



## Flexible Cystoscopy a Valuable Diagnostic Tool for Lower Urinary Tract Pathology

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### Abstract

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Conflicts of interest: None

**Objective:** To assess the role of flexible cystoscopy in the diagnosis of lower urinary tract pathology and its suitability as a routine diagnostic protocol in outdoor patients.

**Methods:** The cross sectional study was conducted at the advanced centre of kidney diseases and urology, Dhaka central international medical college, Dhaka from Jan 2016 to Jan 2019. All adult patients presenting with lower urinary symptoms to outdoor department were included. Flexible Cystoscopy was performed as an outdoor based procedure without sedation.

**Results:** Of the 249 patients in the study, 198 (79%) were male and 51 (21%) were female. Lower urinary tract pathologies were found in 192 (77%) patients. The most common pathology among males was enlarged prostate 56 (31%) patients. Urethral stricture, bladder neck high were found 23 (11%), 21 (10%) respectively. Among females, urethral stenosis was the most common pathology in 23 (32%) patients. Transitional cell carcinoma was seen in 11 (4.4%) patients having hematuria with inconclusive ultrasound and intravenous urography. All patients tolerated the procedure well with no procedure related complaints.

**Conclusion:** Flexible cystoscopy is an effective, well tolerated and easy way of detecting lower urinary tract pathologies. It can alter the management as well as support the diagnosis and management. It is also helpful in routine surveillance of bladder tumours of low grade and low stage. Flexible cystoscopy should therefore be used as a routine diagnostic protocol in outdoor practice.

**Keywords:** Flexible cystoscopy, lower urinary tract

### Introduction:

Endoscopic examination of the bladder, lower urinary tract and prostate gland is a time-honoured investigation for thorough evaluation<sup>1</sup>. It can also be used to collect urine sample, perform biopsies, removal of small stones, and D-J stent. Endoscopy of the urinary tract remains the cornerstone of urological therapy.

Over the years, continued refinement of the endoscopic instrument has permitted a progressive increase in the number and methods of their application. Cystoscopy under local anaesthesia has been established as an office-based procedure since 1980s.<sup>2</sup> The development of the smaller diameter, flexible endoscopes represent the greatest advance in urological endoscopy.<sup>3</sup>

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Endoscopic methods for diagnosis and treatment of urological diseases, the characteristics of their value and their importance for modern urology become evident by the fact that by means of these methods, the basis of which was created 100 yrs ago with the introduction of cystoscopy.<sup>4</sup>Most evidence suggests that outpatient flexible cystoscopy is associated with minimum complications.<sup>5</sup>The objective of the current study was to assess the role of flexible cystoscopy in the diagnosis of lower urinary tract pathologies and whether it is valuable enough to be used as routine diagnostic protocol in outdoor practice.

### Methods:

The study was conducted at the advanced centre of kidney diseases and urology, Dhaka central international medical college, Dhaka from Jan 2016 to Jan 2019. All adult patients presenting with lower urinary symptoms to outdoor department were included. X-ray of KUB region was done in all patients and those having positive findings were excluded. History was taken in the outpatient department and patients were counseled about the procedure. Ing amikacin 500mg i/v stat was given in the morning on the day of flexible cystoscopy which was performed as an outdoor based procedure without sedation and 2% lignocaine gel was used as the topical local anaesthetic agent.

### Results:

Of the 249 patients in the study, flexible cystoscopies performed, 198(79%) were male and 51(21%) were female. Lower urinary tract pathologies were found in 192(72%) patients of which 150(78.12%) male and 42(22%) female. In these patients, X-ray KUB had no positive finding. The most common pathology among

males was enlarged prostate 56(31%) patients. Urethral stricture, bladder neck high were found 23(11%), 21(10%) respectively. Among females, urethral stenosis was the most common pathology in 13(32%) patients. Transitional cell carcinoma was seen in 11(4.4%) patients having haematuria with inconclusive ultrasound and intravenous urography. All patients tolerated the procedure well with no procedure related complaints.

### Discussion:

The introduction of high-quality flexible cystoscope has allowed comfortable examination on an outdoor basis, using local anaesthetic gel to aid introduction of instrument.<sup>6,7</sup> The use of local anaesthetic has been questioned and there is little evidence that gel insertion decreases pain sensation, especially in females.<sup>8</sup> There has been a considerable increase in the use of flexible cystoscopy and this has led to the criticism that this procedure is being overused with no management benefit.<sup>9</sup> Lower urinary tract pathologies are grossly divided into two categories, i.e. pathologies related to urinary bladder and pathologies related to urethra. Urethral pathologies most of the time present with symptoms of bladder outlet obstruction and are sometimes not diagnosed on ultrasonography alone. Both pathologies of urinary bladder and urethra can easily be diagnosed by cystoscopy alone. Cystoscopy alone or in combination with excretory urography, or intravenous urography (IVU), is one of the most significant diagnostic tools in young patients with microscopic haematuria.<sup>10-12</sup> Haematuria was the presenting complaint in 11 patients in our study. With the use of urethroscopy, there is rapid completion of diagnostic workup, and operations for surgical conditions can be scheduled more promptly. The patients included in our study were all those who presented with lower urinary tract symptoms only and who had no pathology detected on x-ray KUB. Instead of waiting for ultrasonography, flexible cystoscopic was performed. There was detection of pathologies in 72% of cases. Another study<sup>9</sup> conducted with flexible cystoscopy in 1390 patients with positive findings in 46.14%. In our study enlarged prostate was found in 31% patients. Flexible cystoscopy in these cases ruled out any other pathology in bladder like small growth and carcinoma in situ (cis), which is not detected on ultrasonography. Urethral stricture 23%, bladder neck high 21%, bladder stone 2%. Our findings correlate with a study<sup>13</sup> which detected prostatic enlargement in 31%, urethral stricture in 23% patients. Both flexible and

**Table-I :** Pathologies detected on flexible cystoscopy.

Pathology	Frequency	Percentage from total sample	Percentage from positive pathological findings
Enlarged prostate	56	28.28%	37%
Urethral stricture	23	11%	15%
Bladder neck high	21	10%	14%
Female urethral stenosis	13	25%	30%
Transitional cell carcinoma	11	4.4%	5.5%

rigid cysto-urethroscopy are routinely used in surveillance of transitional cell carcinoma bladder tumour.<sup>14</sup> Urethrocystoscopy is the reference standard diagnostic test in the follow-up of patients with superficial bladder cancer, and flexible cystoscopy is frequently used for follow-up of bladder carcinomas.<sup>15,16</sup> Although by combining ultrasonography and flexible cystoscopy most carcinomas can be diagnosed and abnormalities detected, but there would be a delay in diagnosis due to overburden radiology department<sup>11</sup>. Bladder growth was detected in 11(4.4%) cases with haematuria. one study<sup>9</sup> showed cancer detection rate 6.10%. Early diagnosis of patients with bladder growth helped in early management as these patients did not have to wait for ultrasonography. Early resection of tumour was done on the next available day. New advancements have made cystoscopy not only a good diagnostic, but a therapeutic tool as well.

#### Conclusion:

Flexible cystoscopy is an effective, well tolerated and easy way of detecting lower urinary tract pathologies. It can alter the management as well as support the diagnosis and management. It is also helpful in routine surveillance of bladder tumours of low grade and low stage. Flexible cystoscopy should therefore be used as routine diagnostic protocol in outdoor practice.

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