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Research Article

Analysis of treatment of muscle invasive bladder cancer in patients with deranged renal profile

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ABSTRACT

Introduction: Bladder cancer is fourth-most common malignancy in men and eighth-most common malignancy in women globally. Traditional treatment of operable muscle-invasive bladder carcinoma patients includes radical cystectomy (RC) and pelvic lymphadenectomy with incontinent/continent urinary diversion.**Aims and objectives:** The main objective of the study is to analyze the treatment of muscle invasive bladder cancer in patients with deranged renal profile in Pakistani population. **Material and methods:** This descriptive study was conducted at Galway University Hospital, Galway, Republic of Ireland during January 2015 to June 2018. The data were collected from 50 bladder cancer patients who suffer with obstructive uropathy and deranged renal function. All the patients who have features of bladder malignancy, positive urinary cytology, and previous history of bladder cancer or bladder mass on imaging/cystoscopy and obstructive uropathy. The detailed history of patients were collected from the hospital record. In all the patients' necessary workup including complete blood counts, renal function tests, random blood sugar, urine for culture/sensitivity, coagulation profile, X-ray kidney ureter, and bladder (KUB), and ultrasound KUB were carried out. **Results:** The data were collected from 50 patients. The mean age of the patients were 35 ± 5.55 years. PCN was done in 30 patients as three patients refused for any treatment. Adequate passage of urine through PCN was defined as technically successful.[8] The technical success rates for PCN placement were 93.33%. Majority of patients (60%) presented with uremic features or oliguria/anuria while 4 (12%) patients presented with hematuria, 6 (18%) patients with irritative lower urinary tract symptoms, and 3 patients (9%) presented with abdominal pain. **Conclusion:** It is concluded that patients with bladder carcinoma with obstructive uropathy, PCN insertion may improve kidney function tests to normal levels and enable them to receive tumor-specific palliative treatment.

Key words: Patients, Abdominal, Pain, Bladder, Cancer

INTRODUCTION

Bladder cancer is fourth-most common malignancy in men and eighth-most common malignancy in women globally. Traditional treatment of operable muscle-invasive bladder

carcinoma patients includes radical cystectomy (RC) and pelvic lymphadenectomy with incontinent/continent urinary diversion. In developing nations like India, this is not straightaway forward as the disease dynamics are complicated (lack of awareness, poor socioeconomic condition, and non-availability of facilities for diagnosis and treatment of disease) hence a sizeable proportion (26%) of patients present with advanced stage disease[1]. In advanced pelvic malignancies such as bladder carcinoma, obstructive uropathy may occur secondary to either malignant involvement of lower ureters or external compression by large primary advanced disease and/or enlarged lymph nodes[2]. Untreated obstructive uropathy may lead to electrolyte imbalance, renal failure, upper tract infections, and decreases the quality of life of these patients[3]. The use of either percutaneous nephrostomy (PCN) or double J (DJ) stent are the traditionally offered methods to improve renal function in obstructive uropathy[4].

Bladder cancer is the eleventh most common malignant disease in the world. In Pakistani males, urinary bladder cancer is included in top ten malignancies and the commonest urological malignancy in both genders[5]. Traditionally radical cystectomy is considered to be the gold standard treatment for muscle invasive bladder cancer[6].

Oncologists have been looking for treatment options resulting in bladder preservation.

Highly selected patient population with normal renal functions has benefitted from trimodality treatments in the form of transurethral resection of bladder tumour (TURBT) followed by chemotherapy and concurrent chemoradiation. Patients with deranged renal functions are poor candidates for radical cystectomy because of the increased chances of peri-operative complications and mortality[7].

Data regarding optimal management and outcome of this subset of patients of advanced bladder carcinoma who present with features of uremia secondary to obstructive uropathy is relatively scant[5]. The management of this group of patients is a matter of debate as the results of interventions (PCN/DJ stent) are often unpredictable in terms of renal function recovery and benefit achieved by the patient for subsequent surgery, radiotherapy, or chemotherapy[1].

Aims and objectives

The main objective of the study is to analyze the treatment of muscle invasive bladder cancer in patients with deranged renal profile in Pakistani population.

MATERIAL AND METHODS

This descriptive study was conducted Galway University Hospital, Galway, Republic of Ireland during January 2015 to June 2018.The data were collected from 50 bladder cancer patients who suffer with obstructive uropathy and deranged renal function. All the patients who have features of bladder malignancy, positive urinary cytology, and previous history of bladder cancer or bladder mass on imaging/cystoscopy and obstructive uropathy. The detailed history of patients were collected from the hospital record. In all the patients' necessary workup including complete blood counts, renal function tests, random blood sugar, urine for culture/sensitivity, coagulation profile, X-ray kidney ureter, and bladder (KUB), and ultrasound KUB were carried out.

Biochemical analysis

Urine analysis and cultures from both PCN sites were performed at regular intervals. In case of nonfunctioning PCN, a nephrostogram was done to confirm the position of the catheter in the renal pelvis. Outcome measures included technical success rates, change in blood urea and serum creatinine measured.

Ethical consideration

All the research work were performed with the permission of ethical committee of hospital.

Statistical analysis

Student's t-test was performed to evaluate the differences in roughness between group P and S. Two-way ANOVA was performed to study the contributions. A chi-square test was used to examine the difference in the distribution of the fracture modes (SPSS 19.0 for Windows, SPSS Inc., USA).

RESULTS

The data were collected from 50 patients. The mean age of the patients were 35 ± 5.55 years. PCN was done in 30 patients as three patients refused for any treatment. Adequate passage of urine through PCN was defined as technically successful.[8] The technical success rates for PCN placement were 93.33%. Majority of patients (60%) presented with uremic features or oliguria/anuria while 4 (12%) patients presented with hematuria, 6 (18%) patients with irritative lower urinary tract symptoms, and 3 patients (9%) presented with abdominal pain. Twenty patients underwent hemodialysis before PCN insertion due to various reasons such as refractory hyperkalemia/metabolic acidosis and/or acute pulmonary edema (table 01).

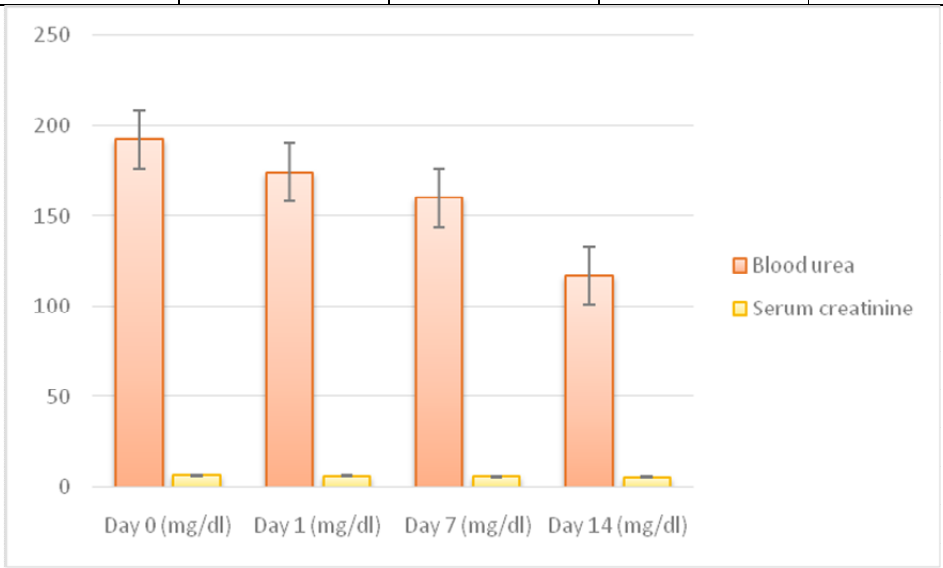
Table 01: Patients with uremia and bladder malignancy

Parameter (mean)	Patients showing improvement	Patients not showing improvement	*P*
Age (years)	45.05	48.83	0.11
Duration of obstruction (months)	7.72	6.42	0.15
Renal cortical thickness (mm)	104.61	60.58	<0.05
Pre-PCN creatinine (mg/dl)	6.58	7.27	0.13

Blood urea and serum creatinine levels become decreasing day by day in all patients. These patients subsequently received multiple sessions of hemodialysis along with other palliative/supportive treatments. However, despite all treatments, these patients succumbed due to progressive malignancy and progressive renal dysfunction.

Table 02: Description of renal function tests at various time

Renal function test	Day 0 (mg/dl)	Day 1 (mg/dl)	Day 7 (mg/dl)	Day 14 (mg/dl)
Blood urea	192.58 (120-280)	174.33 (150-200)	160.08 (140-180)	117 (100-150)
Serum creatinine	6.58 (5-10)	6.25 (5-8)	5.91 (4-8)	5.5 (3.5-7)



DISCUSSION

Bladder cancer occurred in an estimated 79,030 patients in the United States in 2017 alone, with 60,490 cases occurring in men and 18,540 in women. The same trends were seen in Europe, with incidence rates of 19.1 per 100,000 in men and 4 per 100,000 for women.Although a majority are diagnosed with superficial bladder cancers,up

to 25% present with muscle-invasive disease, for whom the risk for progression or metastasis is substantial. Prognosis and recurrences vary by stage of disease as well as other prognostic features, including lymph node involvement, lymphovascular invasion, tumor stage, presence of variant histology, and molecular subtyping[8].

In patients with carcinoma bladder with obstructive uropathy, retrograde DJ stenting is often difficult due to the involvement of ureteric orifice by tumor or hematuria that decreases visualization of ureteric orifices.PCN is especially useful in these scenarios, where retrograde ureteric stenting is often not possible[9].Goodwin *et al.* first described the use of PCN in 1955.The factor leading to good recovery of renal function after relief of obstruction is a short duration of obstruction (<25 days)[10].Haleblian *et al.* reported bilateral hydronephrosis (HDN) to be an independent prognostic factor in carcinoma bladder patients.The authors found that more than 90% of patients of carcinoma bladder with bilateral ureteral obstruction had a disease with extravesical extension compared to around 66% of patients with unilateral ureteral obstruction[11].

CONCLUSION

It is concluded that patients with bladder carcinoma with obstructive uropathy, PCN insertion may improve kidney function tests to normal levels and enable them to receive tumor-specific palliative treatment.

REFERENCES

1. Pycha A, Palermo S, Trenti E, Ladurner C, Mian M, Bonatti M, et al. Quality of life in patients with invasive bladder cancer who cannot undergo cystectomy. Expert Rev Qual Life Cancer Care. 2016;1:339–45.
2. Wong LM, Cleeve LK, Milner AD, Pitman AG. Malignant ureteral obstruction: Outcomes after intervention. Have things changed? J Urol. 2007;178:178–83.
3. Ramchandani P, Cardella JF, Grassi CJ, Roberts AC, Sacks D, Schwartzberg MS, et al. Quality improvement guidelines for percutaneous nephrostomy. J Vasc Interv Radiol. 2003;14:S277–81.
4. Pabon-Ramos WM, Dariushnia SR, Walker TG, d'Othée BJ, Ganguli S, Midia M, et al. Quality improvement guidelines for percutaneous nephrostomy. J Vasc Interv Radiol. 2016;27:410–4.
5. Goodwin WE, Casey WC, Woolf W. Percutaneous trocar (needle) nephrostomy in hydronephrosis. J Am Med Assoc. 1955;157:891–4.
6. Rajadoss MP, Berry CJ, Rebekah GJ, Moses V, Keshava SN, Jacob KS, et al. Predictors of renal recovery in renal failure secondary to bilateral obstructive urolithiasis. Arab J Urol. 2016;14:269–74.
7. Haleblian GE, Skinner EC, Dickinson MG, Lieskovsky G, Boyd SD, Skinner DG, et al. Hydronephrosis as a prognostic indicator in bladder cancer patients. J Urol. 1998;160:2011–4.
8. Harris RD, McCallum DI, Trainer IB. Percutaneous nephrostomy. J Urol. 1976;115:628–73.
9. Jonathan C, Waugh R, Malcom C, Peter E, John M, John S, et al. Percutaneous urinary diversion in gynecology oncology. Gynecol Oncol. 1991;40:248–52.
10. Lienert A, Ing A, Mark S. Prognostic factors in malignant ureteric obstruction. BJU Int. 2009;104:938–41.
11. Cohen EP, Sobrero M, Roxe DM, Levin ML. Reversibility of long-standing urinary tract obstruction requiring long-term dialysis. Arch Intern Med. 1992;152:177–9.
12. Ahmad MR, Pervaiz MK, Pervaiz G. Non-occupational risk factors of urinary bladder cancer in Faisalabad and Lahore, Pakistan. J Pak Med Assoc 2012; 62(3): 236-9