e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2024; 16(5); 138-141

Original Research Article

A Hospital Based Observational Study to Evaluate Histopathological Spectrum of Lesions in Urinary Bladder Biopsies

Richa Sharma[1], Madhu Bharti[2], Shipra Singh[3], Poonam Kumari[4]

[1]Tutor, Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India

[2]Tutor, Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India

[3]Tutor, Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India

[4]Professor and HOD, Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India

Received: 08-03-2024 / Revised: 15-04-2024 / Accepted: 10-05-2024
Corresponding Author: Dr. Madhu Bharti
Conflict of interest: Nil

Abstract

Aim: The aim of the present study was to assess the histopathological features of various lesions in the urinary bladder.

Methods: The present study was conducted in the Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India for the period of 1 year. 50 cystoscopic biopsies from patients attending Darbhanga Medical College and Hospital, Darbhanga, Bihar, India were studied.

Results: Among 50 cases, 35 were neoplastic, 15 non- neoplastic and one was classified as biopsy specimen inadequate or unsatisfactory for evaluation. There was clustering of cases between 41-80 years with maximum cases seen in 51-70 years of age together having 21 cases. Hematuria was the most frequent complaint that the patients presented with followed by Dysuria, increased frequency of micturition, urgency and pain abdomen. Among the non-neoplastic lesions 11 were chronic non-specific cystitis, 2 were Acute or chronic cystitis, 1 granulomatous cystitis of tubercular etiology and 1 was polypoidal cystitis. In our study out of 35 cases, 1 was inverted papilloma's, 2 were Papillary urothelial neoplasms of low malignant potential, 12 were Low grade papillary urothelial neoplasms. 10 were high grade papillary urothelial neoplasms, 8 were Invasive urothelial neoplasms and one case each of Squamous cell carcinoma and Sarcomatoid carcinoma.

Conclusion: Urinary bladder biopsy is one of the most common biopsies in urology practice. In our study bladder tumors were the commonest lesions seen in cystoscopic biopsies and TCC was the predominant tumor type. Hematuria was a common symptom in our series and the clinicians showed a keen awareness to the dangers of this symptom and investigated these patients further, which led to discovery of the urothelial tumors.

Keywords: Cystoscopic biopsies, Cystitis, Urothelial neoplasms.

Introduction

Wide Spectrums of nonneoplastic and neoplastic lesions are common in urinary bladder, ranging from inflammatory conditions, infections, tumour like lesions, benign and malignant tumours. Bladder tumours are the second most common tumours of genitourinary tract. Developed countries show higher prevalence than developing countries. [1] The incidence of bladder tumours in men and women is 6% and 2% respectively. [2] About 90% of the tumours are urothelial cancers. These tumours rank 5th in the world and causes significant morbidity & mortality. [3]

The lesions of urinary bladder including both non neoplastic adequate information were excluded from the study. Inadequate bladder biopsy was defined as that biopsy which could not be interpreted by the pathologist due to neoplastic pose a common disease in the general inadequate tissue content or poor preservation. All the population and are often disabling. Tumors of the bladder are an important source of both morbidity and mortality. [4] Amongst bladder tumors, urothelial carcinoma is a common malignant tumor of urinary bladder and comprises of 90% of primary tumor. [5] These neoplasms of bladder create biologic, clinical, diagnostic and therapeutic challenges to both urologist and pathologist. [6,7] Urinary bladder cancer is the sixth most common cancer worldwide and the second most common malignancy of the genitourinary tract after prostate cancer and represents a heterogeneous group of neoplasms. [8] Bladder neoplasms account

for 6% and 2% of the cancer incidences in men and women respectively. They are the second most common malignancy which is seen by urologists. [9] An accurate diagnosis of urinary bladder lesions requires simultaneous data from urology, radiology and surgical pathology labs. Cystoscopy is the primary diagnostic tool for patients who are suspected of having bladder tumors which allows a direct visualization of the bladder mucosa and biopsies of the suspected lesions. [10] Progress has been made in the field of non-invasive imaging and scientists continue to identify and characterize potential markers or surrogate end points for bladder tumor. Physical examination, cystoscopic evaluation and histopathological analysis of biopsy material are the mainstays of contemporary bladder cancer diagnosis and treatment. [11]

The aim of the present study was to assess the histopathological features of various lesions in the urinary bladder.

Materials and Methods

The present study was conducted in the Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India for the period of 1 year. 50 cystoscopic biopsies from patients attending Darbhanga Medical College and Hospital, Darbhanga, Bihar, India were studied.

Clinical details, cystoscopy findings were obtained and maintained according to the proforma. Apparent pathology was noted during the cystoscopic procedure and biopsies taken from the representative areas. For the retrospective cases all relevant details were obtained from hospital records. Inclusion Criteria: All cystoscopic biopsies taken from the urinary bladder were considered for the study.

Exclusion Criteria: Inadequate bladder biopsy was defined as that biopsy which could not be interpreted by the pathologist due to an inadequate tissue content or poor preservation during its transfer to the pathology department, or biopsy of bladder cancer lacking muscular tissue for pathologic staging. [12]

All cystoscopic biopsies were immediately fixed in 10 % formalin for 24 hours. It was then routinely processed and embedded with the mucosal surface uppermost. Five microns thick serial sections were prepared and stained with Hematoxylin and Eosin.

Detailed study was performed under the light microscope. Adequacy of the biopsy was assessed and attempt was made to correlate the histopathological diagnosis with the cystoscopic diagnosis obtained.

Results

Table 1: Age and sex distribution of All Cases

Age in years	Non- Neoplastic	Neoplastic
	No of cases	No of cases
21-30	3	1
31-40	2	1
41-50	4	5
51-60	4	8
61-70	2	7
71-80	0	9
81-90	0	4
Total	15	35
Gender		
Male	9	30
Female	6	5

Among 50 cases, 35 were neoplastic, 15 non-neoplastic and one was classified as biopsy specimen inadequate or unsatisfactory for evaluation. There was clustering of cases between 41-80 years with maximum cases seen in 51-70 years of age together having 21 cases. In the present study there were 39 male patients and remaining 11 patients were females.

Table 2: Distribution Of Clinical Features Of All Cases

Complaints	Non- Neoplastic No of cases	Neoplastic No of cases
Hematuria	1	30
Frequency	14	3
Urgency	12	3
Dysuria	15	2
Pain abdomen	3	2

Hematuria was the most frequent complaint that the patients presented with followed by Dysuria, increased frequency of micturition, urgency and pain abdomen.

Table 3: Distribution Of Non- Neoplastic Lesions

Diagnosis	No of cases
CNSC	11
ACC	2
TB	1
PC	1
Total	15

Among the non-neoplastic lesions 11 were chronic non-specific cystitis, 2 were Acute or chronic cystitis, 1 granulomatous cystitis of tubercular etiology and 1 was polypoidal cystitis.

Table 4: Distribution Of Neoplastic Lesions

Diagnosis	No of cases
Papilloma	1
PUNLMP	2
LGPUN	12
HGPUN	10
IUN	8
SCC	1
SC	1
Total	35

In our study out of 35 cases, 1 was inverted papilloma's, 2 were Papillary urothelial neoplasms of low malignant potential, 12 were Low grade papillary urothelial neoplasms. 10 were high grade papillary urothelial neoplasms, 8 were Invasive urothelial neoplasms and one case each of Squamous cell carcinoma and Sarcomatoid carcinoma.

Discussion

Diseases of the urinary bladder both non-neoplastic and neoplastic are quite common. The non-neoplastic lesions especially cystitis constitute an important source of symptoms and signs. These diseases are more disabling than lethal. Neoplastic lesions are responsible for significant morbidity and mortality. Bladder tumor is the seventh most common tumor worldwide. Urothelial carcinoma is the commonest type accounting for 90% of all primary tumors of the bladder. [13] As per Indian Cancer Registry data in men, it is the 9th most common cancer accounting for 3.9% of all cancers. [14] The incidence rates of urinary bladder cancer per 100,000 males in Bangalore are 3.3, 5.8 in Delhi and 4.8 in Mumbai. [15]

Despite the general reliability and popularity of cystoscopy this technique has some distinct limitations. The possibility of occult neoplastic change in flat urothelium and the risk of not identifying tumors located in sanctuary sites support the widespread use of cytological analysis on voided urine or bladder biopsy specimens. [16] Among 50 cases, 35 were neoplastic, 15 non-neoplastic and one was classified as biopsy specimen inadequate or unsatisfactory for evaluation. There was clustering of cases between 41-80 years with maximum cases seen in 51-70 years of age together having 21 cases. Hematuria was the most frequent complaint that the patients presented with followed by Dysuria, increased frequency of micturition, urgency and pain abdomen. Among the non-neoplastic lesions 11 were chronic non-specific cystitis, 2 were Acute or chronic cystitis, 1 granulomatous cystitis of tubercular etiology and 1 was polypoidal cystitis. Similar results were also seen in study conducted by Issam Salman AL- Azzawi in 64 patients with a persistent symptom complex of supra pubis pain, dysuria, frequency and urgency for 12 months and above. Histopathological examination revealed variable lesions as chronic inflammatory cell infiltration, Brunns nests, cystitis cystic, metaplasia, Bilharzial reaction and ova and in situ carcinoma. [17] Cystitis may be classified according to cause, duration and histological appearances. Causes are numerous and include bacterial, viral, fungal and protozoan agents but most result from coliform bacteria, especially E. coli. [18]

In our study out of 35 cases, 1 was inverted papilloma's, 2 were Papillary urothelial neoplasms of low malignant potential, 12 were Low grade papillary urothelial neoplasms. 10 were high grade papillary urothelial neoplasms, 8 were Invasive urothelial neoplasms and one case each of Squamous cell carcinoma and Sarcomatoid carcinoma. About 70 % of all carcinomas of the urinary bladder are either non- invasive (pTa) or only minimally invasive (pT1) at the time of presentation. [19] Correct histologic grading and tumor staging is crucial for proper and optimal patient management. The corner stone of bladder cancer diagnosis, treatment and staging is a high quality transurethral resection of the bladder tumor (TURBT). [20] After transurethral resection of the

tumor up to 60- 70 % of patients develop recurrent disease, most frequently with in the first year after the presentation. [21]

Conclusion

Urinary bladder biopsy is one of the most common biopsies in urology practice. In our study bladder tumors were the commonest lesions seen in cystoscopic biopsies and TCC was the predominant tumor type. Hematuria was a common symptom in our series and the clinicians showed a keen awareness to the dangers of this symptom and investigated these patients further, which led to discovery of the urothelial tumors. An important feature of TCC is its propensity for multiple recurrences. Identification of these patients has an important impact on prognosis as well as on therapeutic approach.

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