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### Metastatic bladder tumor from pancreatic adenocarcinoma

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#### ABSTRACT

Metastatic pancreatic adenocarcinoma to the urinary bladder is extremely rare and has only been reported 4 cases worldwide. We describe such a case presented with hematuria and dysuria after ten months of the initial diagnosis. Immunohistochemistry helped to confirm the diagnosis of metachronous metastasis. Six months after being diagnosed with the bladder metastasis, progression with severe right hydronephrosis and mild dilatation of the left pyelocaliceal system palliated with an Uventa<sup>TM</sup> metallic ureteral stent and a double J ureteric catheter.

**Keywords:** Metastasis; Pancreas; Bladder; Hydronephrosis

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## INTRODUCTION

Distant metastasis of pancreatic cancer to the bladder is extremely rare and has only been reported 4 cases worldwide [1-4]. We report on a case of metastasis to the urinary bladder from the pancreas.

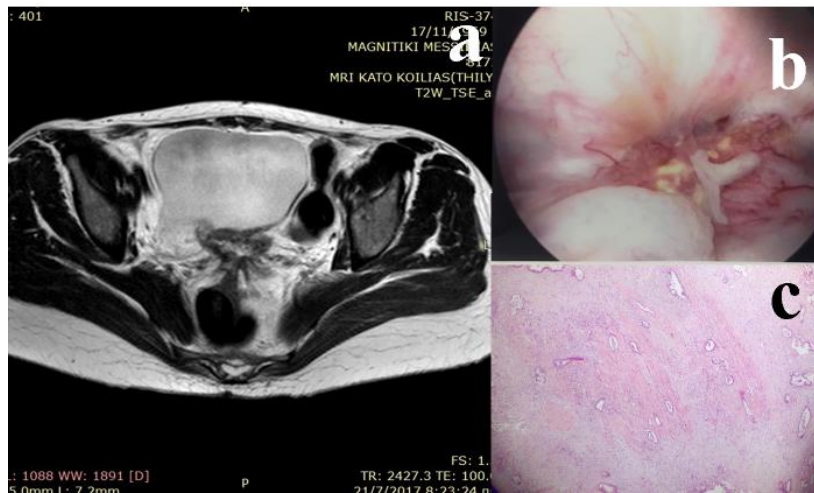
## CASE REPORT

A 49-years- old female with a ten-month history of pancreatic adenocarcinoma was presented with hematuria and dysuria. She had already completed 12 cycles of chemotherapy with Oxaliplatin, Leucovorin and 5-Flourouracil.

A pelvic MRI showed an irregular thickening in the right posterior aspect of the bladder (Figure 1a).

Cystoscopy revealed a large irregular confirmed tumor in the posterior wall of the bladder corresponding to the MRI images. Both ureteral orifices were normal. Transurethral resection of the bladder tumor was performed (Figure 1b).

Histopathologic examination of the specimens showed a moderately differentiated invasive adenocarcinoma with evidence of ductal cell origin (Figure 1c).

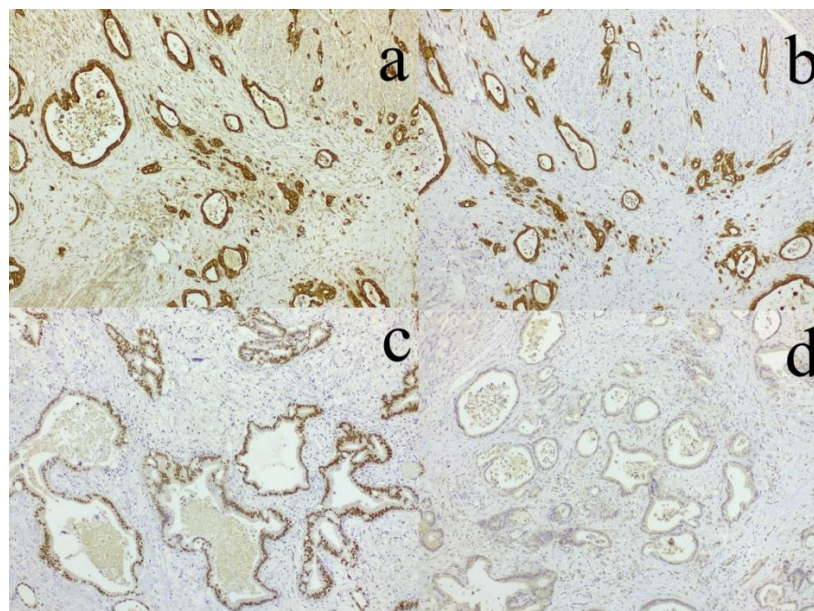


**Figure 1.** (a) MRI showing an irregular thickening in the right posterior wall of the bladder.

**Figure 1.** (b) Cystoscopy revealing a large confirmed tumor with mucosal ulceration in the posterior bladder wall.

**Figure 1.** (c) Histology showing a moderately differentiated invasive adenocarcinoma (H & E X 40).

Immunohistochemistry showed the tumor cells to be positive for CK7, CK19 and CDX2, and negative for p53 (Figure 2).



**Figure 2.** Immunohistochemical staining revealing a strong positive reactivity for CK7(a), CK19(b), CDX2(c) and negative for p63(d), (x 100).

These findings were consistent with metastatic pancreatic adenocarcinoma. Six months later, a new MRI showed bilateral hydronephrosis (Figure 3a). A metallic ureteral stent Uventa™

(Taewoong Medical), and a double J ureteric catheter were placed to both kidneys (Figure 3b) in order to relieve the obstruction. Unfortunately, the patient died 6 months later.



**Figure 3.** (a) MRI shows a severe right hydronephrosis until the pelvic ureter.

**Figure 3.** (b) X-ray abdominal film shows the ureteral stent (Uventa™, 7 mm diameter and 10 cm length) in the right pelvic ureter. Also, there is a 6 F pig tail in the left kidney.

## DISCUSSION

The urinary bladder in an extremely rare site of pancreatic cancer metastasis, and usually presents only at the late stages of the disease [4-6]. It is infrequently presented with urinary symptoms. Also, hematuria is rare unless there is mucosal ulceration, like in our case [1,5].

MRI is more accurate than computerized tomography in assessment of local disease [9]. Irregular or thickening of the bladder wall should raise the suspicion of metastatic disease to the bladder.

Diagnosis of metastatic tumors with cystoscopy may be cumbersome when there no ulceration of the mucosal layer or protuberance of the tumor into the bladder [3]. Moreover, bladder biopsy may be required. While the cases described by Chang et al and Shah et al discussed synchronous bladder metastasis at the time of diagnosis, our patient had metachronous metastasis despite completing a course of chemotherapy for pancreatic adenocarcinoma [1,5].

Immunohistochemical staining is essential to capture the correct diagnosis and establish metastatic versus primary disease [6]. In our case,

immunohistochemistry stained positive for CK7, CK19, and CDX2 and negative for p63 and confirmed the diagnosis [3,5].

Any treatment of the metastatic cancer to the bladder is often only a secondary consideration depending on the stage and prognosis of the primary cancer. Metastatic adenocarcinoma of the bladder has a variable chemosensitivity that correlates with the primary tumor [4]. Disease progression of metastatic bladder cancer depends on a variety of factors including grade of the malignancy, number and mainly location of the metastatic lesions. In our case, because of extensive local invasion of the tumor in the posterior bladder wall and the trigone and its subsequent ureteric obstruction the disease prognosis was poor.

The rationale for nephrostomy and ureteric stent to relieve obstructive uropathy depends on the patient's performance status and life expectancy. Patients with advanced malignant disease have a short life expectancy and the quality of life (QoL) should be taken into consideration when establishing a management plan. The

placements of a permanent nephrostomy have been related to deterioration in the quality of life of these patients<sup>(7)</sup>. Metallic ureteric stents maintain ureteral patency and minimize the deterioration of health related QoL. Uventa™ self-expandable ureteric stent can be an effective and safe option for palliative treatment in such cases [8,9].

## CONCLUSIONS

This extremely rare case report highlights the importance of comprehensive evaluation and further work-up in patients being treated for primary malignancy outside of the urinary tract who present with hematuria with or without persistent dysuria. Although rare, in patients with pancreatic cancer metachronous metastasis can occur. Such a diagnosis alters the management and treatment options in these patients.

## ABBREVIATIONS

CK7 = Cytokeratin 7

CK19 = Cytokeratin 19

CDX2 = Caudal-related homeobox gene 2

## CONFLICT OF INTEREST

None declared

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