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Clinical Presentation of Bladder Outlet Obstruction Amongst the Patients Presenting to A Tertiary Hospital in Assam

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ABSTRACT

The term denotes any anatomical or functional failure of the bladder to empty itself due to obstruction at its outlet. The incidence of bladder outlet obstruction is different and varied in both age and gender and etiology. Hence this study was conducted to assess the incidence, etiology and management of bladder outlet obstruction in patients presenting to a tertiary hospital in Assam. This was a hospital based observational study. A sample size of 70 cases were studied during the period between 01st June 2021 to 31st May 2022 with presentation of bladder outlet obstruction. The subject's incidence, etiological factors and clinical presentations and mangement of bladder outlet obstruction were recorded on data sheet and analyzed. Male gender was most commonly affected and maximum incidence of bladder outlet obstruction was observed in the age group of 61-70 years. The most common cause for bladder outlet obstruction was benign prostate hyperplasia (BPH), followed by urethral stricture. Most commonly used modality of treatment is transurthral resection of prostate, followed by medical management of benign prostatic hypertrophy (BPH). Bladder outlet obstruction is a common presentation in surgical emergency and out patient department. Evaluation and management of each case need to be through.

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Key Words
Bladder outlet obstruction, tertiary hospital

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INTRODUCTION

The term denotes any anatomical or functional failure of the bladder to empty itself due to obstruction at its outlet. Retained urine may lead to dysfunction of the muscular conduit and reservoir, followed by renal parenchymal damage due to backflow pressure, which is initially reversible and then irreversible. Etilogy of bladder outlet obstruction may be functional or anatomic. Symptoms of lower urinary tract symptoms may be obstructive, irritative or combination of both. Obstructive symptoms typically include hesitancy, incomplete bladder emptying sensation, diminished urinary stream and post voiding urinary dribbling. Irritative complaints include urinary urgency, frequency of urination, occasional dysuria, and nocturia. Bladder outlet obstruction may also occur in the complete absence of symptoms and be first identified in the scenario of urinary retention of the upper urinary tracts[1].

Functional obstruction may be caused by detrusor sphincter dyssynergia (DSD), either at the smooth muscle level or rhabdosphincter level. Primary bladder neck obstruction can be either functional or anatomical in character, or due to dysfunctional voiding, is associated with learned voiding disorders or pelvic floor dysfunction associated with pain syndromes. Benign prostatic enlargement (BPH) or urethral stricture is the most common cause of anatomical bladder outlet obstruction. In women, anatomic obstruction most commonly arises from incontinence procedures[2].

If bladder outlet obstruction is not prevented, timely treated or neglected may lead to acute or chronic renal insufficiency or overt kidney failure. Obstruction may lead to salt-losing nephropathy and urinary concentrating defects. Renal tubular acidosis (RTA) type IV, hyperkalemia, hypomagnesaemia, and hypophosphatemia are common sequelae of chronic obstruction[2,3]. Although acute or chronic obstruction may cause urinary tract infection(UTI), other sequelae such as renal calculi, hypertension and polycythemia are associated with chronic retention. Therefore, adopting a stepwise approach in evaluating bladder outflow obstruction patients is essential to initiate efficient management. Hence, the classic initial step is to study the pattern of presentation, commonly found causes, observe the pathological changes due to Bladder outflow obstruction and research the treatment outcome is of immense importance nowadays[4].

Although urodynamic and pressure flow evaluation is the gold standard diagnostic tool, other modalities can also be used, including post-void residual analysis, urinary flow rate, cystoscopy and selected radiological imaging. In addition, patient self-appraisal of symptoms using various inventories such as the American urological association symptom index or International prostate symptom index, or the International prostate symptom score is relevant to initial assessment and subsequent follow-up. In our institution, bladder outlet obstruction is a common condition, it comprises various aetiology and various options available to manage each disease. My study aims to study aetiology, incidence, presentation and management.

Aims and objectives: To study various clinical presentations of bladder outlet obstruction with special reference to its management.
primary objective: To assess the clinical profile of bladder outlet obstruction.
Secondary objective: To assess the effect of different management protocols.

MATERIALS AND METHOD

Place of study: Department of General Surgery, Assam Medical College and Hospital, Dibrugarh Duration of study. One year (1 st June 2021 to 31st May 2022).

Type of study: Hospital-based observational study.

Study population: All diagnosed cases of bladder outlet obstruction and treated in AMCH, Dibrugarh, during the study period.

Sample size: Considering 95% confidence interval with 5% absolute error and difficulty in micturition 96% to be the most common clinical presentation, the sample size of the present study was calculated and rounded off to be 70.

Inclusion criteria: All the diagnosed cases of bladder outlet obstruction attending to the department of General Surgery.

Exclusion criteria:

- Age less than 18 years
- Pelvic surgery with post-operative retention
- Unconscious and comatose patient with retention

Method:

- All patients presenting with retention of urine, dysuria, hesitancy, dribbling of urine, feeling of incomplete bladder evacuation, nocturia, symptoms of urinary tract infection, frequent urination and straining to urinate, hematuria, blood from urethra
- Detailed history, clinical examination of the patients was taken
- Diagnosis of bladder outlet obstruction was based on
- Clinical history
- Unable to catheterize the patient

- Digital rectal examination
- Routine blood investigations including electrolytes (Na+, K +, Ca2+, PO4-)
- Urine RE and CS
- Imaging studies such as ultrasonography of the whole abdomen and KUBP region with post-void residual urine estimation, micturating cystourethrogram, retrograde urethrogram and CT KUB (plain and contrast)
- Patients were selected as per inclusion and exclusion criteria till sample size criteria were met

Data collected regarding:

- Clinical findings (history, the fullness of the bladder, lower abdominal pain, local examination, digital rectal examination)
- Radiological findings (x-ray KUB, ultrasonography with post-void residual volume, micturating cystourethrogram, retrograde urethrogram, CT KUB(plain and contrast)
- Clinical findings (unable to insert smaller size catheter, digital rectal examination, intraoperative findings)

Management: Patients were managed according to the causes by Medical management of BPH, TURP, Urethroplasty, VIU, Cystolithotomy, Open Prostatectomy, Bladder neck incision, TURBT etc.

Statistical analysis: The data obtained thus were then analysed with frequency (%), mean±SD, Pie diagram, bar diagram etc. will be used. Microsoft Excel and Statistical Package for the Social Sciences (SPSS) software were also used.

Ethical clearance: Ethical clearance was obtained from the Institutional Ethics Committee (H) of AMCH prior to the conduct of the study.

Written and informed consent: Written and informed consent was taken from each and every participant in the study.

RESULTS AND OBSERVATIONS

In the present study youngest patient is of 21 years, while the oldest patient is 82 years old. The maximum occurrence was seen in the age group of 61-70 years (40%), followed by 51-60 years (20%) and 71-80 years (15.71). No patient was found in the group of less than 20 years. In this study, 94.29% cases of male gender and 5.71% cases female gender were effected. The male and female ratio is 16.5:1 The present study showed difficulty in micturition to be the most common symptom (97.14%), followed by retention of urine in 85.71% and poor stream (57.14%). The least common symptom seen was shock (1.43%) (Table 1-5).

The present study showed distended bladder to be the most common clinical finding (85.71%), followed by enlarged firm prostate in 51.43% and blood in meatus in 14.29%. The least common symptom found to be shock (1.43% and dehydration 1.43%). Our study showed benign prostatic hypertrophy to be the most common culprit causing bladder outlet obstruction in 51.43% of cases, followed by urethral stricture in 12.86% and carcinoma prostate in 7.14%. The least common cause found to be carcinoma penis. In our study, this was found that urinary tract infection was the most common complication associated with bladder outlet obstruction (51.43%), followed by anaemia (17.14%) and hyperkalemia in (12.86%) of cases. The least common complication found to be RTA type 4, renal calculi, hypertension and polycythemia, each responsible for 1.43% (Table 6-10).

The present study showed TURP was the most common treatment modality used (37.14%), followed by medical management of BEP in 14.29% and VIU in 10% of cases of BOO. The least common modality used was total penectomy with perineal urethrostomy, radical cystectomy and ileal conduit, open cystolithotomy and endoscopic cystolithalopaxy 1.43% each. In our study, the follow-up showed hematuria in two cases of post TURP and one case of bladder neck stenosis developing stricture and recurrence in one case of meatal stenosis and one case of urethral stricture. One case of carcinoma prostate has to be treated with chemoradiation. The present study showed that TURP has the most common complication of hematuria and electrolyte imbalance in 11.43% of cases, followed by hematuria in TURBT in 1.43% of cases. (Fig1-12).

DISCUSSIONS

Age and sex distribution: In this study, the age distribution was from less than 20 years (excluding the paediatric age group) to >80 years of age.

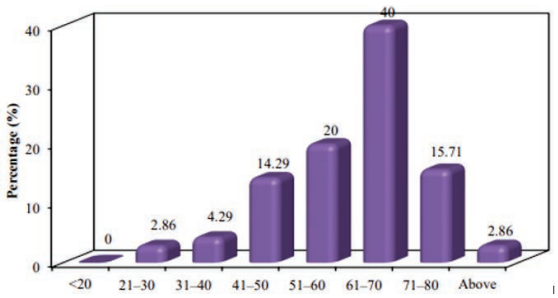

Fig. 1: Showing Age Distribution

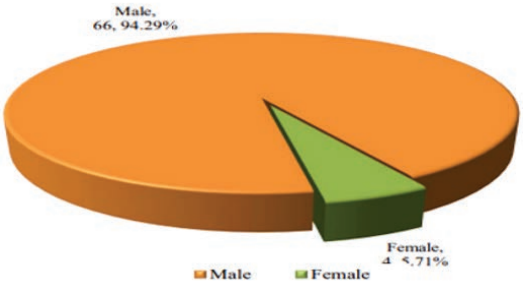

Fig. 2: Showing Gender Distribution

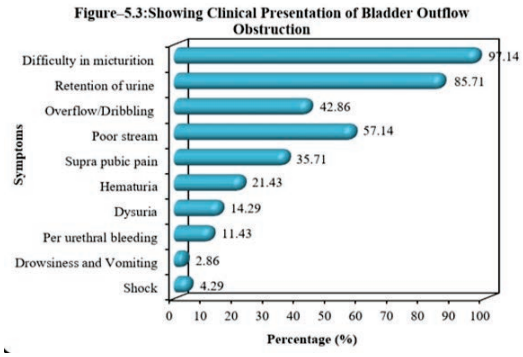

Fig. 3: Showing Clinical Presentation of Bladder Outflow Obstruction

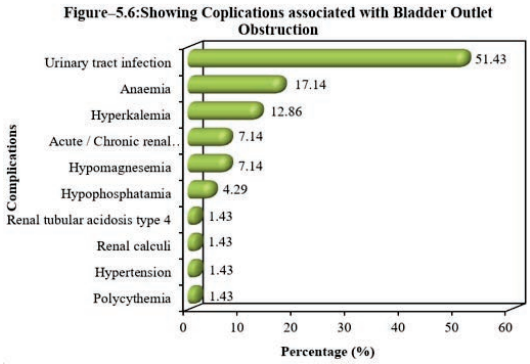

Fig. 4: Showing Clinical Signs of Bladder Outlet Obstruction

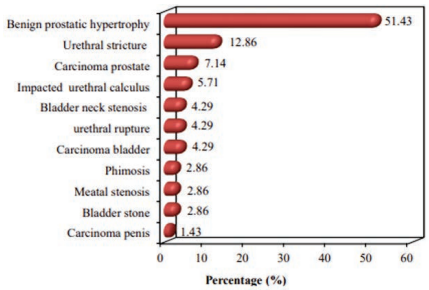

Fig. 5: Showing aetiologies

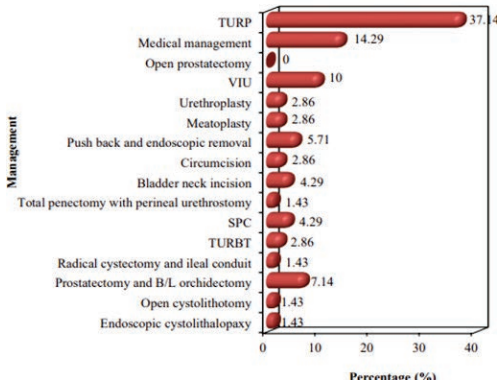

Fig. 7: Showing management

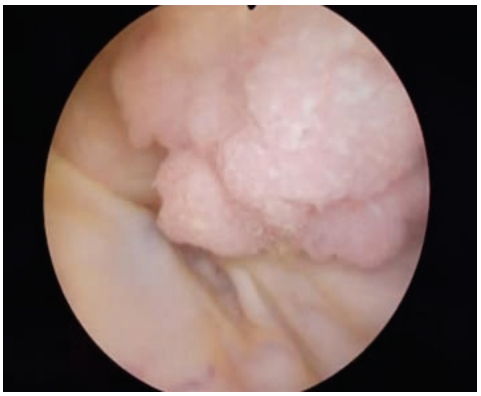

Fig. 8: Bladder mass

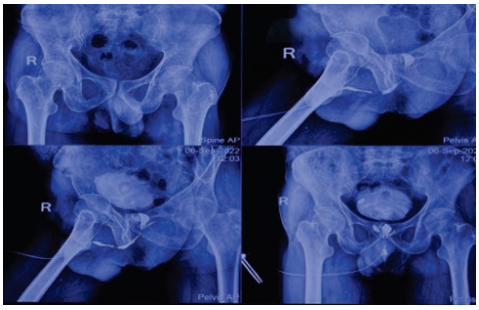

Fig. 9: Showing urethral stricture in rgu

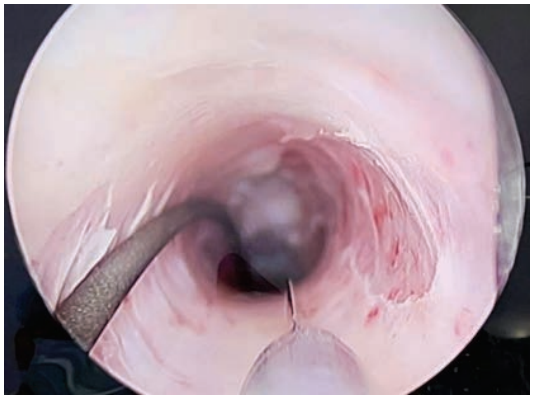

Fig. 10: Showing visual internal urethrotomy

Fig. 11: Xray showing vesical calculus

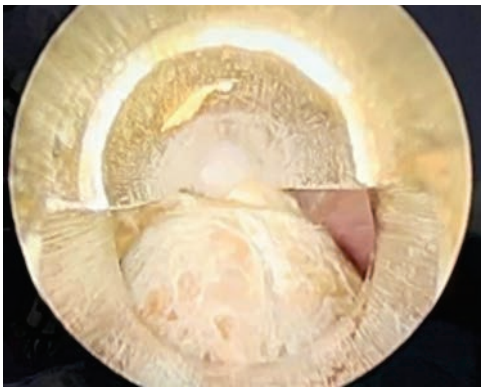

Fig. 12: Cystoscopic image of vesical calculus

Fig. 13: Ca penis

Table 1: Showing age distribution

Age group (years)	Number (n)	Percentage
<20	0	0.00
21-30	2	2.86
31-40	3	4.29
41-50	10	14.29
51-60	14	20.00
61-70	28	40.00
71-80	11	15.71
Above 80	2	2.86
Total	70	100.00

Table 2: Showing Gender Distribution

Gender	Number (n)	Percentage
Male	66	94.29
Female	4	5.71
Total	70	100.00
Ratio (male: female)	16.5: 1	

Table 3: Showing clinical presentation of bladder outflow obstruction

Symptoms	Number (n = 70)	Percentage
Difficulty in micturition	68	97.14
Retention of urine	60	85.71
Overflow/Dribbling	30	42.86
Poor stream	40	57.14
Supra pubic pain	25	35.71
Hematuria	15	21.43
Dysuria	10	14.29
Per urethral bleeding	8	11.43
Drowsiness and Vomiting	2	2.86
Shock	1	1.43

Table 4: Showing Clinical Signs of Bladder Outlet Obstruction

Signs	Number (n = 70)	Percentage
Distended bladder	60	85.71
Enlarged firm prostate	36	51.43
Anemia	12	17.14
Blood in meatus	8	11.43
Enlarged nodular hard prostate	5	7.14
Pinhole meatus	2	2.86
Pus discharge	3	4.29
Ballotable kidney	3	4.29
Palpable stone	2	2.86
Palpable stone in the posterior urethra	2	2.86
Oedema	2	2.86
Shock	1	1.43
Dehydration	1	1.43

Table 5: Showing aetiologies

Signs	Number (n = 70)	Percentage
Benign prostatic hypertrophy	36	51.43
Urethral stricture	9	12.86
Carcinoma prostate	5	7.14
Impacted urethral calculus	4	5.71
Bladder neck stenosis	3	4.29
urethral rupture	3	4.29
Carcinoma bladder	3	4.29
Phimosis	2	2.86
Meatal stenosis	2	2.86
Bladder stone	2	2.86
Carcinoma penis	1	1.43

Table 6: Showing complications associated with bladder outlet obstruction

Complications	Number (n = 70)	Percentage
Urinary tract infection	36	51.43
Anaemia	12	17.14
Hyperkalemia	9	12.86
Acute / Chronic renal insufficiency	5	7.14
Hypomagnesemia	5	7.14
Hypophosphatamia	3	4.29
Renal tubular acidosis type 4	1	1.43
Renal calculi	1	1.43
Hypertension	1	1.43
Polycythemia	1	1.43

The peak age of bladder outlet obstruction was seen in the age group of 61-70 (40%), that is in the seventh decade. The male gender was the most commonly

Table 7: Showing management

Type of disease	Management	Number (n = 70)	Percentage
Benign prostatic hypertrophy	TURP	26	37.14
	Medical management	10	14.29
	Open prostatectomy		
Urethral stricture	VIU	0	0
	Urethroplasty	7	10.00
Meatal stenosis	Meatoplasty	2	2.86
Impacted urethral calculus	Push back and endoscopic removal	4	5.71
Phimosis	Circumcision	2	2.86
Bladder neck stenosis	Bladder neck incision	3	4.29
Carcinoma penis	Total penectomy with perineal urethrostomy	1	1.43
Rapture urethra	SPC	3	4.29
Carcinoma bladder	TURBT	2	2.86
	Radical cystectomy and ileal conduit	1	1.43
Carcinoma prostate	Prostatectomy and B/L orchidectomy	5	7.14
Bladder stones	Open cystolithotomy	1	1.43
	Endoscopic cystolithalopaxy	1	1.43

Table 8: Follow up

	Follow Up		
Type of disease	At 1 month	At 3 months	At 6 months
Benign prostatic hypertrophy	Uneventful	Hematuria in 2 cases of post TURP	Uneventful
Urethral calculus	Uneventful	Uneventful	Uneventful
Urethral stricture	Uneventful	Uneventful	1 case developed restricture
Urethral rapture	Uneventful	Uneventful	Repair done on 6th month
Bladder neck stenosis	Uneventful	Uneventful	1 case developed acute retention due to stricture
Phimosis	Uneventful	Uneventful	uneventful
Meatal stenosis	Uneventful	Uneventful	1 case developed meatal stenosis due to BXO
Carcinoma penis	Uneventful	Uneventful	Uneventful
Carcinoma prostate	Anti-androgen therapy started	Uneventful	One case did not respond to anti-androgen therapy, so chemoradiation started

Table 9: Complications associated with management

	Post operative			
Management	Early <7 Days	Late 7-90 Days	Number (n = 70)	Percentage
TURP	Hematuria in 4 cases, Electrolyte imbalance in 2 cases	Hematuria in 2 cases	8	11.43
Urethroplasty	No	No	0	0.00
VIU	No	No	0	0.00
TURBT	No	Hematuria in 1 case	1	1.43
Bladder neck incision	No	No	0	0.00
BNI	No	No	0	0.00
Meatoplasty	No	No	0	0.00
Circumcision	No	No	0	0.00
Prostatectomy with B/L orchidectomy	No	No	0	0.00
Total penectomy with perineal urethrostomy	No	No	0	0.00
Open cystolithotomy	No	No	0	0.00
Endoscopic cystolitholapaxy	No	No	0	0.00
Radical cystectomy with ileal conduit	No	No	0	0.00

Table 10: Showing Follow up at 1, 3 and 6 months

	Follow Up		
Type of Disease	At 1 month	At 3 months	At 6 months
Benign prostatic hypertrophy	Uneventful	Hematuria in 2 Cases of post TURP	Uneventful
Urethral calculus	Uneventful	Uneventful	Uneventful
Urethral stricture	Uneventful	Uneventful	1 case developed restricture
Urethral rapture	Uneventful	Uneventful	Repair done on 6th month
Bladder neck stenosis	Uneventful	Uneventful	1 case developed acute retention due to stricture
Phimosis	Uneventful	Uneventful	uneventful
Meatal stenosis	Uneventful	Uneventful	1 case developed meatal stenosis due to BXO
Carcinoma penis	Uneventful	Uneventful	Uneventful
Carcinoma Prostate	Anti-androgen therapy started	Uneventful	One case did not respond to anti-androgen therapy, so chemoradiation started

affected, as found in the study, 94.29% of patients were male, while 5.71% were female. The study results are in the similar trend to the studies of Jahangir *et al.*[5], Katakwar *et al.*[6], Udoh *et al.*[7] But the study done by Rakib *et al.*[8] showed a different trend, which showed the peak of bladder outlet obstruction is to be 5th decade. Katakwar *et al.*[6] Rakib *et al.*[8] Jahangir *et al.*[5] in their respective studies, found the same trend of sexual distribution.

Aetiology: Benign prostatic hyperplasia was found to be the most common cause leading to bladder outlet

obstruction. Most of these patients presented in the 7th decade. The mean age of presentation was found to be 61 years. These findings correlate to the findings published by Dmochowski *et al.*[1], Jahangir *et al.*[5] and Katakwar *et al.*[6] In the series published by Dawson *et al.*[2] the mean age of presentation of BEP was 72 years. Urethral stricture was the next most common cause of bladder outlet obstruction, as found in our study in 12.86% of patients. The mean age of presentation of urethral stricture is 53 years.

These results are similar to the studies of Masu *et al.*[9] and the study of Satter *at el.*[10] The third most common aetiology found to cause bladder outlet obstruction was carcinoma prostate. It was found in 7.1% of patients. These findings are similar to the study of Katakwar *et al.*[6] Urethral rapture was another common cause of bladder outlet obstruction. They mostly occur during road traffic accidents leading to pelvic fractures. 4.3% of cases of bladder outlet obstruction were caused by urethral rapture in our study. In the study of Rakib *et al.*[8] urethral rapture was found to be the third most common cause of bladder outlet obstruction, accounting for 13% of causes of obstruction, whereas Jahangir *et al.*[5] found 14%. Carcinoma bladder was another common cause of bladder outlet obstruction. In our studies, 4.3% of patients were found to have outlet obstruction because of it. In the study of Katakwar *et al.*[6] the incidence was 7%, in Jahangir *et al.*[5] 4% of cases are due to carcinoma bladder.

In females, bladder neck stenosis was found to be the most common cause of bladder outlet obstruction. It caused 4.3% of bladder outlet obstruction in our study. The age group was found to be associated with 40-50. In the study of Katakwar *et al.*[6] the incidence is found to be 6%. The findings are similar to Blaivis *et al.*[11] Impacted urethral stones were another common cause of bladder outlet obstruction. In our study, 5.7% cause of bladder outlet obstruction was found to be due to impacted urethral stones. Jahangir *et al.*[5] found 22% of cases are caused by it, while Rakib *et al.*[8] found that 10% is associated with it. Meatal stenosis was another cause of bladder outlet obstruction.

In our study, 2.9% of cases were found to be because of it, whereas in the study of Rakib *et al.*[8] 1% of cases were found to be caused by meatal stenosis. Phimosis was found to be related to 2.9% of bladder outlet obstruction in our study. Katakwar *et al.*[6] found in their study that 12% of cases are caused by bladder calculus, while in our study 2.86% were due to the same. Carcinoma penis was found to be causing 1.4% of bladder outlet obstruction in our study.

Presentation of patient: In our study, the most common presentation of a patient with bladder outlet obstruction was found to be difficulty in micturition, which is present in 97.14% of patients. The second most common symptom was acute retention of urine which was complained by 85.71% of patients. The poor stream was the next common complaint (57.14% of cases), followed by overflow/ dribbling in 42.86% of cases, suprapubic pain in 35.71% of cases and hematuria in 21.43%. Other presenting complaints were-dysuria (14.29%), per urethral bleed (11.43%), drowsiness and vomiting (1.43%) and shock (1.43%). Rakib *et al.*[8] in their study found similar trends of results, the most common presentation they found to be difficulty in micturition (96%), followed by retention of urine (79%), dribbling/overflow (41%), poor stream (39%), suprapubic pain (33%), hematuria (21%).

Clinical symptoms: The most common presentation clinically found in our study was found to be distended bladder (85.71%), anemia(17.14%), blood in meatus (11.42%), pinhole meatus (2.86%), pus discharge (4.29%), ballotable kidney (4.29%), palpable stone (2.86%). In per rectal examination, the most common finding was an enlarged firm prostate (51.43%) and enlarged nodular hard prostate (7.14%). These findings in the same trends are similar to the study of Rakib *et al.*[8] that showed distended bladder (92%), blood in meatus (6%), pus discharge (18%), enlarged firm prostate (31%), enlarged hard, nodular prostate (4%), ballotable kidney (4%). A similar trend of results were seen in the study of Rakib *et al.*[8]

Complications: Our study showed that bladder outlet obstruction was associated with most common complication of urinary tract infection in 51.43%, followed by anaemia in 17.14% and hyperkalemia in 12.86% of cases. Other complications found were acute or chronic renal insufficiency (7.14%), hypomagnesemia (7.14%), hypophosphatemia(4.29%), renal tubular acidosis type 4(1.43%), renal calculi (1.43%), hypertension (1.43%), polycythemia (1.43%). A similar trend of result was found in Rakib *et al.*[8]

Investigations: In our study, 42.85% of patients had enlarged prostate and 4.29% had nodularity in ultrasound. Fibrosed hard nodularity was found in 2.86% and 4.29% had a mass in the bladder. X-ray KUB shows calculus in 8.57% of cases. 17.14% of cases showed an abnormality in either RGU or MCU, including stricture and bladder neck stenosis. Diagnostic cystoscopy was done in 17.14% of cases. Anaemia was found in 17.14% of cases. In the study of Rakib *et al.*[8] 31% had an enlarged firm prostate, and an enlarged hard, nodular prostate was found among 4% of patients. Fibrosed hard nodularity was found in 3%. Anaemia was present in 34%.

Management: Among the patients in our study, benign prostatic hyperplasia, which comprises to be the most common cause, was managed conservatively with

medical therapy with alpha-blockers and 5 alpha-reductase inhibitors in 14.29 % and 37.14 % cases were treated with transurethral resection of prostate. In our patients, BEP grade 1 and grade 2 and grade 3 without chronic retention and patient who are unfit or unwilling for surgery are treated with medical management, while those with BEP grade 1-4 with chronic retention and BEP grade 3, grade 4 were treated with TURP. 4 post-operative cases of TURP was associated with an early complication of hematuria and 2 cases showed late hematuria. Similar management was observed in Katakwar *et al.*[6] and Udoh *et al.*[7] studies.

Our next common culprit, urethral stricture (12.86%) was treated in 10% of cases with visual internal urethrotomy and 2.86% of cases were treated with Johanson"s two-stage urethroplasty. Treatment depended on the location, length and co-morbid conditions of the patient. For length less than 2 cm strictures VIU and length more than 2 cm urethroplasty was done. Similar treatment was observed in Katakwar *et al.*[6] and Udoh *et al.*[7] studies

Carcinoma prostate was found to be responsible for bladder outlet obstruction in 7.14%. They were treated with prostatectomy with bilateral orchidectomy and anti-androgen therapy. They were followed up with serum PSA level and USG, one case showed an increase in PSA despite anti-androgen therapy, so chemoradiation was started. A similar treatment strategy was observed in Katakwar *et al.*[6] and Udoh *et al.*[7] studies.

Impacted Urethral calculus was found to be responsible for 5.71% of cases of bladder outlet obstruction, which were treated with pushback of the stone and endoscopic removal (5.71%) as they were impacted in the posterior urethra. Bladder neck stenosis was the most common cause found in females (4.29%) and they were treated with bladder neck incision (4.29%). In the study done by Katakwar *et al.*[6] all 6 cases of bladder outlet obstruction were caused by bladder neck stenosis and in another study by Blaivas *et al.*[11] 6 of 7 cases of obstruction were caused by the same. The treatment strategy was similar in both studies to our study. Urethral rupture was found to be the cause in 4.29 % of cases, which were almost always associated with pelvic fractures due to trauma. Among them, 4.29% of cases were managed by supra pubic catheterization and delayed repair. Carcinoma bladder causes 4.29% of bladder outlet obstruction. Among them, 2.86% of cases were treated with transurethral removal of the bladder and intravesical BCG therapy and another 1.43% of cases were treated with radical cystectomy and ileal conduit. One post-operative case of TURBT presented with the late complication of hematuria. 2.86% of cases were caused by phimosis. All the cases were treated with circumcision (2.86%). Another 2.86% were due to meatal stenosis, which was treated with meatoplasty (2.86%). 2.86% of cases were found to be caused by bladder stone, they were treated with open cystolithotomy in 1.43% of cases and another 1.43% of cases were treated with endoscopic cystolithalopaxy, depending on the size 3 cm of the stone. 1.43% of cases were found to be caused by carcinoma penis and were treated with total penectomy and perineal urethrostomy.

Follow up: During follow-up in our study, two cases of benign prostatic hyperplasia, which were treated with TURP, presented with late hematuria which were managed by conservative approach. One case of urethral stricture developed stricture again, which was treated with urethroplasty. One patient with bladder neck stenosis later presented with stricture. Another patient of meatal stenosis with BXO later presented with stenosis, while one case of carcinoma prostate on anti-androgen therapy did not respond to that, for which we started him on chemoradiation.

CONCLUSION

The present study represents the observations of 70 cases of bladder outlet obstruction in a tertiary hospital Assam medical college and hospital. The aim of the study was to find out the causes of bladder outlet obstruction, age incidence of various causes, pattern of clinical presentation, clinical findings, pattern of investigations prescribed, investigation findings, treatment and follow-up in such cases. It is a common surgical problem and early diagnosis is very important to prevent complications and morbidities. The predominant sufferer was found to be men and the commonest cause of bladder outflow obstruction was benign enlargement of prostate. Bladder outlet obstruction may lead to disastrous complications. So careful assessment, prompt diagnosis and appropriateness are essential to prevent complications.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In that form the patients have given their consent for all the clinical information and understood that their names and initials will not be published.

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