion and thickening due to cancer invasion.



Fig. 2. Kidneys and anastomosed ureters. White nodular lesions were observed in the left kidney. The stoma, together with a few centimeters of the left common ureter, was resected separately.

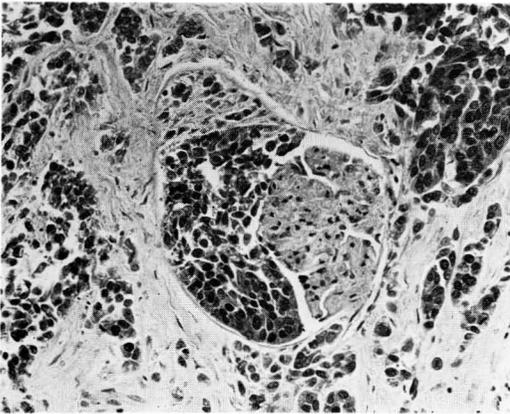


Fig. 3. Tumor cells invading into a cavity of the Bowman's capsule. H & E.

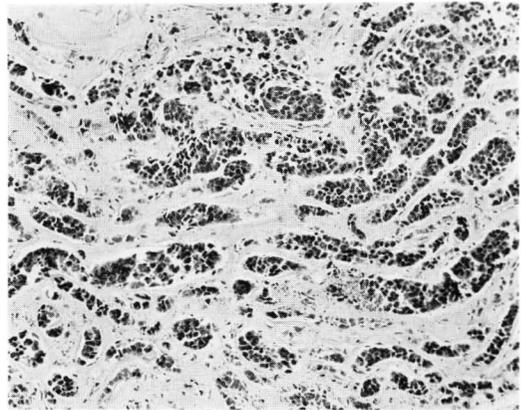


Fig. 4. Carcinoma markedly extending into the renal tubules. H & E.

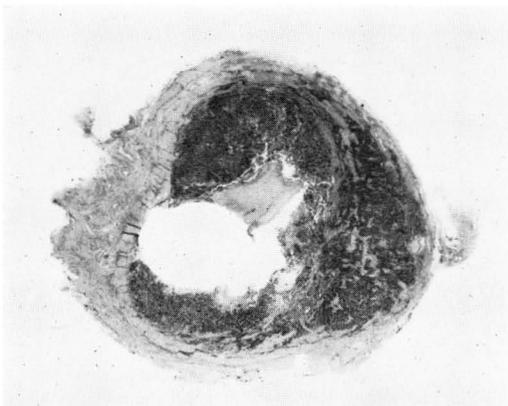


Fig. 5. Cross section of the left ureter near the stoma disclosed a marked replacement of the ureteral wall with tumor mass. H & E.

noticed in these affected areas.

### DISCUSSION

It is emphasized that the urine cytology is a useful measure even for the diagnosis of secondary as well as primary malignancies of the urinary tract<sup>3,4)</sup> The present case is of interest not only in view of its unique clinicopathological findings but also because of a difficulty in making a clinical diagnosis despite multiple biopsies.

Metastasis to the left kidney and the bladder in this case was thought to have occurred via blood stream. The ureteral involvement, however, was probably due to a seeding of tumor cells discharged in the urine from the ipsilateral kidney. Presence of the tumor cells in the Bowman's spaces and the renal tubules strongly suggests this type of extension as described by Lauterburg<sup>5)</sup> and Ross<sup>6)</sup> Infection and catheterization might have provided with a suitable soil for the implantation of cancer cells in the ureter. In addition, it was an unexpected complication in the patient with cutaneous transureteroureterostomy that an insidious tumor growth had caused a stenosis in the otherwise well-functioning stoma.

### SUMMARY

An unusual case of gastric carcinoma with metastasis almost limited to the urinary tract is described. The patient exhibited intractable urinary symptoms for 6 years, requiring a urinary diversion and ultimately resulting in death without definite clinical diagnosis being made.

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### 和文抄録

#### 特異な尿路転移を起した胃癌の1症例

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65歳のとき、癌のために胃切除を受け、特異な尿路転移により5年半後に死亡した1女性例を報告した。頑固な萎縮性膀胱炎のため尿路変向が必要となり、交叉性尿管尿管吻合術および左尿管皮膚瘻術をおこなった。尿細胞診で悪性疾患が疑われながらも前後4回の

生検で確認されなかった。膀胱の炎症と萎縮、腎の感染、尿管の皮膚開口部狭窄など一連の尿路症状はすべて癌転移に起因していたことが剖検で判明した。転移の形式としては尿流による散布が癌の広がり大きな役割を果していることが推測された。