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Case Report

Case of Pelviureteric Obstruction and Renal Stones with Transitional Cell Carcinoma: Beware of Tumor in Gross Hematuria

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Abstract

Presenting an interesting case report of a patient with gross hematuria. On contrast CT evaluation was found to have pelvic-ureteric obstruction with multiple secondary calculi. Since he was on anticoagulants and antiplatelets, these were thought to be the cause of hematuria. On the table when laparoscopic pyeloplasty and stone removal procedure was on, incidental tumor in lower calyx was detected. Pyeloplasty was converted to laparoscopic nephrectomy after discussing with patients' kin. This highlights the importance of suspecting tumor in patients presenting with gross hematuria.

Key words: Kidney calculi, Laparoscopic nephrectomy, Pelvic-ureteric junction obstruction, Pyeloplasty, Renal cell carcinoma, Transitional cell carcinoma

INTRODUCTION

Common causes of gross hematuria are benign (stones, infection, and benign prostatic enlargement). The incidence of tumors will be 3–6%.[1,2] The common tumors are renal cell carcinoma and transitional cell carcinoma. In hematuria evaluation, we routinely do CT-urogram for all patients, MRI in patients with elevated Sr. creatinine values.[3] Urine cytology is done once hematuria has cleared. In patients over 35 years or any aged patient who is a smoker, with exposure to benzene and aniline dyes or have received radiation therapy/chemotherapy (high-risk group), cystoscopy is done to rule out flat lesions.[3] In recurrent and persistent hematuria, ureterorenoscopy may be done if no abnormalities are seen in imaging.[4-6] It is a way to rule out urothelial tumors of the upper tract as well as to treat bleeding sites with LASER coagulation (benign essential hematuria). If the hematuria does not recur, then repeat imaging done in 3–5 years.[3] In any patient with whom the predominant complaint is hematuria, a urothelial tumor must be suspected even if other causes such as stone, anticoagulant therapy, and infection are present. Rarely a tumor may coexist and missed.

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CASE PRESENTATION

A 73-year-old male presented to the clinic with complaints of gross hematuria, on and off for 2 weeks. Left flank pain was present. He was having urinary incontinence for the past 2 days. He had clot retention: urinary bladder was palpable. His medications were antihypertensives, statins, clopidogrel 75 mg, and aspirin 150 mg. Urethral catheterization done and obstruction relieved, bladder wash done with clot evacuation. His labs: Hemoglobin 8 g/dl, serum platelets 1.2 lakhs/dl, INR 2.2, and serum creatinine 1.3 mg/dl. He does not have any coronary heart conditions. Cardiac ECHO was not suggestive of ischemic heart disease.

After cardiologist consult, aspirin, and clopidogrel were stopped. Two units of packed RBC were transfused. Urine cleared after 3 days, repeated bladder washes were given. A contrast CT KUB with CT urogram taken[Figures 1 and 2]. There was contrast hold up in the left kidney, suggestive of pelvic-ureteric junction obstruction. Soft tissue densities were seen within the dilated pelvis, suggestive of clots. There was a good amount of renal parenchyma in

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the upper and inter-polar region with normal enhancement. Cortex thinned out in the lower pole, without notable enhancement. Multiple 20–30 small secondary calculi were seen sedimenting in the lower pole. The right kidney was normal. After 3 weeks split, renal function done using DTPA. The left renal function was 30%. Laparoscopic pyeloplasty was planned. After removing the larger stones by grasper, the smaller stones were planned to be sucked out with a large cannula. Under general anesthesia and left kidney up position, with 70° tilt, three ports were used. The left colon was dropped, the renal pelvis was dissected.

Adhesions were seen at the pelvic-ureteric junction. No vessel crossing. Ureter was spatulated and pelvis transected above the pelvic-ureteric junction. Larger stones were removed with bowel grasper. In the lower pole, proliferative growth was noticed [Figure 3].

The condition explained to relatives on table and laparoscopic left radical nephrectomy was done [Figure 4]. The pathology report was transitional cell carcinoma, high grade from the lower calyx. The pelvic-ureteric junction showed fibrosis and epithelial atrophy. The patient was not willing for removal of left ureteric stump and cuff of bladder. He is on follow-up for 2 years. Six monthly cystoscopies with left ureteroscopy, urine cytology, and ultrasound were done.

DISCUSSION

Long-standing kidney stones are associated with increased risk of papillary type renal cell carcinoma and upper tract urothelial carcinoma. Especially if stone diagnosis was made in people who are <40 years old. Tumor formation may be due to chronic inflammation and infection.[7,8] The diagnosis of tumor in the scenario of dilated kidneys will also difficult. Main criteria for tumor diagnosis are the presence of contrast enhancement. In thinned parenchyma, in this patient the lower pole cortex, there may not be contrast enhancement because of poor vascularity.[8] Small tumors may be missed as in this case. Another important fact, as in this patient, is anticoagulants and antiplatelets therapy.

Many patients presenting with hematuria are on anticoagulants. The hematuria may be attributed to anticoagulant therapy. However, it is rare for patients on therapeutic doses of

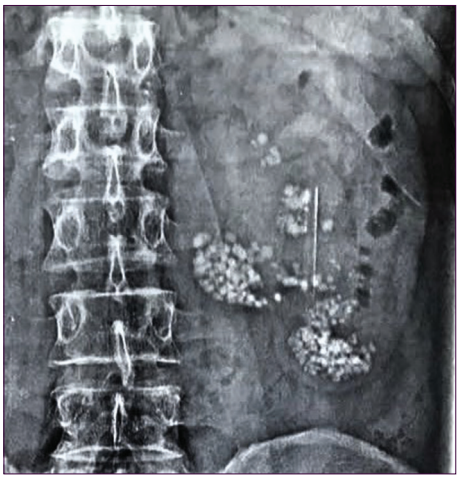

Figure 1: X ray KUB

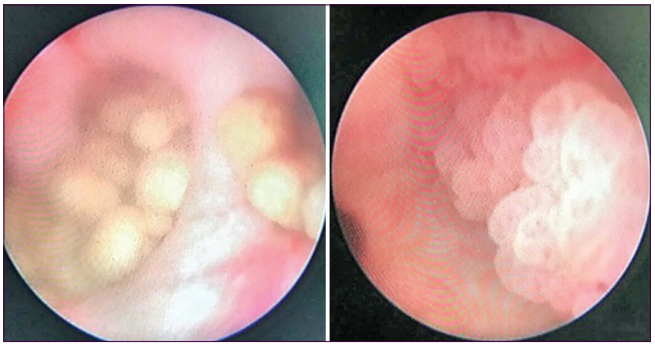

Figure 3: Stones and tumor

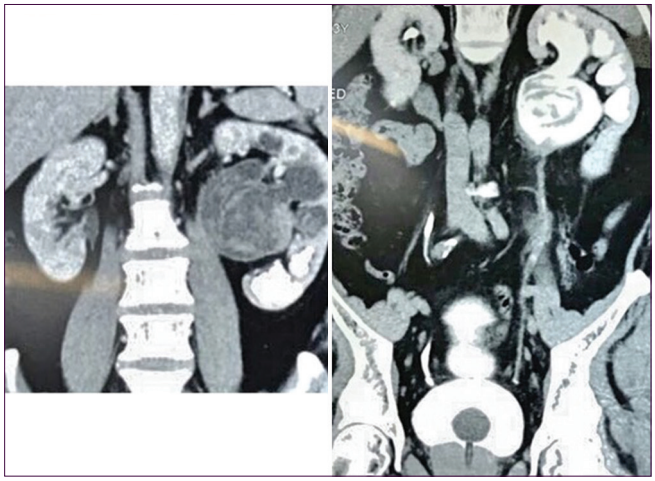

Figure 2: Contrast CT

Figure 4: Nephrectomy specimen

anticoagulant/antiplatelets to present with gross hematuria.[9] Renal/urothelial tumor must be suspected. CT urogram may be normal in 50% of patients presenting to hematuria clinics.

Ureterorenoscopy findings in these kinds of patients will reveal a ruptured venous bleed or a small papilloma at the apex of calyx. This entity is named as benign essential hematuria.[3]

This could be due to vigorous physical exercise/sexual intercourse.[2] A 1.8% of asymptomatic microscopic hematuria patients who did not show any lesion at the time of first evaluation develop a tumor in the kidney when imaged at 3 years (Mohr *et al*., 1986). The incidence may be more in patients presenting with gross hematuria. These may be because of missed early lesions, as in this patient. Problems in patients with pelvic-ureteric junction obstruction presenting with gross hematuria may be unique. A hydronephrotic variant of TCC must be suspected. The bulged out pelvis and calyx (oncocalyx) may be due to tumor filling and bulging the system.[10] Solid elements within hydronephrotic kidneys may be a clot or fungal ball, other than tumor. Due to poor vascularity (poor contrast enhancement) will be difficult to differentiate.[11]

CONCLUSION

In patients with stones and/or pelvic-ureteric junction obstruction presenting with gross hematuria, it is better to inspect the pelvicalyceal system during surgery so that a coexisting early tumor is not missed.

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