RESEARCH ARTICLE

STONE - ASSOCIATED SQUAMOUS CELL CARCINOMA OF THE URINARY BLADDER IN MAIDUGURI NORTH EASTERN NIGERIA


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INTRODUCTION

Non-bilharzias squamous cell carcinoma of the bladder is a rare malignancy that represents <5% of bladder tumours diagnosed in the western World (Rundle et al., 1982; Serretta et al., 2000). It is usually associated with chronic irritation of the bladder from urinary stasis due to bladder outlet obstruction, recurrent urinary tract infections, stones or indwelling catheters (Ibrahim et al., 2013; Ayush et al., 2015; Navon et al., 1997). Bladder cancer is associated with upper and lower urinary tract stones (Michaud, 2007). A 2 – fold increase in bladder cancer risk was observed with a history of bladder stones in a case – controlled study (Kantor et al., 1984). Several studies also showed positive association between kidney or ureteral stones and the risk of bladder cancer (Kjaer et al., 1989; Gonzalez et al., 1991). Long – standing bladder stones have been implicated as a cause of squamous cell bladder cancer via chronic mucosal injury with resulting inflammation and disruption of the protective glycosaminoglycan layer (Hadad and Chinichian, 1991). The majority of patients with non bilharzial SCC typically present with a poorly differentiated, muscle – invasive tumour with no previous history of urothelial carcinoma (Steffen et al., 2012).

Less than 10% of patients present with distant metastasis (Swanson et al., 1990). Even in the absence of distant metastasis, the prognosis of patients with non – bilharzial SCC of the bladder remains dismal because patients usually die after locoregional recurrence, in contrast to TCC in which distant metastasis accounts for the great majority of recurrences (Wishnow and Dmochowski, 1988). The response to chemotherapy and radiotherapy of non – bilharzial advanced SCC is not encouraging; therefore surgery remained the treatment of choice in operable cases. The study reviewed our experience in the management of non – bilharzial SCC resulting from bladder stone.
PATIENTS AND METHODS

The study reviewed all patients with stone–associated squamous cell carcinoma of the urinary bladder managed in the University of Maiduguri Teaching Hospital, State Specialist Hospital Maiduguri, and Specialist Hospital Damaturu between January 2005 and December 2014. The permission for the study was granted by the Hospital Ethics and Research committee. Written informed consent was obtained from all patients. All patients with squamous cell carcinoma coexisting with schistosomiasis, history of exposure to radiation, smoking, and exposure or working in the dye industry were excluded from the study. Inclusion criteria were long standing vesical stone of at least one year duration. Information was extracted from the clinical and laboratory notes and data analyzed using SPSS version 16. Emergency presentations were resuscitated with analgesics, antibiotics, intravenous fluids, blood transfusion, and hemodialysis where necessary. The investigations done were urinalysis, urine cytology, full blood count, blood chemistry, abdominopelvic ultrasound scan, and chest x-ray. Others were cystoscopy and biopsy, ECG, and urine culture. Operable patients had surgery under general anesthesia with prophylactic antibiotics (ceftriaxone and metronidazole). Patients that could afford chemoradiotherapy were referred.

RESULTS

A total of 13 patients were studied age ranged from 33 – 88 years Table 1, with a mean of 69.08 years, and male to female ratio of 3.33: 1.

Table 1. Patients demography

<table>
<thead>
<tr>
<th>S/N</th>
<th>Age(yrs)</th>
<th>Sex</th>
<th>Stone duration(yrs)</th>
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<tr>
<td>1</td>
<td>88</td>
<td>M</td>
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<td>87</td>
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<td>76</td>
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<td>12</td>
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<td>13</td>
<td>33</td>
<td>M</td>
<td>21</td>
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The duration of symptoms ranged from 2 – 27 years with a mean of 10.08 years. Complications at presentations were UTI in 12(92.31%), anemia in 11(84.62%), impaired renal function in 8(61.54%), and vesico-cutaneous fistula in 2(15.38%). Associated bladder outlet obstructions were BPH in 5(38.46%), urethral stricture in 2(15.38%), and bladder neck stenosis in 1 (7.69%). The clinical stage (Marshall’s) at presentation were stage 2 in 2(15.38%), stage 3 in 7(53.85%), and stage 4 in 3(23.08%), no patient with stage 1 disease. The 3 patients in stage 4, 2 had pulmonary metastases, 1 had frozen pelvis and carcinomatosis peritonii. The procedures done were biopsy only in 1(7.69%), partial cystectomy in 1(7.69%), radical cystectomy with ureterosigmoidostomy in 5(38.46%), radical cystectomy with ileal conduit in 3(23.08%), and radical cystectomy with cutaneous continent catheterizable diversion in 1(7.69%). Two (15.38%) had cutaneous ureterostomy with tumour in situ (non resectable tumour). The histology revealed squamous cell carcinoma in all patients where 4(30.77%) were well differentiated, 5(38.46%) were moderately differentiated, and 4(30.77%) poorly differentiated. Associated findings were squamous metaplasia, dysplasia, and atypia. Deep muscle invasion was seen in 11(84.62%). The postoperative complications were acute renal failure in 3(23.08%), metabolic acidosis in 4(30.77%), and urosepsis in 2(15.38%). There were 3(23.08%) mortalities. One patient died of tumour burden, 1 as a result of deep vein thrombosis and pulmonary embolisms while the 3rd from acute renal failure with uremic encephalopathy. At one year of follow up only 6(46.15%) were alive. Four that died 3 were from local recurrence, and 1 from pulmonary metastases as terminal events.

DISCUSSION

The study found the mean age, male to female ratio, and duration of stone in stone-associated SCC were 69.08 years,
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