Case Report

RENAL PELVIC TRANSITIONAL CELL CARCINOMA – SQUAMOID VARIENT WITH VENA CAVAL THROMBUS MIMICKING RENAL CELL CARCINOMA.

Hanan Noor[1], Muhammad Sohail[2] , Muhammad Tahir Bashir Malik[2], Nauman Khalid[2] , Muhammad Akram Malik[3].
[1]Senior Registrar, Department of Urology, Madinah Teaching Hospital, Faisalabad.
[2]Assistant Professor, Department of Urology, Madinah Teaching Hospital, Faisalabad.
[3]HOD / Professor , Department of Urology, Madinah Teaching Hospital, Faisalabad.

ABSTRACT:

A 56 year old female presented with complaint of episodic gross hematuria & bilateral lumber pain. CT scan abdomen and pelvis revealed Rt. Renal mass complicated by Rt renal vein thrombus & Left Renal and ureteric stones with relatively delayed contrast enhancement. A Right Extended subcostal incision was used to perform Rt radical Nephrectomy. Per operatively Rt. Kidney was adherent to inferior vena cava medially. Tumor thrombus retrieved from inferior vena cava (T3b NoMo) via venotomy after triangular controlled achieved. Patient was discharged on 8th post operative day. The pathological diagnosis was turned out to be high grade, Transitional cell carcinoma of renal pelvis with squamoid differenciation. Nephroureterectomy with bladder cuff excision was planned. The patient came on follow up and refused any adjuvant therapy. Tumor recurrence was detected, referred for adjuvant therapy and the patient died of cancer 3 months after the surgery.

KEYWORDS: venous thrombus, radical nephrectomy, ureterorenoscopy, transitional cell carcinoma, sqaumoid variant.

INTRODUCTION:

Microscopic vascular invasion is common in patients with transitional cell carcinoma (TCC) originating from the renal pelvis, while tumor thrombus extending into renal vein or the inferior vena cava (IVC) is uncommon[1].

About 4-10% of patients diagnosed with RCC presents with a caval tumor thrombus[1]. Renal Cell Carcinoma and Upper tract transitional cell carcinoma are two different types of pathologies that are differentiated on the basis of location and histopathology. It is necessary to differentiate these two malignancies as mode of management differs from each other.

Urothelial carcinoma of renal pelvis is an uncommon condition. It accounts for less than 1% of genitourinary neoplasm and 5-7% of all urinary tract tumors[2,3]. Urothelial carcinoma is well known for its many histopathological varients. Squamous differentiation is the most common variant, defined by the presence of keratinization, intercellular bridges or both. Transitional cell carcinomas of the renal pelvis are of advanced stage than their urinary bladder counterparts[4]. In urothelial carcinoma of pelvicaliceal system, invasion of the renal vein or the IVC is considered to be an uncommon late finding[5]. Here in, we report a case of upper tract transitional cell carcinoma with inferior vena cava (IVC) thrombus that mimicked RCC on radiological findings. To the best of our knowledge, our case is the first reported upper tract transitional cell carcinoma of the squamoid type with an IVC thrombus in Pakistan.

CASE REPORT:

A 56 years married female resident of Chiniot, Pakistan, presented to us with complaints of episodic total gross hematuria with passage of

Corresponding Author:
Hanan Noor
Senior Registrar, Urology,
Madinah Teaching Hospital
Email: drhanannoor@gmail.com

clots for 6 months. Patient also complaints of bilateral lumber pain for 3 months. Right lumber pain was dull ache, intermittent with no radiation or shifting. Left lumber pain was moderate in intensity, colicky and intermittent with no radiation or shifting. Patient was non diabetic, normotensive. On examination there was vague tenderness in right flank with no palpable mass. Complete blood count, clotting profile, Liver function tests were normal. Viral markers were negative. Renal function tests were deranged (creatinine 4.0mg/dl). Urine analysis showing hematuria with no proteinuria. Ultrasound KUB showing right renal mass 9.7x10 cm and left renal and upper ureteric stones with hydroureteronephrosis. CT urogram showed 9.5x8.8 cm right kidney mass involving mid and lower pole, confined within gerota and extension of thrombus into right Renal vein evident by filling defect in renal vein. Left kidney showing left ureteric and renal stone with hydronephroureter. Relatively delayed contrast enhancement, and no excretion of contrast on delayed film. Initially left Ureterorenoscopy with DJ stenting was performed. Deranged Renal function test normalized (creatinine 1.4mg/dl). After optimization of patient, informed consent obtained and tumor approached through chevron (Rt. extended subcostal) incision. Right Kidney was adherent to IVC medially. Tumor thrombus was extending into the IVC that was removed by venotomy. After triangular vascular control achieved, per-operative staging turned out to be T3bNoMo. Right radical nephrectomy done with removal of tumor thrombus. Post operative recovery was uneventful. The histopathological diagnosis turned out to be transitional cell carcinoma with squamoid differentiation. We planned right Ureterectomy with bladder cuff excision, ESWL for left renal stone. But early tumor recurrence was detected at one month in routine outpatient follow up due to the aggressive nature of the disease and its metastatic potential. Patient referred for adjuvant therapy and died 3 months after the operation.

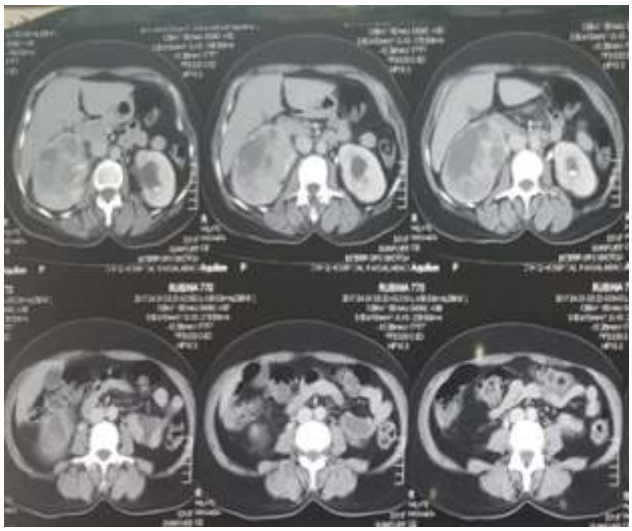


Fig. CT scan image

Fig. Picture of nephrectomy specimen.

DISCUSSION:

Involvement of the renal vein and inferior vena cava by renal cell carcinoma is frequently illustrated in literature. However, venous involvement by urothelial carcinoma of the renal pelvis infrequently reported[2,3,7]. TCC renal pelvis extending into the inferior vena cava, rarely invades its wall[7]. The incidence of RCC with IVC involvement has been estimated to be 48-fold higher than in renal TCC[8]. Hematuria, as an early presentation of most of urothelial leisons may be fairly responsible[2]. Before removing the kidney tumor, its infiltration into the inferior vena cava should be suspected

when the patient presents with signs & symptoms such as caput medusae, isolated right sided varicocele, lower limb edema or pulmonary embolism[2,3,7]. However, the most of the patients with tumor extending into the renal vein and inferior vena cava are asymptomatic and are diagnosed radiologically[1,3,7]. Correct preoperative diagnosis is very important in planning the operative procedure. TCC can be excluded using frozen section of the tumor upon removal of the specimen. Aggressive surgical treatment is indicated as nephrectomy alone is associated with miserable prognosis in all patients with renal tumors associated with IVC invasion[7,9].

In a review of cases done in 2005, 13 reported cases of renal pelvic squamoid carcinoma had been documented since 1961, and all patients presented with metastatic disease or advanced renal parenchymal involvement, with a mean survival time of less than 9 months[10]. Entities such as lymphoma, metastasis, xanthogranulomatous pyelonephritis, or RCC with invasion to the renal pelvis may simulate large infiltrative transitional cell carcinoma with both renal parenchymal and pelvic involvement[11]. Urothelial carcinoma of renal pelvis is a close radiologic mimic of centrally located RCC[12]. In our case, the preoperative radiological findings were characteristically RCC with an IVC thrombus showing a vena caval infiltration pattern. Therefore, a standard radical nephrectomy with thrombectomy and regional lymphadenectomy were performed.

The prognosis of patients with a transitional cell carcinoma associated with inferior vena cava thrombus is poor compared with that of patients with renal cell carcinoma with thrombus in IVC[13]. So far, a radical procedure with thrombectomy for transitional cell carcinoma with an IVC thrombus has been controversial. In conclusion, preoperative diagnosis of an upper tract urothelial carcinoma with a tumor thrombus in the vena cava is important for proper surgical planning[14]. Thus, per operative examination of a frozen section may provide a correct diagnosis, if a transitional cell carcinoma with thrombus unlike from our case is suspected. If it reveals a transitional cell carcinoma, a standard nephroureterectomy with thrombectomy and bladder cuff excision should be performed. As transitional cell carcinoma is rare & diagnosed at later stages when metastasis has already been occurred, contributes to the limited documentation of disease behavior and response to different treatments modalities. Cystoscopy along with radical ureterectomy with bladder cuff excision was planned for this case. However, adjuvant chemotherapy was considered, due to the aggressive nature of the disease and its metastatic potential.

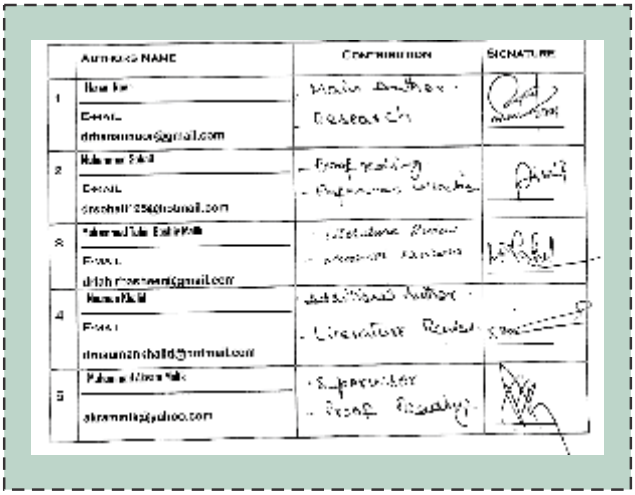
CONCLUSION:

Establishment of the correct diagnosis of TCC of the renal pelvis forming tumor thrombus in the vena cava is important for accurate surgical planning.

REFERENCES:

1. Hyams ES, Pierorazio PM, Shah A, Lum YW, Black J, Allaf ME. Graft reconstruction of inferior vena cava for renal cell carcinoma stage pT3b or greater. Urology 2011;78:838-43.
2. Hall MC, Womack S, Sagalowsky AI, Carmody T, Erickstad MD, Roehrborn CG. Prognostic factors, recurrence, and survival in transitional cell carcinoma of the upper urinary tract: a 30-year experience in 252 patients. Urology 1998;52:594-601.
3. Kirkali Z, Tuzel E. Transitional cell carcinoma of the ureter and renal pelvis. Crit Rev Oncol Hematol 2003;47:155-69.
4. Raman JD, Messer J, Sielatycki JA, Hollenbeak CS. Incidence and survival of patients with carcinoma of the ureter and renal pelvis in the USA, 1973-2005. BJU Int 2011;107:1059-64.
5. Perez-Montiel D, Wakely PE, Hes O, Michal M, Suster S. High-grade urothelial carcinoma of the renal pelvis: clinicopathologic study of 108 cases with emphasis on unusual morphologic variants. Mod Pathol 2006;19:494-503.
6. Prando A, Prando P, Prando D. Urothelial cancer of the renal pelvicaliceal system: unusual imaging manifestations. Radiographics 2010;30:1553-66.
7. Fujimoto M, Tsujimoto Y, Nonomura N, Kojima Y, Miki T, Ariyoshi H, et al. Renal pelvic cancer with tumor thrombus in the

vena cava inferior. A case report and review of the literature. Urol Int 1997;59:263-5.
8. Huber J, Teber D, Hatiboglu G, et al. Does a venous tumor thrombus exclude transitional cell carcinoma? Implications for neo-adjuvant treatment strategies. *Anticancer Res.* 2014;34:1031–103.
9. Al Otaibi M, Abou Youssif T, Alkhaldi A, Sircar K, Kassouf W, Aprikian A, et al. Renal cell carcinoma with inferior vena caval extention: impact of tumour extent on surgical outcome. BJU Int 2009;104:1467-70.
10. Miyazato M, Yonou H, Sugaya K, Koyama Y, Hatano T, Ogawa Y. Transitional cell carcinoma of the renal pelvis forming tumor thrombus in the vena cava. Int J Urol 2001;8:575-7.
11. Perez-Montiel D, Wakely PE, Hes O, Michal M, Suster S. High-grade urothelial carcinoma of the renal pelvis: clinicopathologic study of 108 cases with emphasis on unusual morphologic variants. Mod Pathol 2006;19:494-503.
12. Thiel DD, Igel TC, Wu KJ. Sarcomatoid carcinoma of transitional cell origin confined to renal pelvis. Urology 2006;67:622.e9-11.
13. Tseng YS, Chen KH, Chiu B, Chen Y, Chung SD. Renal urothelial carcinoma with extended venous thrombus. South Med J 2010;103:813-4.
14. Kaplan S, Ekici S, Dogan R, Demircin M, Ozen H, Pasaoglu I. Surgical management of renal cell carcinoma with inferior vena cava tumor thrombus. Am J Surg 2002;183:292-9.



Submitted for publication: 05.06.2018

Accepted for publication: 01.10.2018
After Revision

Value of a man depends upon his courage; his veracity depends upon his self-respect and his chastity depends upon his sense of honor.

Hazrat Ali (Karmulha Wajhay)