



Acute Kidney Injury after Ureteral Obstruction Due to Signet Ring Cell Adenocarcinoma of the Bladder

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background and Objectives: Acute Kidney Injury (AKI) due to bilateral ureteral obstruction in older patients typically raises concerns of abdominal, retroperitoneal, or pelvic neoplasms. Aim of the present paper is to analyse the acute kidney injury after ureteral obstruction due to signet ring cell adenocarcinoma of the bladder.

Materials and Methods: This descriptive clinical study was conducted in Lahore General Hospital, Lahore during January 2019 to November 2019. The data was collected from 10 patients of age range 40 to 60 years. This data include mainly male patients. These selected patients started with hematuria complaint, associated with left flank pain of intensity 8/10 and abrupt onset during his work.

Results: The data was collected from 10 patients of AKI after Ureteral Obstruction Due to Signet Ring Cell Adenocarcinoma of the Bladder. The mean age of the patients was 56.56±8.46 years. The BMI of the selected patients was 24.31±2.26 kg/m² and all basic values are presented in table 01.

Conclusion: It is concluded that adenocarcinoma is a rare type of bladder cancer, with the subtype signet ring cell adenocarcinoma even rarer.

Keywords: Adenocarcinoma; cancer; signet ring cell.

1. INTRODUCTION

Acute Kidney Injury (AKI) due to bilateral ureteral obstruction in older patients typically raises concerns of abdominal, retroperitoneal, or pelvic neoplasms. Malignancies cause hydronephrosis by pressure, by direct expansion, by lymph hubs, or by retroperitoneal fibrosis. It is uncommon for hydronephrosis, because of obstacle at the level of the ureteral bladder bay, and back torment to be the introducing indications of gastric cancer [1].

Urinary parcel obstacle is generally brought about by urolithiasis, momentary cell carcinoma and outside pressure by cancers, amplified lymph hubs, and retroperitoneal fibrosis [2]. Such patients are regularly asymptomatic, however stomach bluntness or the flank torment is one of the ordinary clinical appearances straightforwardly brought about by the obstruction [3]. Infrequently, such patients present extra manifestations or signs because of hydronephrosis, for example, urinary plot disease, pee yield changes, and hypertension [4]. In patients with two-sided ureteral block or bladder neck impediment, the serum creatinine levels are frequently raised, some of the time causing postrenal intense kidney injury (AKI) [5].

Bladder Cancer (BC) goes for roughly 95% of urothelial cell carcinomas or temporary cell carcinomas, making the sickness the most widely recognized disease of the urinary lot. BC is more normal in guys than in females (2:44:1), albeit the finding in females typically happens in further developed stages. In Brazil, the estimative for every time of the biennium 2018-2019 is roughly 9,500 new cases in the South, where it possesses the seventh spot of more coincidental kinds of disease (barring non-melanoma skin cancers), the district with the most noteworthy occurrence in the country [6].

Point of the current paper is to dissect the intense kidney injury after ureteral obstacle because of seal ring cell adenocarcinoma of the bladder. Over the span of the infection, the cancer to some degree impeded the uretral ostium of the bladder, which additionally prompted a broken capacity of the right kidney, vertiginously disintegrating the renal capacity of the patient.

2. MATERIALS AND METHODS

This descriptive clinical study was conducted in Lahore General Hospital, Lahore during January 2019 to November 2019. The data was collected from 10 patients of age range 40 to 60 years. This data include mainly male patients. These selected patients started with hematuria complaint, associated with left flank pain of intensity 8/10 and abrupt onset during his work. The condition of the pain was become worsened after two weeks. When these patients visits the hospital, blood biochemical tests was performed.

2.1 Exclusion Criteria

All the patients who were suffering from multiple diseases and cardiac surgery were excluded from this study.

2.2 Biochemical Analysis

5cc blood sample was taken and it centrifuged at 3000rpm for the separation of serum. In continuation of the diagnostic search, an Abdominal and Pelvic Ultrasonography was requested and performed. Cystoscopy with a biopsy was also done for all these patients. Renal function tests and electrolytes were performed for all patients.

2.3 Statistical Analysis

The data was collected and analysed using SPSS version 17.0. All the values were expressed in mean and standard deviation.

3. RESULTS

The data was collected from 10 patients of AKI after Ureteral Obstruction Due to Signet Ring Cell Adenocarcinoma of the Bladder. The mean age of the patients was 56.56 ± 8.46 years. The BMI of the selected patients was 24.31 ± 2.26 kg/m² and all basic values are presented in Table 1.

The data presented in the table shows the high values of WBC which shows the infection inside the body. The levels of urea and creatinine become also high after AKI. All the values are present in Table 2.

Table 1. Baseline values of selected patients

Variable	Diseases Group	t Value	p Value
Age (Year)	56.56±8.46	1.716	0.081
BMI (kg/m ²)	24.31±2.26	2.195	0.031
SBP (mmHg)	140.36±15.70	8.248	0.000
DBP (mmHg)	87.94±10.69	5.967	0.000
PP (mmHg)	52.42±12.87	5.426	0.000
FBG (mmol/)	5.12±0.65	1.764	0.081
TG (mmol/L)	1.74±0.75	1.838	0.071
TC (mmol/L)	4.95±0.76	1.712	0.090
HDL-	1.30±0.43	1.717	0.089
LDL-C	3.46±0.58	1.139	0.266

Table 2. Results of laboratory tests performed for further analysis

	Results mg/ dL	Reference Values
Serum creatinine	13.7	0.4 to 1.4 mg/ dL
Urea	189	10 to 40 mg/ dL
Sodium	139 mEq/ L	136 to 145 mEq/ L
Potassium	5.6 mEq/ L	3.5 to 5.5 mEq/ L
Glycemia	93	60 to 99 mg/ dL
CBC	11.4 g/ dL	14 to 18 g/ dL
	31.6 %	40 to 54%
Leukogram	7.301/ mm ³	5.000 a 10.000/ mm ³

4. DISCUSSION

There are two broad categories of bladder tumor: urothelial and non-urothelial. In spite of the fact that urothelial types are more normal, around 90% of the cases, adenocarcinomas enter in non-urothelial type. Essential urinary Bladder Adenocarcinoma (PBA) relates to under 2% of the all out instances of bladder cancers [7]. Seal Ring Cell Variant of Mucinous Adenocarcinoma (SRCC) of the urinary bladder is much more uncommon, which might relate to simply 2% to 43% of PBA [8]. In contrast to other bladder cancers, for example, urothelial growths, PBA will in general be analyzed in later stages due to its more forceful and quickly intrusive character [9]. Most of patients are north of 70 years old, and the show in more youthful patients is more rare [10].

Two-sided ureteral hindrance is a significant reason for expanded serum creatinine levels, here and there prompting postrenal AKI. Nonetheless, in patients with one-sided ureteral impediment, the serum creatinine levels generally stayed ordinary, as long as their contralateral kidneys are saved intact [11]. In the current case, albeit the hindrance of the ureter

was one-sided, the patient showed a huge expansion in the serum creatinine level. Notwithstanding, there were no signs reminiscent of parchedness and there were no new employments of extra medications that may have caused renal cylindrical parenchyma harm. As the patient's serum creatinine level got back to typical rapidly after the evacuation of the calculus [12], the one-sided ureteral block was believed to be the essential driver of the falling apart renal capacity. Beforehand, Maletz et al announced an uncommon instance of reflex anuria and an abatement in renal capacity, which was brought about by one-sided ureteral obstruction [13]. As indicated by an essential report utilizing canine kidneys, the expanded exercises of the autonomic sensory system and the renin-angiotensin framework were both answerable for the vascular and ureteral fit in the contralateral kidneys [14,15].

5. CONCLUSION

It is concluded that adenocarcinoma is a rare type of bladder cancer, while the signet ring cell adenocarcinoma subtype is rarer. This study brings a new perspective to the etiology of acute renal failure.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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