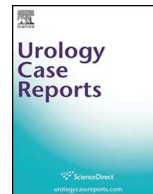




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Oncology

Locally advanced squamous cell carcinoma of the renal pelvis masquerading as emphysematous pyelonephritis

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Introduction

Squamous cell carcinoma (SCC) of renal pelvis is a very rare tumor of the urinary tract, it has an insidious onset and unspecific symptoms. It is highly aggressive and often detected at an advanced stage. Different etiological factors have been described, particularly renal calculi and urinary tract infections with hydronephrotic kidney. We present the case of 67-year old male who presented with findings of emphysematous pyelonephritis (EPN) but was ultimately found to have SCC of the renal pelvis.

Case presentation

A 67-year-old man presented with left flank pain and fever, evaluating since one week, associated with anorexia, there was no history of gross hematuria, renal calculi, or urinary tract infections. On initial presentation the patient was lethargic, febril (38,5 °C), blood pressure 90/07 mmHg with accelerating heart rate 110 bpm. On per abdominal examination, tenderness was present on the left loin region. His laboratory evaluations showed an elevated white blood cell count of 17×10^3 , high level of C-reactive protein (110 mg/dl), and blood sugar was within the normal rate. Urinalysis showed no bacterial growth. A CT-scan showed proximal ureteral calculi, measuring 14 mm, causing

marked hydronephrosis with diffuse parenchymal thinning with gas within the parenchyma and the posterior perirenal tissue, consistent with EPN (Fig. 1).

After medical optimization, the patient underwent a left lombotomy, for the high suspicion of EPN causing severe sepsis, per operative findings revealed dilated kidney with atrophic parenchyma, intensive perinephric inflammation, and a reno-colic fistula, we performed a left nephrectomy with partial colectomy with left sided transverse colostomy. The surgical specimen contained a mass arising in the renal pelvis, penetrating the renal capsule, and invading the adherent colon. Histopathological evaluation revealed a stage pT4 well differentiated SCC (Fig. 2). The patient died two weeks after the surgery.

Discussion

Transitional cell carcinoma of the renal pelvis is the most common malignancy arising in the upper urinary tract, whereas, primary SCC of renal pelvis are very rare with an incidence of 0,5%–8% of all urothelial malignancies, affecting the patients in their sixth decade.¹ Women are affected more frequently than men. Because of its lack of characteristic presentation, such as palpable mass, hematuria, and pain, the patients usually present late with a high grade malignancy with a poor

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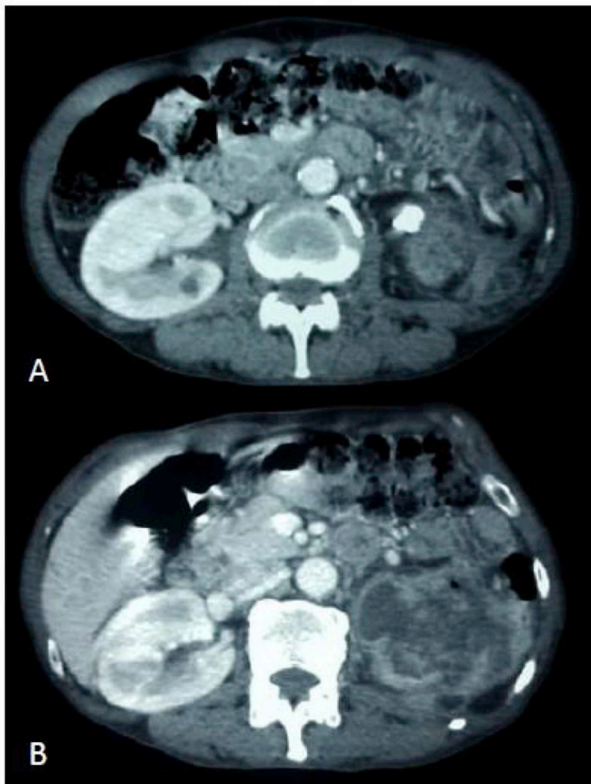


Fig. 1. A: CT-scan showing obstructive left proximal ureteral calculi. B: hydronephrosis with diffuse parenchymal thinning with gas within the parenchyma and the posterior perirenal tissue.

prognosis.² In our patient, the clinical presentation, the presence of ureteral calculi, hydronephrosis, and gas in the renal parenchyma suggested EPN, which is another form of rare presentation of SCC of renal pelvis.

It is commonly associated with chronic irritation, inflammation and hydronephrosis. Patients usually present with long-standing obstruction from calculi that are present in more than 50% of cases reported in the literature.³ Radiologic investigations, based on CT-scan, rarely demonstrate any signs of cancer, there are no specific imaging features, it can present as diffuse enlarged non functional kidney with renal calculi, or infiltrative soft tissue in the renal pelvis without evidence of a distinct mass.⁴ Varying imaging appearance often contribute to delay in diagnosis until the availability of histopathologic examination of the surgical specimen.

The main differential diagnosis of SCC is xanthogranulomatous (XGP) pyelonephritis, which is an entity associated with renal calculi, moreover, XGP can invade adjacent structures, which makes it more difficult to distinguish from an aggressive malignancy. Due to the rarity of SCC, response to surgery, chemotherapy or radiation therapy has not been studied extensively. Surgery remains the mainstay of therapy in SCC of renal pelvis, and may result in cure in low stage patients. The prognosis of SCC of renal pelvis is very poor with 5 years survival rate is less than 10%.⁵

Conclusion

Primary squamous cell carcinoma of renal pelvis, may present as hydronephrosis, more rarely as emphysematous pyelonephritis in patients with long standing nephrolithiasis, a careful search of any abnormal area in the wall should be attempted, and the diagnosis of malignancy should be considered in such patients.

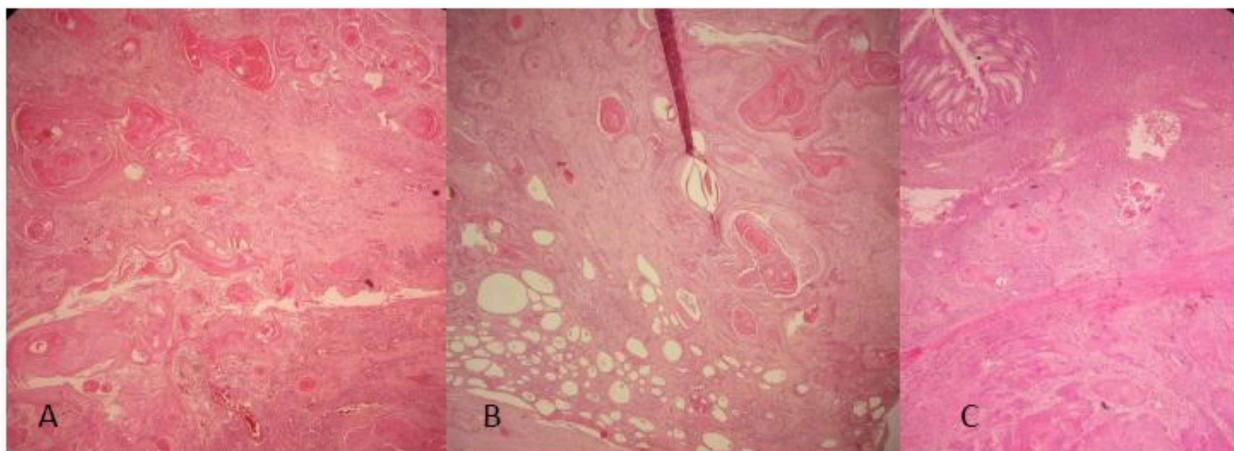


Fig. 2. Histologic examination of the squamous cell carcinoma A: (HES X 10): Deeply invasive, well differentiated squamous cell carcinoma (SCC), producing large amounts of keratin in the form of horn pearls. B: (HES X 4): entrapped renal tubules into the SCC. C: (HES X 4): SCC infiltrating the colon wall from the serosa to the mucosa.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.eucr.2018.10.011>.

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