

An analysis of flexible cystoscopic findings among patients visiting Urology outpatient services at a tertiary cancer center in Nepal.

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Abstract

Introduction: Cystoscopy is a common urological procedure done for diagnosis and surveillance of patients with urological ailments. With various lower urinary tract symptoms, flexible cystoscopy can be performed with a minimal discomfort to the patient and in a outpatient setting under local anesthesia. **Materials and Methods:** We retrospectively analyzed 468 patients undergoing flexible cystoscopy from January 2022 to July 2022 over a period of six months in the outpatient services of B.P. Koirala Memorial Cancer Hospital. **Results:** Majority of the patients (56.2%) had some pathology of the lower urinary tract among which urinary bladder mass or malignancy was the predominant findings with 35%. **Conclusion:** Flexible cystoscopy is an important tool in urology with high diagnostic yield.

Key Words: Cystoscopy, Cancer Urinary Bladder, Diagnosis, Urology

Introduction:

Cystoscopy is a common urological procedure done for diagnosis and surveillance of many lower urinary tract symptoms. Due to the recent advancement leading to its broader application, availability and simplicity, flexible cystoscopy has emerged as a valuable tool in urology. The purpose is to examine the lower urinary tract anatomy and evaluation of LUTS and various pathologies of the urethra, the sphincter the prostate and the bladder.¹⁻³

The introduction of flexible cystoscope in the 70s was a great leap forward. The procedure can be performed with minimal discomfort to the patient.⁴ The complications of cystoscopy

include dysuria (50%) hematuria (19%) and increased frequency (37%), all of which are usually self-limiting.^{2,3}

Cystoscopy is routinely used for detection of bladder malignancies with sensitivity ranging from 70-100% and specificity of 70%.^{2,7} Cystoscopy is a valuable diagnostic modality that achieves swift completion of diagnostic workup, and allows surgical intervention to be done more promptly. It should be considered as integral tool in the management of patients with LUTS.

The aim of this study to analyze the findings of the patients who underwent the procedure for any indication

Materials and Methods:

We performed a retrospective review of patients who underwent flexible cystoscopy evaluation in the Department of Urology in B.P. Koirala Memorial Cancer Hospital from January 01, 2023 to June 30, 2023.

The procedures were done under local anesthesia. Patients were explained about the procedure in detail. The procedure was carried out in lithotomy or supine position using a flexible cystoscope 16F with NS irrigation. The urethra was lubricated and anesthetized with 2% lignocaine jelly for 3-5 mins before insertion of the scope. With continuous NS irrigation, the lower urinary tract was evaluated from the external urinary meatus to the bladder following the standard cystoscopy template as per AUA guidelines.

A retrospective review of the procedure was done and expressed as frequency and percentage.

Results:

A total of 468 patients underwent flexible for several indications like diagnosis or surveillance during the study period. The median age of the patients was 60 years.

Among them 245 (52.3%) were male and 223 (47.6%) were female patients. Most of them 188 (40.1%) underwent the procedure for evaluation for hematuria. 426 patients (91%) underwent the procedure for diagnostic purpose while 42(9%) as a surveillance investigation.

Most patients (56.2%) were detected with a pathology of the lower urinary tract whereas 205 (43.8%) were normal. Bladder mass or malignancy was the predominant findings

with 35% occurrence followed by BEP (8.2%) and cystitis (7.9%).

Table 1: Demographics

Parameters	Frequency
Age	60 (58-89years)
Gender	
Male	245
Female	223
Medical history of	
Hematuria	188
CA Cervix	62
TURBT	42
CA Prostate	5
TURP	1
RCC	3
Post RC IC	1
Purpose	
Diagnosis	426
Surveillance	42

Table 2: Finding in Cystoscopy

Findings	n=468	%
Normal	205	43.8
Bladder mass	164	35
Cystitis	37	7.9
BPH	38	8.2
Poor visualization	11	2.3
Stricture	9	1.9

Bladder stone	2	0.4
Caruncle	1	0.2
Fistula	1	0.2

Hundred and one male patients and 63 female patients were diagnosed to have bladder tumor. Among them 42 underwent the procedure as a part of their surveillance: check cystoscopy. It revealed 11(26.19%) patients to have recurrence.

Among the 188 patients who underwent the procedure as a diagnostic tool for hematuria, 140 (74.4%) were found to have bladder tumor. 5 patients without hematuria were also diagnosed with a bladder tumor.

Sixty two of the patients who underwent the procedure were referred diagnosed with CA-Cervix. Cystoscopy was done to rule out the presence of bladder invasion and see secondary changes in the bladder post treatment (radiotherapy). 25 were found to have bladder invasion by the primary disease and 22 were found to have features suggestive of cystitis post radiation

Discussion:

Cystoscopy is a minimally invasive procedure frequently done as an integral part of urology(3). Direct visualization of the lower urinary tract offers high yield for diagnosis and surveillance.

Being a tertiary cancer center, most of our patients are either diagnosed or suspected of cancer. Thus the sample size does not particularly represent the general population. Hence the statistics does not properly represent benign disease rather a

retrospective study in a population prone to cancer or diagnosed with cancer.

Bladder tumor is the most common pathological finding in the study. Patients underwent cystoscopy either as a diagnostic or as a surveillance tool. Internationally 31-78% with bladder tumor is prone to recurrence(8). The recurrence rate in our study (26.19%) is lower than that found in other studies which may possibly be attributed to our small sample size.

Among the 188 patients who underwent the procedure as a diagnostic tool for hematuria, 140 (74.4%) were found to have bladder tumor. 5 patients without hematuria were also diagnosed with a bladder tumor. Classically, 2-5% of patients with microscopic hematuria and 10-20% with gross hematuria are diagnosed to have bladder tumor (9-11). The higher percentage of bladder tumor diagnosis in the study may be attributed to our center being a referral cancer center. Among patients with bladder cancer, 40% have hematuria while about 14% will not (12, 13).

. Cervical cancer with bladder invasion (FIGO stage IVA) represents about 2% of cervical cancers(14). It shows in literature that 23-80 % of patients with pelvic radiation develops radiation induced cystitis(15, 16).

The study has some drawbacks as this is a single center study and the study population does not reflect the characteristic of the general population. The study period was short and the sample size is relatively low. Despite all the drawbacks, we have tried to retrospectively analyze the findings of cystoscopy evaluation and reflect the characteristics in the group of population we

face. The results should be interpreted with a degree of caution.

Conclusion:

Cystoscopy due to its high diagnostic yield is a common procedure done for evaluation of the lower urinary tract. It is an excellent tool for diagnosis, surveillance and treatment and when done with a flexible scope it can be performed safely with minimal discomfort to the patient.

1. Flexible Cystoscopy Findings in Patients Investigated for Profound Lower Urinary Tract Symptoms, Recurrent Urinary Tract Infection, and Pain. *Journal of Endourology*. 2012;26(11):1468-72.
2. Jocham D, Stepp H, Waidelich R. Photodynamic diagnosis in urology: state-of-the-art. *European urology*. 2008;53(6):1138-50.
3. Engelsgerd JS, Deibert CM. *Cystoscopy: StatPearls Publishing, Treasure Island (FL); 2022*.
4. Kadi N, Menezes P. ABC of flexible cystoscopy for junior trainee and general practitioner. *Int J Gen Med*. 2011;4:593-6.
5. Burke D, Shackley D, O'reilly P. The community-based morbidity of flexible cystoscopy. *BJU international*. 2002;89(4):347-9.
6. Biardeau X, Lam O, Ba V, Campeau L, Corcos J. Prospective evaluation of anxiety, pain, and embarrassment associated with cystoscopy and urodynamic testing in clinical practice. *Canadian Urological Association Journal*. 2017;11(3-4):104.
7. Devlies W, de Jong JJ, Hofmann F, Bruins HM, Zuiverloon TC, Smith EJ, et al. The Diagnostic Accuracy of Cystoscopy for Detecting Bladder Cancer in Adults Presenting with Haematuria: A Systematic Review from the European Association of Urology Guidelines Office. *European Urology Focus*. 2023.
8. Flaig TW, Spiess PE, Agarwal N, Bangs R, Boorjian SA, Buyyounouski MK, et al. Bladder cancer, version 3.2020, NCCN clinical practice guidelines in oncology. *Journal of the National Comprehensive Cancer Network*. 2020;18(3):329-54.

9. Mariani AJ, Mariani MC, Macchioni C, Stams UK, Hariharan A, Moriera A. The significance of adult hematuria: 1,000 hematuria evaluations including a risk-benefit and cost-effectiveness analysis. *The Journal of urology*. 1989;141(2):350-5.
10. Grossfeld GD, Litwin MS, Wolf JS, Hricak H, Shuler CL, Agerter DC, et al. Evaluation of asymptomatic microscopic hematuria in adults: the American Urological Association best practice policy—part I: definition, detection, prevalence, and etiology. *Urology*. 2001;57(4):599-603.
11. Griffiths TRL, Cancer oboAoB. Current perspectives in bladder cancer management. *International Journal of Clinical Practice*. 2013;67(5):435-48.
12. Ben-David R, Morgan S, Savin Z, Dekalo S, Sofer M, Beri A, et al. Flexible Cystoscopy in the Setting of Macroscopic Hematuria: Do the Findings Justify Its Use? *Urologia Internationalis*. 2022;106(2):147-53.
13. Gonzalez AN, Lipsky MJ, Li G, Rutman MP, Cooper KL, Weiner DM, et al. The Prevalence of Bladder Cancer During Cystoscopy for Asymptomatic Microscopic Hematuria. *Urology*. 2019;126:34-8.
14. Sun R, Koubaa I, Limkin EJ, Dumas I, Bentivegna E, Castanon E, et al. Locally advanced cervical cancer with bladder invasion: clinical outcomes and predictive factors for vesicovaginal fistulae. *Oncotarget*. 2018;9(10):9299.
15. Wit EM, Horenblas S. Urological complications after treatment of cervical cancer. *Nat Rev Urol*. 2014;11(2):110-7.
16. Marks LB, Carroll PR, Dugan TC, Anscher MS. The response of the urinary bladder, urethra, and ureter to radiation and chemotherapy. *International Journal of Radiation Oncology* Biology* Physics*. 1995;31(5):1257-80.