



Case Report

A Rare Case of Primary Invasive Squamous Cell Carcinoma of the Left Ureter

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Abstract

Primary Invasive Squamous Cell Carcinoma (SCC) of the ureter is a rare upper urinary tract tumor, comprising 2% of urothelial tumors. Here, we analyze a case of a 71-year-old male with vague symptoms. Diagnostic workup unveiled a large intraluminal mass obstructing the left ureter. Biopsy confirmed invasive SCC. He received chemotherapy and surgery. Despite aggressive treatment, the prognosis remains poor, with high recurrence/metastasis rates. This case underscores the need to consider rare malignancies in urothelial tumor differentials, especially when symptoms are atypical or conventional therapies falter. Early detection and management are vital for better outcomes and patient survival. Enhanced clinician awareness can drive early diagnosis and multidisciplinary interventions, advancing patient care and prognosis.

Keywords: Squamous cell carcinoma; Ureter, Cancer

Introduction

Cancers of the renal pelvis and ureters make up only 5% of urinary tract cancers, however 95% of all cancers that occur here are of the urothelial cell type [1]. Squamous Cell Carcinoma (SCC) of the upper urinary tract makes up only 1-1.6% of all urothelial carcinomas [1]. Patients typically present in their sixth and seventh decade of life and risk factors proposed to play a role in the development of SCC of the ureter include chronic irritation, urolithiasis, chronic hydronephrosis, heavy misuse of analgesics (especially phenacetin), and external beam irradiation [1,2]. It has also been noted that horseshoe kidneys appear to have a higher propensity to develop SCC of the ureter than normal kidneys [2]. This case report chronicles the journey of a 71-year-old male patient diagnosed with invasive squamous cell carcinoma of the left ureter. The report documents the diagnostic and treatment

phases, reflecting the challenges and complexities inherent in managing this rare malignancy.

Case Presentation

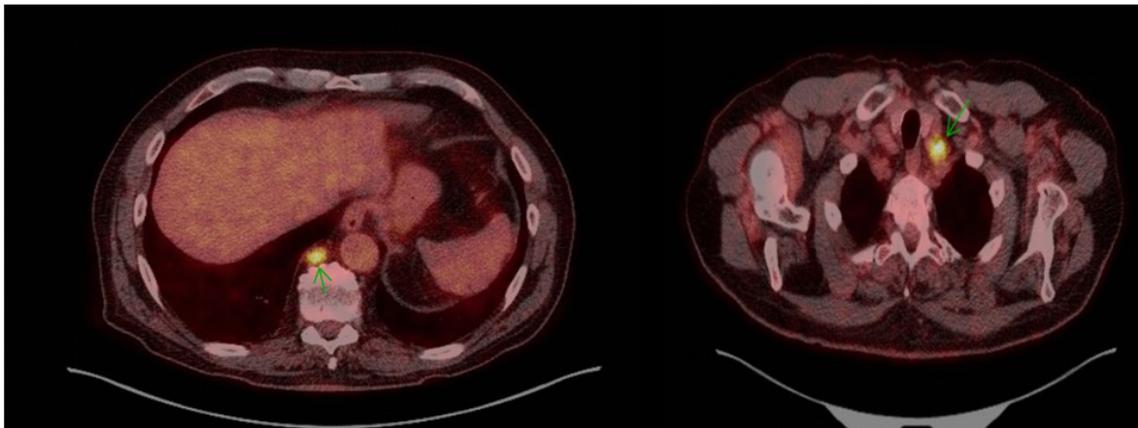
A healthy 71-year-old male patient presented to his PCP with a complaint of new onset gross hematuria, prompting a referral for further medical evaluation by a urologist. He had CT Urogram showing pyelonephritis and left paraaortic/retroperitoneal LAD. He then underwent cystoscopy with left ureteroscopy. The ureteroscopy confirmed invasive squamous cell carcinoma in the left ureter. The patient's subsequent course of treatment and clinical evolution are outlined below:

Diagnostic Phase: Following the carcinoma diagnosis, the patient's condition was characterized by urinary debris due to stent placement. Further evaluation with scans identified potential

primary tumor involvement in the proximal left ureter and renal pelvis. Metastatic adenopathy was observed in various regions.

Figure 1

Figure 2



Figures 1 and 2: PET scan demonstrating metastatic adenopathy in the retrocrural region (Figure 1, green arrow) and para-esophageal region (Figure 2, green arrow).

Figure 3

Figure 4

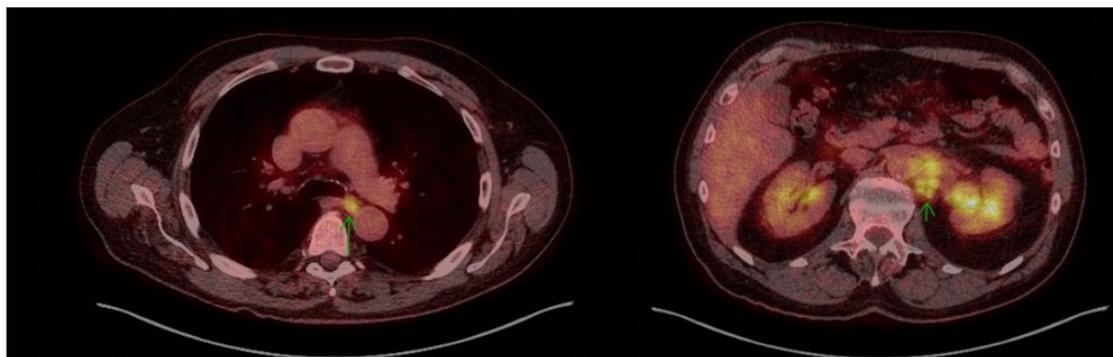


Figure 3 and 4: PET scan demonstrating metastatic adenopathy in para-aortic region (figure 3, green arrow) and soft tissue fullness in the proximal left ureter and renal pelvis (figure 4, green arrow).

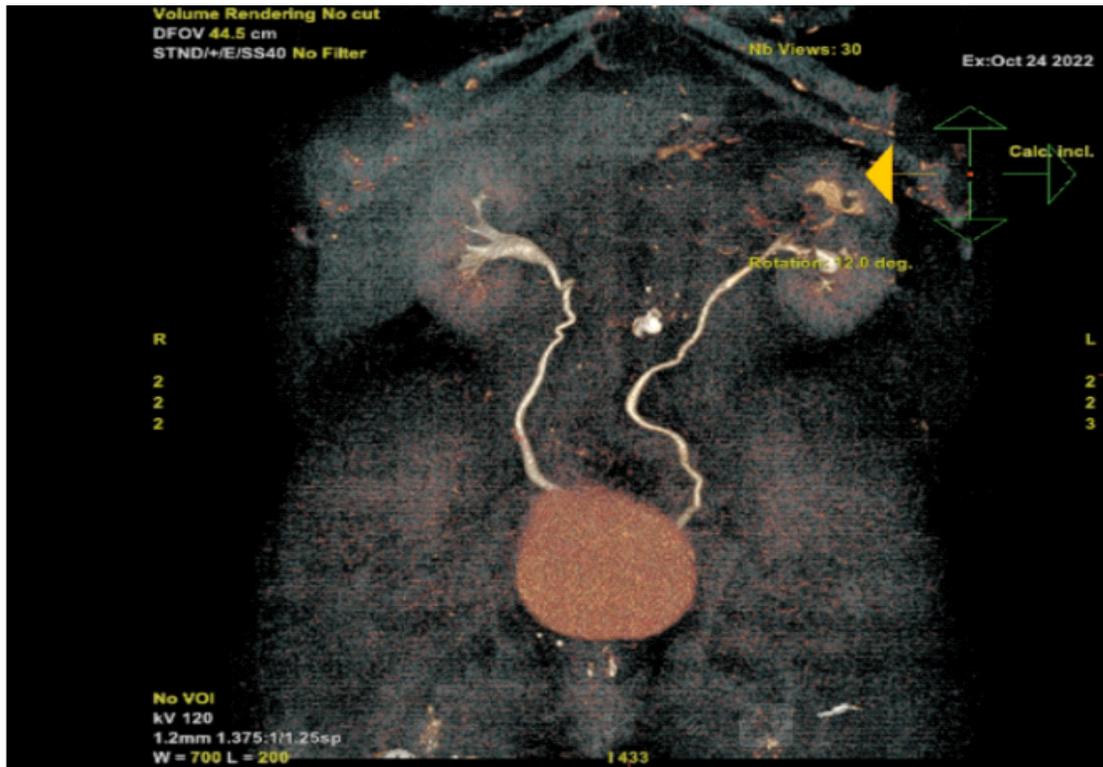


Figure 5: CT Urography study indicative of left pyelonephritis.

Treatment Initiation: The patient underwent interventions including neck biopsy and port placement. An initial chemotherapy regimen comprising carboplatin, Gemcitabine, and paclitaxel were administered. Initial treatment led to mild lower left back pain and subsequent joint pain, mild fatigue, and chills. Elevated liver function tests necessitated adjustments in management.

Progression and Referral: The patient's clinical course saw the emergence of pain in the shoulders, neck, and moderate fatigue. Imaging showed cervical spine degenerative changes and neural foraminal stenosis, with no metastatic involvement. Referral to a neurosurgeon was made for neck pain evaluation.

Varied Responses: The patient's response to treatment varied, experiencing adverse effects with some of the treatments. Neuropathy in the hands and feet developed alongside positive responses to Keytruda therapy. However, there were indications of worsening disease in lymph node metastases and pulmonary nodules.

Evolving Clinical State: The patient's condition continued to evolve, marked by fluctuations in lymph node metastases and pulmonary nodules. He experienced increasing symptoms of severe fatigue, pain, and respiratory distress. Laboratory results showed leukocytosis, and imaging revealed minimal atelectasis

versus scarring. The patient continues to undergo treatment in the outpatient clinic, while still living at home with family.

Discussion

Invasive squamous cell carcinoma of the ureter is a rare malignancy that poses diagnostic and therapeutic challenges due to its uncommon presentation and aggressive nature. This case report sheds light on the clinical course, treatment responses, and challenges faced in managing such a condition. The rarity of this carcinoma underscores the need for further research and understanding to improve patient outcomes.

The initial presentation of hematuria led to prompt urological evaluation, ultimately leading to the diagnosis of invasive squamous cell carcinoma of the left ureter. This case underscores the importance of considering malignancy as a potential etiology in patients presenting with hematuria, particularly when accompanied by persistent or worsening symptoms. Hematuria, often an alarming symptom, should prompt thorough clinical investigation and appropriate imaging studies to guide accurate diagnosis and treatment selection [4,5].

The management of invasive squamous cell carcinoma of the ureter is complicated by its aggressive behavior and propensity for

metastasis. The patient's treatment course involved a combination of chemotherapy regimens, including Carbo, AUC 5, Gemzar, Taxol, and Keytruda. While the response to treatment exhibited fluctuations with both positive and negative outcomes in imaging results, the unpredictable nature of disease progression necessitates individualized treatment strategies. This aligns with the notion that invasive squamous cell carcinoma of the ureter is heterogeneous in its presentation and behavior, demanding tailored therapeutic approaches based on patient characteristics and responses [6,7].

Furthermore, the development of neuropathy as a side effect of treatment highlights the challenges in managing patients' quality of life during therapy [8]. Neuropathy not only contributes to physical discomfort but may also impact patients' ability to tolerate treatment, subsequently affecting the efficacy of therapeutic interventions. Strategies to mitigate treatment-related neuropathy while maintaining therapeutic efficacy are essential to optimize patients' overall well-being and treatment adherence [9]. This case report also underscores the significance of multidisciplinary collaboration in managing complex cases. Referral to a neurosurgeon for neck pain evaluation and consideration of surgical interventions highlights the importance of a comprehensive approach that includes specialists from various medical domains. Multidisciplinary care ensures a holistic evaluation of the patient's condition, leading to informed treatment decisions that consider both disease-specific and patient-centric factors [10,11].

Conclusion

Invasive squamous cell carcinoma of the ureter remains a challenging clinical entity due to its rarity, aggressive behavior, and varied treatment responses. This case report contributes to the existing literature by offering insights into the clinical course, treatment approaches, and challenges faced in managing this malignancy. Further research is warranted to elucidate the underlying molecular mechanisms, refine treatment strategies, and develop targeted therapies that could enhance outcomes for patients with this uncommon carcinoma.

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