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Superficial Urinary Bladder Cancer: Clinical Presentations and Management in Gezira Hospital for Renal Diseases and Surgery-Medani, Sudan

Dr. Awad Abdalla Widaa
Consultant Surgeon, Assistant Professor, Red Sea University, Sudan

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Corresponding Author: **Dr. Awad Abdalla Widaa**

Abstract

Urinary bladder cancers are heterogeneous groups of tumors with different subtype and different behavior. Although there are improvement in the detection and management of urinary bladder cancer, the death to all remains high. GHRDS and NCI (Wad Medani-Sudan) records showed that there are increasing numbers of cases diagnosed as superficial bladder cancer in last years from their annual reports. This study aimed to determine the pattern of clinical presentation of superficial urinary bladder cancer, to detect any known risk factors, and to determine the pathological pattern in the studied patients so as to assist in optimizing the treatment of cancer bladders and provide practical guidance on the clinical management, and to evaluate the outcome by provision of trustful data and audit. With a focus on clinical presentation and recommendations.

Study Design: Methods this is Descriptive, retrospective, prospective hospital-based study in which all patients presented to GHRDS and NCI with symptoms and signs of superficial bladder cancer proved by histopathology from June 2010 to September 2018. Data were retrieved by data sheets from all soft and hard data of patients from GHRDS and NCI and Data were fed to Statistical Package of Social Sciences (SPSS).

Results: A total of 66 patients were confirmed to have superficial bladder cancer from June 2010 to September 2018. The disease is more common in male with ratio (3.1: 1). And peak incidence in the fifth and sixth decades of life. Most of the patients from central sudan (Gezira, Sinnar, Gadariff states) they represents 86,3%. Farmers were 36,4%. Painless gross Haematuria is the most common presenting symptom among the studied group, account for 87.8%%, followed by LUTS in 42.4%. all patients recorded with bladder cancer during the study period were 207 patients, only 66 patients (31.9%) were diagnosed as superficial urinary bladder cancer and was confirmed by the histopathology and there were 141 patients (68.1.%) diagnosed as invasive bladder cancer. transitional cell carcinoma was the most common type (TCC) in 97%. and only 3% as carcinoma in situ.

Keywords: Superficial Urinary Bladder Cancer, Presentation, TTC, Recurrence, Non-muscle-invasive Tumor, GHRDS, NCI (Wad Medani-Sudan)

Introduction

Bladder cancer is the most frequent genitourinary tumour after prostate cancer, and considered the(7^{th}) most common cause of cancer-related death in men and(10^{th}-12^{th}) most common cancer-related death in women [1, 2, 3, 4]. Cancer of the bladder is the fourth most common cancer in men after lung, prostate, and colorectal cancers, and the tenth in women.more than 90% of bladder cancers are transitional cell carcinomas, and approxi-mately 5% are squamous cell carcinomas, and less than 2% are adenocarcinomas [1, 5]. In the developing countries, 75% of bladder cancers are Squamous cell carcinomas and most of these are secondary to Schistosoma haematobium infection [6]. Squamous cell carcinomas of the bladder in the United States are associated with chronic inflammation caused by chronic indwelling Foley catheters and bladder stones. An Accurate epidemiological data about the incidence and mortality of bladder cancer are unavailable for most African countries. Transitional cell carcinoma (TCC) of the bladder is probably less common in rural African regions than in industrialized countries, due to lower levels of exposure to carcinogenic chemicals. However, with increased urbanization, industrialization, and cigarette smoking in many African countries, there is an increasing incidence of TCC relative to SCC of the bladder. In some Sub-Saharan countries, SCC of the bladder is equally common in men and women, probably due to equal schistosomiasis exposure of girls and boys, and because women obtain household water and perform most agricultural tasks [7]. Bladder cancer

is the most prevalent cancer in Egypt, at National Cancer Institute (NCI) Cairo constitutes 30.3% of all cancers, it is ranked first among all types of cancer recorded in Egyptian males and second only to breast cancer in females [8]. Whether in Egypt or other Africans countries such as Sudan, Uganda, Cold Coast and Senegal, it is mostly Squamous cell carcinoma, and arise on background of schistosomiasis or Bilharziasis [9]. A previous studies done in Sudan regarding bladder cancer showed that there is significant relationship between urinary schistosomal infestation and the development of Squamous cell carcinoma of the urinary bladder among Sudanese patients [10, 11, 12]. About (60-75%) of bladder cancer are superficial (a malignant urothelial tumour that have not invade the detrusor muscle at presentation (Ta,T1), of this percentage(70% are Ta, 20% T1and 10% are CIS) [1, 13, 14], but (10 to20 %) of these progresses to muscle invasive tumour (especially high grade and TCC in situ). The diagnosis of non-muscle-invasive bladder cancer requires consideration of all transurethral resection (TUR) samples [15]. Although epidemiologic and experimental evidence favors a strong role for chemical carcinogens in the etiology of bladder cancer, many cases arise with no obvious exposure to known carcinogens. The risk factors of bladder cancer are Tobacco Exposure, Smoking accounts for more than 50% of bladder cancers. However, the reduction of this risk down to baseline (age adjusted) takes nearly 20 years after cessation [1, 16, 17, 18].

Industrial Carcinogen, Occupational exposure to urothelial carcinogens remains common risk factor (in rubber, textile, leather, petroleum, and painting industries,) [1, 19, 20]. Chemotherapeutic Agents (Cyclophosphamide, ifosfamide) [1] pelvic irradiation for carcinoma of the uterine cervix or ovary, Exposure to ionizing radiation is connected with increased risk [1, 21] chronic Irritation and Infection (long standing urethral catheter, infection ---stone formation &foreign bodies) [1, 6], Analgesic Abuse (Consumption of large quantities (5 to 15 kg over a 10-year period) of analgesic combinations containing phenacetin is associated with an increased risk for TCC of the renal pelvis and bladder [1]. Most bladder cancers occur in people over the age of 50. It is rare in people aged younger than 40 [1]. Regarding the Gender. Bladder cancer is about three times more common in men than women [1, 12].

Ethnic background: Bladder cancer is more common in white people than in black people [1]. Genetics Factor: Loss of genetic material on long arm of chromosome 9(p16) appears to be the earliest developments in superficial TCC. Painless gross haematuria is the most common symptom and is indicative of a bladder carcinoma. (85%) of patients with bladder cancer present with haematuria [1, 22]. The presence of Irritative voiding symptoms may double the risk, especially for CIS (5% vs. 10.5%) [1, 23]. Thus, cystoscopy and upper tract imaging are indicated in patients with heamaturia and/or unexplained Irritative symptoms. TaT1 tumours do not cause bladder pain and rarely present with lower urinary tract symptoms. In patients who do complain of these symptoms, CIS might be suspected.Physical examination findings are often unremarkable in most cases.Investigation include urinary cytology: For interpretation of the morphologic features of shed urothelial cells. It is useful when a high-grade malignancy or CIS is present. And often is negative in the presence of low-grade cancer [1, 2]. Cytological interpretation is user-dependent. In experienced hands however, the specificity exceeds 90% [24, 25, 26].

Immuno Cytochemistry has the highest sensitivity for detection of low-grade tumours and is less affected by other urological diseases. Is a hybrid of cytology and an immunofluorescent assay [2, 27].

Blood: Estimation of haemoglobin and the level of serum electrolytes and urea should be carried out with bilateral ureteric obstruction; Liver function test may be elevated in cases of liver metastasis.

Tumour markers: (1) urine NMB22-ELISA test [28-31].

Imaging

Tran abdominal Ultra Sound permits characterization of renal masses, detection of hydronephrosis, and visualization of intraluminal masses in the bladder. US is therefore a useful tool for detection of lesion in patients with heamaturia. CIS cannot be diagnosed with imaging methods (IVU, CT urography or US).

IVU most common radiological sign is a filling defect occasionally, irregularity of the bladder wall may herald the presence of an invasive tumour.

Non-contrast CT MRI: Is being used in some centres instead of IVU or ultrasound scanning for the immediate management of patient with gross painless heamaturia. For staging when a muscle-invasive bladder cancer is suspected, contrast-enhanced CT is used, ideally before TUR.

Cysto Urethrascopy: Is the mainstay of diagnosis and should always be performed on patients with heamaturia, and for taking biopsy of any susceptible lesion.

The diagnosis of non-muscle-invasive bladder cancer requires consideration of all transurethral resection (TUR) samples [1, 2].

Staging Tests: Computed Tomography, Magnetic Resonance Imaging, Ultrasonography, PET, Pelvic lymphadenectomy, bone scan: They provides information about the presence of pelvic and Para-aortic lymphadenopathy and visceral metastases [32, 33].

TUR of TaT1 bladder tumours. The goal of the TUR in TaT1 bladder tumours is to make the correct diagnosis and remove all visible lesions. After all visible tumor is resected, an additional pass of the cutting loop or a cold cup biopsy can be obtained to send to pathology separately to determine the possibility of muscle invasion of the tumor base. Complete and correct TUR is essential to achieve a good prognosis it has been confirmed that absence of detrusor muscle in the specimen is associated with a significantly higher risk of residual disease and early recurrence [34, 35, 36].

The significant risk of residual tumour after initial TUR of TaT1 lesions has been demonstrated, Persistent disease after resection of T1 tumours has been observed in 33-53% of patients [34, 37, 38]. Moreover, the tumour is often under-staged by initial resection. The likelihood that a T1 tumour has been under-staged and muscle-invasive disease is detected by second resection ranges from 4 to 25%. This risk has increased up to 50% in some cystectomy series, although these studies have only enrolled selected patients [39, 40, 41].

A second TUR should be considered when the initial resection is incomplete, or when the pathologist has reported that the specimen contains no muscle tissue (TaG1 excluded). Furthermore, a second TUR should be performed when a high-grade or T1 tumour has been detected at initial TUR [42-47]. The pathological report should specify the grade of the lesion(s) and the depth of tumour invasion into the bladder wall, and should give information about whether the

lamina propria and sufficient muscle are present in the specimen [46].

Treatment of Superficial Urinary Bladder Cancer:

1. TURBT: The goal of the TUR in TaT1 bladder tumours is to make the correct diagnosis and remove all visible lesions [48, 49)]. It is Indicated in Patients with Ta (single-low grade-non recurrent) tumour and Tis or Ta (large-multiple -high grade or recurrent).
2. Intravesical Therapy or immunotherapy: Due to high rate of recurrence and chance of tumour progression intravenous therapy had evolved, it done weekly for 6-8 weeks [50] Famous drugs used are: BCG, Thiotepa, Doxorubicin, Interferon, Mitomycin, epirubicin Mitomycin.
3. One immediate instillation of chemotherapy after TUR significantly reduced recurrence rate but not progression compared to TUR alone [51-54]. It is demonstrated that chemotherapy prevents recurrence [55-57].
4. Radiotherapy: It is curative intent for bladder cancer stage T1, or multiple tumours. It is generally restricted to those individuals who refuse cystectomy after the failure of intravesical therapy or who are unsuitable for major surgery.
5. Radical Cystectomy Whether partial or radical cystectomy in high grade superficial tumour that recure after 2 courses of intravesical therapy within one year with a portion of small and/or large bowel is often used for diversion of urine. Delay of cystectomy in these patients might lead to decreased disease-specific survival [15, 58].

Follow up necessary because late recurrence and progression using cytology and cystoscopy for 5 years.

Table 1: Guidelines for the Treatment of Transitional Cell Carcinoma of the Bladder

Cancer Stage	Initial Treatment Option
Tis	TUR + intravesical immunotherapy (BCG)
Ta (single, small focus)	TUR
Ta (large, multifocal)	TUR + BCG or intravesical chemotherapy
T1 (low grade)	TUR + BCG or intravesical chemotherapy
T1 (high grade)	TUR + (BCG or intravesical chemotherapy) or radical cystectomy

Result

Total number of bladder cancer recorded during study period were 207 patients, about 66 patient 31.9% diagnosed as superficial urinary bladder cancer and confirm by histopathology, and 141 patient 68.1% diagnosed as invasive bladder cancer.

Mean age at diagnosis was 61.3. Most of the cases was in the age group (61-70) years they were 40.9%, followed by age group between (51-60) years and they were 30.4%. About 85.3% of affected patients are older than 50 years. 75.8% of patients were male and 24.2% were female, with a male to female ratio of almost (3.1: 1).and 51.5% lived in rural area while 48.5% were urban. About 36.4 % of the patient were farmers, while 19.8% were house wives 13.6% were drivers and 13.6 % were employees. Recurrent urinary tract infection was most common suspected known risk factor among studied group 53% followed by Farmers Job (possible due to exposure to fertilizers and insecticides (this needs further studies). and bilharzias is 36.4%, smoking 31.8%, less common chemical contact benzene (chemical) exposure jobs 12.1%. It is important to notice that 10.6% of the patient had no history of any known risk factors while 50% of the patient had more than one known risk factors. Fig 1. Almost 87.8% of the patients presented with painless Haematuria, followed by LUTS presentations in 42.4% of the patients, burning micturation 27.2%, Suprapubic pain 16.7%. On physical examination more than 72.7% had no clinical finding, while 37.3% were anaemic.

Urine analysis showed uncountable RBC in 95.5 % and uncountable Puss cell in 95.5%. And 4.5% of patients shown impaired renal function test. 87.9% of the patient had Ultra Sound reports (58 patient out of 66 had US).US showed bladder mass in 91.4%, thick wall in 3.4% and vesical stone in 1.7%. And 3.5 showed normal reports. Diagnostic cystoscopy done for all patients, it revealed tumours in 97% of patients. Of this percentage 77.3% were single and 19.7% were multiple, and 3% showed diffuse flat lesion Figure (2, 3). Successful TURBT in first trial was achievable in 60 subjects 90.9%, while 6 subjects 9.1% with very big or multiple lesions require second TURBT for successful removal of tumor. Most tumours found in lateral walls (left wall 28.8%, followed by right wall 22.7%) then base 15.2%, neck 9%. more than 16.8% of tumor found multiple in more than one site. about 97% were TCC and 3% were carcinoma in situ. Regarding stage 25.8% had Ta disease, 71.2 % had T1 disease. And 3% had carcinoma in situ. For grade 53% of the cases had grade 1, 36.4% had grade 2 and remaining 10.6% were grade 3.

TURBT only (no adjuvant therapy) was done for 47% of the patients, of those patients 54.8% got free of the disease during study period while 45.2% developed recurrence. And 31.8% underwent TURBT plus intravesical chemotherapy and of this group 62% got free of the disease while 38%developed recurrence. 18.2% underwent TURBT plus intravesical BCG, of this group 33.3% got free of the disease and the remaining 66.7% developed recurrence. 3% underwent TURBT followed by radical Radiotherapy (replaced Radical cystectomy) because they were a high-risk group and frequent recurrence. And those completely (100%) cured Table (2), all patients continue surveillance as scheduled and no patient lost follow-up. **Prognosis**: Around 54.5% got free of disease during period of study and recurrence incidence was recorded in 45.5% (30/66) they developed recurrence in advanced stage. Table (3). **Progressed cases**: Tumour pattern during cystoscopy examination of those patients developed progression showed 66.7% were single lesion, 26.7% were multiple and 6.6 diffused type. About 70% recurred early (within first year) while 30% recurred late (after one year). Of 30 progressed recurrent cases, TURBT only done for 47%, TURBT plus intra vesical chemotherapy for 26.5%, TURBT plus intravesical installation with BCG for 26.5% Table (2). Regarding the correlation of tumor recurrence rate to specific stage and grade. Subjects with Ta experienced less recurrence frequency of 16.7% (6/30) with good recurrence free period 68%, while T1 subjects had more recurrence incidence of 76.7 % (23/30). Regarding the correlation of tumor recurrence rate to specific grade. G1 patients had 40% recurrence rate (12/30), G2 patients had a recurrence rate of 40% (12/30). While G3 had a recurrence rate of 6% (2/30). The patients all recurrences were intravesical 100%. Early

recurrence was within first year of post-tumor resection70% (21/30). While delayed (late) recurrence was within more than one year of post-tumor resection 30% (9/30) Table (3). Good recurrence free period was within more than 6 months to 18 months. Tow patient with carcinoma in situ had recurrence but without upper tract involvement. He continued his scheduled surveillance and had frequent recurrences which were always amenable for fulguration alone as his medical condition did not permit major surgery (i.e. cystectomy) to be done for him.

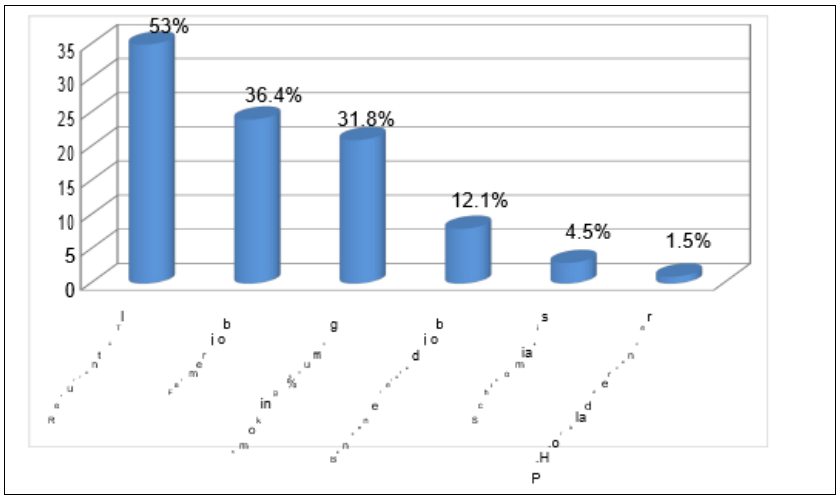

Fig 1: Risk Factors of 66 patients with superficial urinary bladder cancer

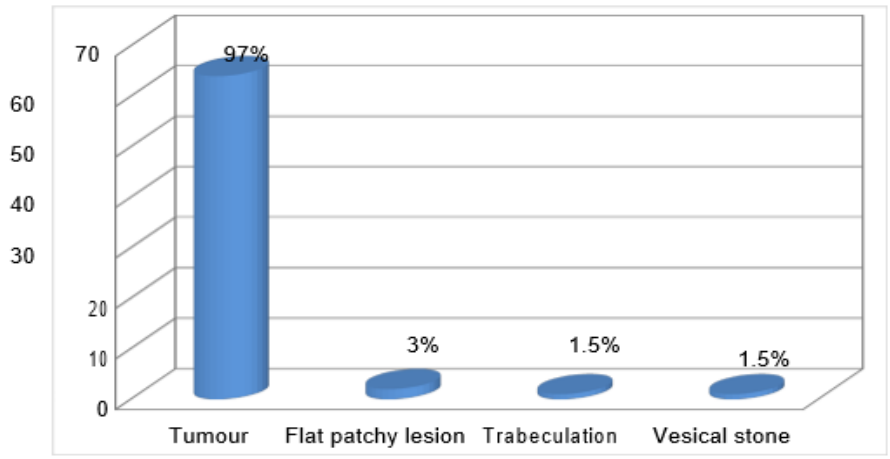

Fig 2: Cystoscopy Findings of 66 patients with superficial urinary bladder cancer

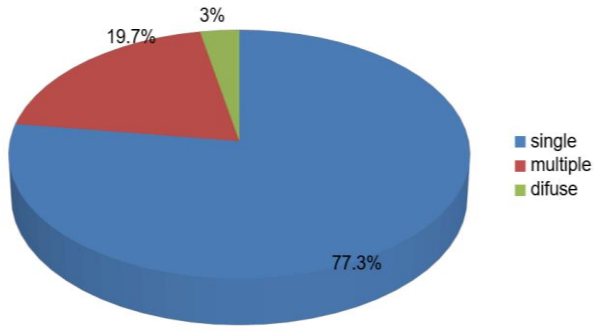

Fig 3: Tumour Characters of 66 patients with superficial urinary bladder cancer

Table 2: Treatment Modalities of 66 patients with superficial urinary bladder cancer

Treatment Modalities	**Frequency**	**Cure**	Recurrence	**Total**
	Percent	**Percent**	**Percent**	**Percent**
TURBT	31(47%)	17(54.8%)	14(45.2%)	100%
TURBT +Intravesical chemotherapy	21(31.8%)	13(62%)	8(38%)	100%
TURBT+ Intravesical BCG	12(18.2%)	4(33.3%)	8(66,7%)	100%
TURBT +Radiotherapy	2(3%)	2(100%)	0(0%)	100%
Total	66(100%)	36(55.5%)	30(45.5%)	100%

Table 3: Tumour Characters of 30 patients with superficial urinary bladder cancer developed recurrence after treatment

Tumour	Percent	Percent	Percent	T.percent
Characters				
Tumour Number	Single 20 (66.7%)	Multiple 8 (26.7%)	Diffuse 2 (6.6%)	100%
Tumour Grade	G1 12 (40%)	G2 12 (40%)	G3 6 (20%)	100%
T Stage	Ta 6(16.7%)	T1 23(76.7%)	Tis 2 (6.6%)	100%
Tumour	Papillary 9	Solid (nodular)	Diffuse 2	
Morphology	(30%)	19 (63.4%)	(6.6%)	
Tumour size	Small(less than 3 cm) 3 (10%)	Big (more than 3 cm) 27 (90%)		100%
Recurrence	Early recurrence (within first year) 21 (70%)	Late recurrence (after first year) 9 (30%)		100%

Discussion

Bladder cancer accounts for 1.8% of the total number of cancer cases registered in the NCI during the period of this study. And about 24.4% of all urological cancer registered during study period. This showed that bladder cancer is the most frequent genitourinary cancer after prostate cancer and this keeping typically with the literatures in United State and Europe [59] among 207 cases of bladder cancer recorded only 66 patient 31.9% were diagnosed as superficial urinary bladder cancer (confirmed by histopathology) compared with 141patients 68.1% as invasive cancer. locally this is not differ from other local record study [60], but it was in big contrary to that figures of international literatures in United State or Europe in which approximately 65-75% of patients with bladder cancer as superficial stage [1, 13, 61]. The explanation to the lower frequency of superficial bladder cancer in this study are: (1) this reflect poor health surface in this country, Bladder cancer need well equipped centers with enough number of urologist and histopathologist and where cystoscopy available for early diagnosis and biopsy. Lack of this facilities make the possibility of early diagnosis of bladder cancer is big different. And rise the rate of malpractice in management of this disease. (2) Most of patients does not come early for treatment, this either due to ignorance about the nature of this condition, negligence or poverty. Or remote live from medical services. Thus, this needs to improve the community health education in the endemic areas. (3) Most patients treated as UTI for long time before they got accurately diagnosed or come to specialised urological canters. (4) General practioners leading health in district hospitals and health centers are not aware of bladder cancer as a serious common differential diagnosis of Haematuria.(5) Relatively large number of SCC cases prevelance that arise on background of schistosomiasis or Bilharziasis [9]. Male to female ratio (3.1: 1). the preponderance of male sex is keeping typically with the ratio in the literatures in United States and Europe [1, 12] and with local studies [10, 59, 60] and closed to the figures recorded in most neighbouring countries Kenyatta National Hospital, Nairobi, Kenya [62], Saudi Arabia [63], Egypt [64] and typically this reading going with most figures in other African countries [7]. Age considered a significant risk factor and this incidence increases directly with increase in Age, about 85.3% of patients found in age above 50 years. And this similar to local and international records [6, 10, 60]. Regarding ethnic varaities (36.4%) of patients were descendants of tribes of the Northern, and 20(30.3%) from central region, 13(19.8%) were western descendants. The common risk factors of superficial bladder cancer were recurrent UTI 53%, Farmers job 36.4%. It has been suggested that this could be attributed to the fact that TCC like of the bladder which is common in areas endemic with urinary bilharziasis, also prolong use of Fertilizers, Insecticides, pesticides and other organic chemical used for preparation of farms (this needs further studies). It is reported in the literatures that strong candidate for bladder carcinogens still exist such as orthotoluidine which used now in the manufacture of dyes, rubber chemicals, pharmaceuticals and pesticides [65]. Most famers not well educated hence they did not know how to use and how to protect themselves from these poisons. smoking account (31.8%) of the patients, benzene exposure job (chemicals) 12.1%. It is important to notice that 10.6% of the patient had no history of any known risk factors while 50% of the patient had more than one risk factors. painless Haematuria is the most common presenting symptom 78.7% and this figure quite similar to the international one [1, 22], and local reviews that reported by Nazik Elmalaika, [10] Fahd and Shawgi studies [60, 62]. About 42.4% of patients presented with LUTS among studied group. Burning micturation symptoms were 27.2%, while suprapubic pain 16.7%. This is similar to Fahd study 60% [59]. and Shawgi study60. 7% [62]. General examination 27.3% of patients were pale and this mostly due to blood loss. Anaemia recorded in 27.3% of the patients, high renal profie documented in 4.5% of patients in those patient who developed big basal tumour obstructing ureteric orifices. Diagnostic cystoscopy hasan excellent method for diagnosis and treatment with sensitivity is almost 100% in diagnosing bladder lesions. this is going with international literature [1] US also is good option for early diagnosis of bladder masses it is sensitivity reach 91.4% thus it is an excellent cheap method for early diagnosis in area where is bladder tumour is suspected and no available cystoscopy. This is going with international literature [1]. All tumour biopsies were subjected to histopathologic examination and the result showed that superficial TCC (Ta,T1) reached 97% of total cases of while the rest is (CIS), this is closed to international literature in WHO reports 90% for TCC(Ta,T1)and 10% for (CIS) [1].

A 25.8% of the tumour was Ta, 71.2% as T1, and 3% as CIS. This is reversed when compared with figure in United State where 70% present as stage Ta, 20% as T1, and 10% as CIS [1]. Regarding the treatment modalities in this study: Successful TURBT in first trial was achievable in 60 subjects 90.9%, while 3 subjects 9.1% with very big or multiple lesions require second TURBT for successful removal of tumor. Within 4 weeks Causes for second TURT were huge tumor size, medical instability requiring premature cessation, risk of perforation, or reduced visibility and shortage of surgical time. TURBT only (no adjuvant therapy) was done for 47% of studied group, of those patients 54.8% got free of the disease while 45.2% developed recurrence in progressed stage. about 31.8% underwent TURBT plus intra vesical chemotherapy and of this group 62% got free of the disease while 38% developed recurrence in progressed stage. 18.2% received intravesical BCG after TURBT, of this group 33.3% got free of the

disease while remaining 66.7% developed progression. 3% underwent TURBT followed by radical Radiotherapy (replaced Radical cystectomy) because tumour (multifocal. High grade, big tumour and frequent recurrence. and those completely (100%) cured. Of 66 cases, 36 patients 54.5% get cured while 30 patients 45.5% developed recurrence or progression and Risk factors for recurrence of superficial bladder carcinoma are stage of disease (Ta/T1 equal 70% of total patients, Tis equal 6.6%), grade of tumor (G2/G3 are 60% of the patients), number of primary tumor (single/ Multiple 26.7% and 6.6% diffused type(CIS that showed recurence rate 100%)), 90%of tumors size was > 3 cm), growth model (papillary30%, solid noduler 63.4% and existence of simultaneous carcinoma in situ 6.6%), duration of symptoms (35.5% < 6 months /65.5% > 6 months),as well as treatment modalities Table (3). TURBT (no adjuvant therapy) done for 43.3% (suggest in adequate treatment). Patients with high-risk non–muscle-invasive tumors (high-gradeTa and T1) have about a 50% chance of recurrence with muscle-invasive disease if treated with TURBT alone. Concerning recurrence 6.7% (2 cases) recur first with the same stage and grade then got progressed. About 90% of patients had big masses more than 2 cm.and 16.7% were Ta, 76.7% were T1and 6.6% were CIS. This percentage of progression is going with international literatures [1, 6]. In this study Disease progression was found in 100% of patients who developed recurrence. The risk of progression in well differentiated tumour (low grade) were 28.8%, and for moderately differentiated tumour were 71.4% and for poorly differentiated tumour including CIS (high grade) result was 100%. This is similar with international results The risk of progression for TCCa grades I, II, and III is 10 to 20%, 19 to 37%, and 33 to 67%, respectively while progression rate in CIS was 63 to 92% [1]. Recurrence and Progression is explained by:

1. Some tumours under-staged by initial resection. And this is universal problem the likelihood that a T1 tumour has been under-staged and muscle-invasive disease is detected by second resection ranges from 4 to 25%. This risk has increased up to 50% in some cystectomies series [1].
2. Lack of option of early instillation within 24 h. and this explained by absence of frozen section technique that give early tissue diagnosis.
3. Treatment modalities in some patients TURBT only (no adjuvant therapy) was done for 47% of studied group
4. Patients factors e.g. lack of compliance, poverty, late presentation 65.5% > 6 months, living far from limited specialized urology centers, missing follow up, ignorance about the nature of this disease, social stigma impact.

Tumor poor prognostic factors.

Conclusions

It was found that bladder cancer was of significant load in urological practice in GHRDS.it affects both sex, the preponderance of male sex is in concordance with the literature and neighboring countries. Recurrent UTI, smoking, farmer jobs, and benzene related jobs were found to be significantly important as aetiological factors in this study.

Percentage of superficial bladder cancer is less than that of international literatures. Diagnosis of superficial bladder cancer need well equipped center with well trained staff. And a well-known policy.

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