A STUDY OF CYSTOSCOPIC BIOPSIES IN KATHMANDU VALLEY

Rauniyar S K[1], Agarwal A[1], Shah A[2]

ABSTRACT

Fifty cystoscopic biopsies submitted for histopathological evaluation in Nidaan Clinic of Kathmandu over a period of one year were analysed to ascertain the type of bladder diseases in Kathmandu valley. Maximum number of cases were of chronic nonspecific inflammation of urinary bladder followed by transitional cell carcinoma, tubercular cystitis, dysplasia and leiomyoma. Majority of the cases were in the age group of 31–60 years and majority were men.

Key Words: Urinary Bladder, Cystoscopic biopsies, Urinary Bladder lesion, Kathmandu.

INTRODUCTION

Diseases of the bladder, particularly inflammation (cystitis), constitute an important source of clinical signs and symptoms. Usually, these disorders are more disabling than lethal. Cystitis is particularly common in young women of reproductive age and in older age groups of both sexes.

The urothelium is subject to hyperplasia, dysplasia and metaplasia under a variety of circumstances including infections, nonspecific inflammation as may be caused by calculi, exposure to radiation, and a wide variety of excretory products of metabolized drug. Whether these mucosal changes constitute preneoplastic alterations is speculative, but the factors leading to them may, if continued, contribute to cancer formation.

Neoplasms of the bladder pose biologic and clinical challenges. Despite significant inroads into their origins and improved methods of diagnosis and treatment they continue to exact a high toll in morbidity and mortality. The incidence of the epithelial tumours in the United States has been steadily increasing over the past years and is now more than 50,000 new cases annually. According to past 30 years data reported by Bombay Cancer Registry, India, bladder cancer has been found to be uncommon in the first three decades of life but

1. Department of Pathology, Nepal Medical College, Kathmandu.
2. Everest Nursing Home.

Address for correspondence : Dr. S. K. Rauniyar, Associate Professor, Department of Pathology
Nepal Medical College, Kathmandu, Nepal.
P. O. Box: 13344, Phone: 486009 (Off.), 222937 (Cli.), 224612 (Res.)
Email: rauniyar@net.com.np

after the age of 30, the incidence rates increases with age, in log-linear fashion, in both sexes[1].

Cystoscopic biopsies have been extensively studied for various diseases of bladder. However such study has not been conducted so far in Kathmandu. In view of this, cystoscopic biopsies study was done to ascertain the type of bladder diseases in Kathmandu Valley.

MATERIAL AND METHODS

The material consisted of 50 cystoscopic biopsies submitted for histopathological evaluation in the private clinic of Kathmandu over a period of one year from Sept. 1999 to Aug. 2000. The pathological observations made in these cases were analyzed.

OBSERVATIONS

In our study urinary bladder lesions were 1.7 times more common in men than in women as shown in Table I.

Table I : Sex-wise distribution of cases

Age (years)	Sex		Total
	Male	Female	
11 – 20	1	-	1
21 – 30	4	1	5
31 – 40	5	7	12
41 – 50	7	9	16
51 – 60	7	1	8
61 – 70	3	-	3
71 – 80	3	-	3
>80	2	-	2
Total	**32**	**18**	**50**

Observations are based upon total number of cases given in Table II. Maximum number of cystoscopic biopsies were of chronic nonspecific inflammation followed by transitional cell carcinoma bladder, tubercular cystitis, dysplasia and leiomyoma urinary bladder.

Table II
Histological diagnosis of cystoscopic biopsies in 50 case with Urinary bladder lesions.

Diagnosis	No of Cases	Percentage (%)
1. Normal Urothelium	01	02
2. Inflammatory lesions		
i) Chronic nonspecific	22	44
inflammation	07	14
ii) Tuberculosis		
3. Leiomyoma	01	02
4. Dysplasia	05	10
5. Transitional cell	14	28
Carcinoma (TCC)	05	
i) TCC grade I	02	
ii) TCC grade II	07	
iii) TCC grade III		
Total No of cases	**50**	**100%**

On analysing the various lesions, maximum number of cases were in the age group of 31 – 70 years. Inflammatory diseases were more common between 21-50 years of age. In cases of bladder carcinoma age of the patient ranged from 41-60 years, as shown in Table III.

Table III : Age wise distribution of Cases

Diagnosis	10-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
i) Inflammatory lesion	01 (3.4%)	04 (13.7%)	09 (31%)	07 (24.1%)	03 (10.3%)	02 (6.8%)	01 (3.4%)	02 (6.8%)
ii) Leiomyoma	-	-	01 (100%)	-	-	-	-	-
iii) Dysplasia	-	01 (20%)	-	03 (60%)	01 (20%)	-	-	-
iv) Transitional cell carcinoma	-	-	02 (14.2%)	06 (42.8%)	04 (28.5%)	01 (7.1%)	01 (7.1%)	-

DISCUSSION

Maximum number of cases (44%) in the present study were of chronic nonspecific cystitis. Chronic cystitis usually results from repeated attacks of acute cystitis. It varies greatly in severity. There may be only a mild exudate predominantly of lymphocytes and macrophages in the subepithelial tissues, or the inflammation may involve the whole thickness of the bladder wall, with an extensive exudate of lymphocytes, macrophages, and plasma cells.

Fig. 1

Fig. 1. Microphotograph showing non-specific chronic granulomatour inflammation of urinary bladder (H&E, 5X)

In the present study, tubercular cystitis was found in 14% cases. Tuberculosis remains the most frequent cause of granulomatous inflammation of the bladder in many parts of the world. In Kathmandu valley, incidence of tuberculosis involving the urinary bladder is not known as no such study has been conducted to the best of our knowledge. It invariably develops from secondary foci, most often located in kidney[2]. Most bladder lesions are found in the region of the trigone, especially around the ureteral orifices. The usual tuberculous granulomata appear in the submucosa which are usually few but may become confluent, with caseous necrosis. In males, there may be secondary involvement of the prostate, whereas in females the disease may be complicated by vasico – vaginal fistula[3]. Intravesical administration of Bacillus Calmette – Guerin (BCG), as used for the treatment of superficial carcinoma of the bladder, can result in granulomatous inflammation of this organ, which may be detected microscopically or on cytologic examination of bladder wash specimens[4,5]. The change can extend to the prostate and sometimes even to the lungs .

A great variety of benign mesenchymal tumours may arise in the bladder. Collectively, they are rare. They account to less than 1% of tumours of the urinary tract. The most common is leiomyoma. In the present study the incidence of leiomyoma was (2%). They tend to grow as isolated, intramural, encapsulated, oval – to – spherical masses, varying in diameter upto several centimeters. Occasionally, they assume submucosal pedunculated position. They have the histologic features of their counterparts else where.

Dysplastic changes in the bladder epithelium, are often seen in the urothelium in close anatomical relationship to a primary bladder tumour. In this study incidence of dysplasia was (10%). Recent studies have shown that dysplastic changes elsewhere in the bladder, especially those at some distance from the primary lesion, are of grave prognostic importance whether detected on histological examination of a cystectomy specimen,

Fig. 2

Fig. 2. Microphotograph showing papillary carcinoma of urinary bladder (H&E, 5X)

Fig. 3

Fig. 3. Microphotograph showing caseating granuloma of urinary bladder (H&E, 5X)

or by random biopsy of the apparently unaffected epithelium.[6,7,8]

Epithelial tumours of the urinary bladder develop most commonly in subjects 40 – 70 years old and do so in men about three times as frequently as in women.[9] In our study most of the patients were between 31 – 60yrs of age and tumours were more commen in men. According to various studies conducted in Kathmandu the common malignancies are carcinoma stomach, lung cancer, breast cancer, carcinoma cervix and skin cancer. In our study the incidence of urinary bladder cancer was 28%, it was high probably because the number of urologist in Nepal is restricted and all the cases analysed in our study were referred by them because of which concentration of the cancer cases might be high. Only seldom does bladder carcinoma arise in adolescent.[10] The study of age – adjusted death rates for bladder carcinoma in various countries shows a high rate for males in South Africa and a low one in Japan and Sweden, whereas the corresponding mortality rates for Denmark, the USA, the U.K. and Australia are more or less comparable.[9] The great majority (90%) of bladder cancers are transitional cell carcinoma, which includes grade I to III and carcinoma in situ. Transitional cell carcinoma of the bladder is less common in young individuals and it has been suggested that the prognosis in younger people is better than in the older patients.[11,12] In a study of 388 tumours of the male urogenital tract by Sharma et. al, Urinary bladder cancers comprised 29.52% of all the malignancies of male urogenital tract or 4.19% of all malignant growths in males.[13] The average age of patients was 53.9 years. Transitional carcinoma was the commonest type of tumour (91.9%). Stokes and Kelly[14] reported 23 cases of bladder cancer in patients under the age of 40 years and found that most were well differentiated and showed little evidence of invasion. Nevertheless, it is essential that the histological and clinical criteria used in planning treatment should be the same in younger patients as in those who are older.[15]

All transitional cell cancers, whatever their grade, have a tendency to recur following excision, and usually the recurrence exhibits greater anaplasia. In many instances, the recurrence is seen at a different site, and the question of a new primary tumour must be entertained. Overall, about 60% of grade I papillary carcinomas recur, in contrast to 80% to 90% of grade III lesions. In our study not a single case has been encountered with a recurrence of TCC after surgery till date.

CONCLUSION

Cystoscopic biopsies are a recognised procedure for early diagnosis of urinary bladder diseases when clinical and radiological findings are inconclusive. Analysis of cystoscopic biopsies was done to ascertain the type of urinary bladder lesions in Kathmandu valley.

ACKNOWLEDGEMENT

We are thankful to Prof. V. P. Mital, HOD, Department of Pathology for his valuable guidance.

REFERENCES

1. Yeole BB, Jussawalla DJ: Descriptive epidemiological assessment of urinary bladder and kidney; Indian J Med Res; Dec 1997, 106: 517-23.

2. Auerbach O: The pathology of urogenital tuberculosis, Int Clin 1940; 3:21 – 61.

3. Ba – Thike K, Than – Aye, Nan – Oo: Tuberculous vesicovaginal fistula. Int J Gynaecol Obstet 1992; 37: 127 – 130.

4. Betz SA, See WA, Cohen MB: Granulomatous inflammation in bladder wash specimens after intravesical bacillus Calmette – Guerin therapy of transitional cell carcinoma of the bladder. Am J clin Pathol 1993; 99: 244 – 248.

5. Lamm DZ. Complications of bacillus Calmette – Guerin immunotherapy. Urol Clin North Am 1992; 19: 565 – 572.

6. Coutts A G, Grigor KM, Fowler J W : Urethral dysplasia and bladder cancer in cystectomy specimens. British Journal of Urology 1985; 57: 535.

7. Kakizoe T, Matumoto K, Nishio Y, Ohtani M, Kishi K : Significance of carcinoma in situ and dysplasia in association with bladder cancer. Journal of Urology 1985; 133: 395.

8. Wolf H, Hojgaard K : Prognostic factors in local surgical treatment of invasive bladder cancer with special reference to the presence of urothelial dysplasia. Cancer 1983b; 51: 1710.

9. Wynder E L, Onderdonk L, Mantel N : An epidemiological investigation of cancer of the bladder. Cancer 1963; 16: 1388.

10. Benson R C, Tomera K M, Kelalis P P : Transitional cell carcinoma of the bladder in children and adolescents. Journal of Urology 1983; 130: 54.

11. Fitzpatrick J M, Reda M : Bladder cancer in patients 40 years old or less. Journal of Urology 1986; 135: 53.

12. Chang S-Y, Ma C-P : Transitional cell carcinoma of the urinary bladder in patients under 40 years of age. British Journal of Urology 1987; 60: 343.

13. Sharma S, Nath P, Srivastava AN, Singh KM; Tumours of the male urogenital tract: A clinicopathologic study: J Indian Med Assoc; 92 (11): 357-60, 372, Nov 1994.

14. Stockes M A, Kelly D G : Transitional cell carcinoma in patients under forty years of age. British Journal of Urology 1987; 59: 536.

15. Kurz K R, Pitts W R, Vaughan E D : The natural history of patients less than 40 years old with bladder tumors. Journal of Urology 1987; 137: 395.