

HISTOPATHOLOGICAL SPECTRUM OF BLADDER LESIONS : OUR OBSERVATION IN 128 CYSTOSCOPIC SPECIMEN

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Abstract

Background : Diseases of the bladder, particularly, inflammation (Cystitis), constitutes an important source of clinical signs & symptoms. Tumours of the bladder are an important source of both morbidity and mortality. The aim of the study was to make a histopathological evaluation of various bladder lesions and to observe the frequency of different bladder lesions. **Material and methods** : The study was conducted in the Department of Pathology, Chittagong Maa-O-Shishu Hospital Medical College (CMOSHMC) from Jan 2012 to Dec 2016. Patients particulars and histopathological diagnosis were kept in records. Tissue was processed in paraffin section technique and stained with routine Hematoxylin and eosin stains. **Results** : One hundred and twenty eight (128) cystoscopic sample were studied. Out of 128 cases males were 103 and 25 were females with a male to female ratio of 4.21:1. In malignant lesions the male to female ratio was 3.82:1. Age distribution ranges from 13 to 85 years with an average age of 57 years. The maximum age group belonged to 51 to 60 years and 61 to 70 years. The spectrum of lesions included non neoplastic and neoplastic lesions. Non neoplastic lesions were eosinophilic cystitis, granulomatous cystitis, radiation induced cystitis, chronic follicular cystitis and cystitis glandularis etc. The neoplastic lesions were, transitional cell papilloma, Papillary Urothelial Neoplasm of Low Malignant Potential (PUNLMP) low and high grade Transitional Cell Carcinoma (TCC) and

leiomyosarcoma. Low grade TCC was the predominant type. **Conclusion** : Cystoscopic biopsy followed by histopathological examination is essential to diagnose any organic bladder lesion for proper management. Smooth muscle should be included in biopsy whenever malignancy is suspected.

Key words

Bladder lesion; Cystitis; Tumours.

Introduction

Diseases of urinary bladder, both non neoplastic and neoplastic, are quite common. The non neoplastic lesions include cystitis, malakoplakia, urachal lesions and tuberculosis¹. Neoplasm of urinary bladder pose biologic and clinical challenges. Tumours of the bladder are an important source of both morbidity and mortality². Bladder tumour accounts for approximately 7% of cancers and 3% of cancer mortality in the united states³. About 95% of bladder tumours are of epithelial origin, the remainder being mesenchymal tumours. Transitional cell carcinoma, also known as urothelial carcinoma composes approximately 90% of all primary tumours of this organ⁴. As with most other carcinomas, its development seems to depend on a combination of genetic and environmental factors. In the present study we have done histopathological examination of bladder specimens to determine the pattern and frequency of different bladder lesions. We have compared our observations with the study reports of some neighbouring countries of the subcontinent.

Material and methods

This was an observational type of study from Jan 2012 to December 2016 conducted in the Department of pathology, Chattagram Maa-O-Shishu Hospital Medical College (CMOSHMC) Agrabad, Chittagong, Bangladesh. All cystoscopic specimen were included in the study. Specimens were collected from the Department of Urology of CMOSHMC and from some other private hospitals of Chittagong city. Patients age, sex and histologic diagnoses were kept in record. The

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surgical specimens were fixed in 10% formalin. All the specimens were grossly examined concerning size, shape, colour and volume of specimen. Tissue were processed by paraffin embedding technique and stained by routine Hematoxilin and eosin stain.

Results

Table 1 : Age and sex distribution(n=128)

Age Group (years)	No of case (%)	Male	Female	Ratio
0-10	0 (00%)			
11-20	05(3.90%)			
21-30	03(2.34%)			
31-40	10(7.8%)			
41-50	22(17.18%)	103(88.44%)	25(19.53%)	4.21:1
51-60	37(28.90%)			
61-70	37(28.90%)			
71-80	10(7.8%)			
81-90	04(3.12%)			
Total	128 (100%)			

Table II : Sex distribution of epithelial malignant cases (n=82)

Sex	No of cases	%	Ratio
Male	65	79.26	3.82:1
Female	17	20.73	
Total	82	100%	

Table III : Non neoplastic lesions, 20.3% (n= 26)

Name of the lesions	No of lesions	%
Chronic non specific cystitis	4	15.38
Eosinophilic cystitis	2	7.69
Granulomatous cystitis	4	15.38
Cystitis glandularis	1	3.84
No significant change	3	11.53
Chronic follicular cystitis	5	19.25
Ulcerative cystitis,	2	7.69
Acute cystitis	1	3.84
Hemorrhagic cystitis,	1	3.84
Chronic cystitis with squamous metaplasia	1	3.84
Radiation cystitis	2	7.69
Total	26	100%

Table IV : Neoplastic bladder lesions (79.6%), n=102

Name of lesions	No of lesions	%
Papilloma,	2	1.96
PUNLMP	12	11.76
Low grade transitional cell carcinoma,	42	41.17
High grade transitional cell carcinoma,	40	39.21
In situ transitional cell carcinoma,	1	.98
Squamous cell carcinoma and	3	2.94
Leiomyosarcoma.	2	1.96
Total	102	100%

A total of 128 cystoscopic specimens were examined. A spectrum of different pathological lesions was observed. The age distribution of the cases ranges from 13 to 85 years with an average age of 57 years. The maximum age group belonged equally to 51 to 60 years (28.90%) & 61 to 70 years (28.90%). So the highest group (57.80%) fell in the 51 to 70 years. The lowest age group is in 21 to 30 years (2.34%) with no case below 10 years. Male to female ratio is 4.21:1. The age and sex distribution is shown in table I.

Regarding age distribution of malignant lesions (In low & high grade transitional cell carcinoma) the peak incidence was between 61 to 70 year and 81 to 90 year age group. Here male to female ratio was 3.82:1 with male predominance. It is shown in table II.

The morphological types of lesions are non-neoplastic and neoplastic lesions. The non neoplastic lesions were chronic non specific cystitis, eosinophilic cystitis, granulomatous cystitis, cystitis glandularis, chronic follicular cystitis, ulcerative cystitis, acute cystitis, hemorrhagic cystitis, chronic cystitis with squamous metaplasia and radiation cystitis. In 3 cases no significant change was noted. Frequency of different non neoplastic lesions are shown in table III.

Neoplastic lesions included benign and malignant neoplasms. These were transitional cell papilloma, papillary urothelial neoplasm of low malignant potential (PUNLMP) low grade transitional cell carcinoma, high grade transitional cell carcinoma, in situ transitional cell carcinoma, squamous cell carcinoma and leiomyosarcoma. The spectrum of neoplastic lesion is shown in table IV.

The predominant lesion is low grade transitional cell carcinoma and high grade transitional cell carcinoma is the second most common type.

Discussion

Cystoscopic bladder specimen of 128 patients included in our study. Here 80.46%(103) were male cases and 19.53%(25) were female with a male to female ratio of 4.21:1 with a male predominance. This is similar to that reported in the study of Pudasamin et al in Nepal Medical college, Katmandu, Nepal and Swaranlates Ajmer et al in JLN Medical college of Rajstan, India where the male to female ration is 4.2:1 and 4.6:1 respectively^{5,6}. In exclusively malignant lesions (high and low grade TCC) the ratio is 3.82:1 comparable to world wide ratio of 3 to 4:1⁷. Age of the patients in our study ranges from 13 to 85 years with an average age of 57 years with a peak age incidence in the 6th and 7th decade (57.80%). This result is in accordance with other study reports discussed in existing literatures^{7,8}. In non neoplastic lesions we have seen different types of acute and chronic cystitis including granulomatous cystitis and radiation induced cystitis. Granulomatous cystitis was characterized by presence of epithelioid aggregates and caseation necrosis. In radiation cystitis, with history of receiving radiation therapy for muscle invasive TCC, there was necrosis and inflammation without presence of any tumour residue. In three cases no significant histologic change was observed excepting mild lymphocytic infiltration in lamina propria and few congested vessels. These types of non neoplastic lesions are documented in different study reports^{6,7,8}. In neoplastic lesions epithelial malignancy is most common (80.36%). It is compatible with the study of Vaidya Sujun et al where it is reported as 81.93%. The uncommon malignant lesions are squamous cell carcinoma (2.94%) and leiomyosarcoma (1.96%). No adenocarcinoma was diagnosed in our cases though it is reported in literatures^{7,8}. Invasion into lamina propria was seen in all the low and high grade TCC. Muscular invasion was seen in 66.66% of high grade lesions where muscular tissue was included in the biopsy.

Conclusion

In our current study on bladder specimens, the frequency of neoplastic lesions is four times greater than that of non neoplastic lesions with male predominance. In malignant lesions infiltrating urothelial carcinoma is the predominant prototype. In non neoplastic lesions granulomatous cystitis due to tuberculosis requires specific treatment. Therefore, cystoscopic biopsy followed by histopathological examination is essential to diagnose any organic bladder lesion for proper management. It is imperative to include smooth muscle in the biopsy whenever malignancy is suspected.

Disclosure

All the authors declared no competing interest.

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