

Surgical Management and Post-Operative Outcomes of Urinary Outflow Obstruction: Experience of 50 Cases in Bangladesh

Jahangir Alam¹, Rumi Farhad Ara²

¹Associate Professor, Department of Surgery, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh;

²Associate Professor, Department of Gynaecology & Obstetrics, Kushtia Medical College, Kushtia, Bangladesh

[Received: 2 January 2017; Revised: 6 March 2017; Accepted: 11 April 2017; Published: 1 July 2017]

Abstract

Background: Management of urinary outflow obstruction is very crucial. **Objective:** The purpose of the present study was to see the different management of urinary outflow obstruction with their post-operative outcomes. **Methodology:** This non-randomized clinical trial was conducted in the Department of Surgery at Rajshahi Medical College, Rajshahi, Bangladesh from September 1994 to December 1995 for a period of one year and three months. All the patients who were presented with bladder outflow obstruction and were admitted in the general surgical unit of the hospital were taken as study population. These patients were surgically managed in different procedures. The follow up was done to record the post-operative surgical outcomes. **Result:** A total number of 50 patients were recruited for this study. Benign enlargement of prostate was found in 13 cases of which 11(22.0%) cases were managed by suprapubic transvesical prostatectomy. Impacted urethral stone was found in 13 cases of which 4(8.0%) cases were managed by urethro-lithotomy followed by repair of urethra and indwelling catheter. Stricture urethra was found in 11 cases and all cases (100.0%) cases were managed by intermittent dilatation under general anesthesia. In 7 cases of rupture urethra, initially all patients were managed by suprapubic cystostomy which was 7(14.0%) cases in number. All the 3 cases of carcinoma prostate were managed by prostatectomy and radiotherapy plus hormone therapy. A total number of 16 patients were managed by prostatectomy of which 1(2.0%) case was developed immediate postoperative hemorrhage which was managed by blood transfusion and continuous irrigation with normal saline. One patient developed postoperative clot retention due to blockage of Foley's catheter, two patients developed postoperative incontinence, immediately after removal of the catheter. Out of 11 patients of impacted urethral stone, one developed urethral fistula and one developed UTI. Recurrent stricture urethra occurred in 3 patients. Seven patients with rupture urethra, 3 developed stricture urethra and 3 developed stricture urethra. **Conclusion:** In conclusion different surgical procedure are employed during the management of urinary outflow obstruction and immediate postoperative hemorrhage, postoperative clot retention, postoperative incontinence, urethral fistula, UTI and recurrent stricture urethra are the most common complication after surgical management of urinary outflow obstruction patients. [Journal of National Institute of Neurosciences Bangladesh, 2017;3(2): 84-88]

Keywords: Management; Outcomes; Urinary Outflow Obstruction

Correspondence: Dr. Jahangir Alam, Associate Professor, Department of Surgery, Shaheed Suhrawardy Medical College, Sher-E-Bangla Nagar, Dhaka, Bangladesh; Email: jahagirdr11@gmail.com

Conflict of Interest: The authors declare that they have no competing interest.

Contributions to Authors: JA has performed the data analysis and writing of the manuscript. Both authors have read and approved the final version of the manuscript.

Funding: This research project was not funded by any group or any institute on.

How to cite this article: Alam J, Ara RF. Surgical Management and PostOperative Outcomes of Urinary Outflow Obstruction: Experience of 50 Cases in Bangladesh. J Natl Inst Neurosci Bangladesh, 2017;3(2): 84-88

Copyright: ©2017 Alam and Ara. Published by Journal of National Institute of Neurosciences Bangladesh. This article is published under the Creative Commons CC BY-NC License (<https://creativecommons.org/licenses/by-nc/4.0/>). This license permits use, distribution and reproduction in any medium, provided the original work is properly cited, and is not used for commercial purposes.

Introduction

Urinary bladder outflow obstruction is considered as one of the extreme catastrophe in comparison to other

surgical emergencies¹. Obstruction is one of the most important abnormalities of the urinary tract, since it eventually leads to decompensation of the muscular

conduits and reservoirs, back pressure, and atrophy of renal parenchyma². It also invites infection and stone formation, which cause additional damage and can ultimately end in complete unilateral or bilateral destruction of the kidneys³.

The majority of patients having bladder outflow obstruction were managed by minor and major surgical procedure with low incidence infection or complication⁴. Careful handling, proper diagnosis, correct decision and prior management are the key point to overall management of bladder outflow obstruction⁵. Mortality and morbidity due to renal parenchymal damage following bladder outflow obstruction can be prevented by early diagnosis and management⁶. The purpose of the present study was to see the different management of urinary outflow obstruction with their post-operative outcomes.

Methodology

This study represents prospective study of 30 patients with bladder outflow obstruction. All of these patients were admitted in the general surgical unit of Rajshahi Medical College & Hospital, Rajshahi, Bangladesh from the period of September from September 1994 to December 1995 for a period of one year and three months. The patients who were admitted with the bladder outflow obstruction in general surgical unit of the hospital were taken as study population. Complete surgical examination was carried out keeping in mind the associated co-morbidities, renal function and other pathological condition of cardiovascular, nervous and other systems. Routine blood, urine, stool examination, blood urea, fasting blood sugar, serum creatinine, routine urine examination, chest X-ray, ECG, plain X ray KUB, IVU, USG of KUB and pelvis, Urine for C/S, Isotope renogram were performed to exclude the different pathology. Benign enlargement of prostate (n=13) were managed by suprapubic transvesical prostatectomy and by Milling's procedure. Impacted urethral stone (n=13) was managed by urethra-lithotomy followed by repair of urethra and indwelling catheter and cysto-lithotomy (suprapubic) after pushback of the stone to the bladder. Stricture urethra (n=11) was managed by intermittent dilatation under general anesthesia. In case of rupture urethra (n=7), initially all patients were managed by suprapubic cystostomy; some of the patients were managed by urethral dilatation and were referred to urology department. Carcinoma prostate (n=3) was managed by prostatectomy and radiotherapy plus hormone therapy. Neurogenic bladder due to spinal

injury (n=2) was managed by catheterization and postural change and then was referred to neurosurgery unit for further management. Bladder neoplasm (n=2) was managed by excision of mass plus chemotherapy and radiotherapy. Posterior urethral valve (n=1) was initially managed by catheterization and subsequently referred to urology department of specialized hospital. In prostate and bladder neoplasm cases of bladder outflow obstruction, these specimens were kept in 10.0% formalin solution and were sent for histopathology examination. Follow up was done during hospital stay of the patients. These patients were surgically managed in different procedures. The follow up was done to record the post-operative surgical outcomes. All the complications during operation and hospital stay were recorded.

Results

A total number of 50 patients were recruited for this study. The age of the patients was ranged from 2 to 70 years. The age range was 41 to 50 years (Table 1).

Table 1: Table 1: Age Distribution among the Study Population (n=50)

Age Group	Frequency	Percentage
0 to 10 Years	9	18.0
11 to 20 Years	2	4.0
21 to 30 Years	8	16.0
31 to 40 Years	3	6.0
41 to 50 Years	11	22.0
51 to 60 Years	9	18.0
61 to 70 Years	8	16.0
Total	50	100.0

Benign enlargement of prostate was found in 13 cases of which 11(22.0%) cases were managed by suprapubic transvesical prostatectomy and 2(4.0%) cases were managed by Milling's procedure. Impacted urethral stone was found in 13 cases of which 4(8.0%) cases were managed by urethro-lithotomy followed by repair of urethra and indwelling catheter and 7(14.0%) cases were managed by suprapubic cysto-lithotomy after pushback of the stone to the bladder. Stricture urethra was found in 11 cases and all cases (100.0%) cases were managed by intermittent dilatation under general anesthesia. In 7 cases of rupture urethra, initially all patients were managed by suprapubic cystostomy which was 7(14.0%) cases in number; some of the patients were managed by urethral dilatation and some were referred to urology department which were 3(6.0%) cases and 2(4.0%) cases respectively. All the 3

cases of carcinoma prostate were managed by prostatectomy and radiotherapy plus hormone therapy. Neurogenic bladder due to spinal injury 2(4.0%) cases were managed by catheterization and postural change and then was referred to neurosurgery unit for further management. Bladder neoplasm (n=2) was managed by excision of mass plus chemotherapy and radiotherapy. Posterior urethral valve (n=1) was initially managed by catheterization and subsequently referred to urology department of specialized hospital (Table 2).

A total number of 16 patients were managed by prostatectomy of which 1(2.0%) case was developed immediate postoperative hemorrhage which was managed by blood transfusion and continuous irrigation with normal saline. One patient developed postoperative clot retention due to blockage of Foley's

catheter which was relieved by syringing and milking of the catheter followed by continuous irrigation two patients developed postoperative incontinence, immediately after removal of the catheter, who were managed by pelvic floor physiotherapy and ant cholinergic drugs. Out of 11 patients of impacted urethral stone, one developed urethral fistula and one developed UTI. The UTI case was managed by antibiotic according to culture and sensitivity test. The urethral fistula was managed conservatively. Recurrent stricture urethra occurred in 3 patients. Out of 11 stricture urethra were referred to urology department of IPGM&R. Seven patients with rupture urethra, 3 developed stricture urethra and were treated by intermittent. 3 developed stricture urethra and were treated by intermittent dilatations (Table 3).

Table 2: Management of Bladder Outflow Obstruction

Disease	Management	Frequency	Percentage
Benign enlargement of prostate (n=13)	Managed by suprapubic transvesical prostatectomy	11	22.0
	Managed by Milling's	2	4.0
Impacted urethral stone (n=13)	Urethrolithotomy followed by repair of urethra and indwelling catheter	4	8.0
	Cystolithotomy (suprapubic) after pushback of the stone to the bladder	7	14.0
Stricture urethra (n=11)	Intermittent dilatation under G/A	11	22.0
Rupture urethra (n=7)	Initially all patients were managed by suprapubic cystostomy	7	14.0
	Urethral dilatation	3	6.0
	Referred to urology department	2	4.0
Carcinoma prostate (n=3)	Prostatectomy and radiotherapy plus hormone therapy	3	6.0
Neurogenic bladder (spinal injury) (n=2)	Catheterization and postural change, referred to neurosurgery unit for further management	2	4.0
Bladder neoplasm (n=2)	Excision of mass plus chemotherapy and radiotherapy	1	2.0
Posterior urethral valve (n=1)	Initially managed by catheterization and subsequently referred to urology department of IPGM&R	1	2.0
Total		50	100.0

Table 3: Postoperative Complication of Different Patients (n=50)

Disease	Management	Frequency	Percentage
Benign enlargement of prostate with carcinoma prostate (n=16)	Haemorrhage	1	2.0
	Incontinence	2	4.0
	Clot retention	1	2.0
Impacted urethral stone (n=11)	Urethral fistula	1	2.0
	UTI	1	2.0
Stricture urethra (n=11)	Recurrence of stricture	3	6.0
Rupture urethra (n=7)	Stricture urethra	3	6.0

For endoscopic resection of posterior urethral valve 1(2.0%) case, for optical urethrotomy in rupture urethra 2(4.0%) cases and for neurological management of neurogenic bladder 2(4.0%) cases were referred to specialized hospital (Table 4).

Table 4: Patients Referred to Specialized Center

Disease	Frequency	Percentage	Cause of Referral
Posterior urethral valve	1	2.0	Endoscopic resection
Rupture urethra	2	4.0	Optical urethrotomy
Neurogenic bladder	2	4.0	Neurological management

Discussion

Management and presentation of bladder outlet obstruction has undergone marked changes in the last 50 years⁴. More experience, new techniques of surgery, understanding of urinary bladder pathology and pathophysiology, modern scientific instrument have greatly improved the overall management⁶. However, still bladder outflow obstruction surgical problem.

The present study was done in Rajshahi Medical College Hospital, Rajshahi, Bangladesh, over a period of September 1994 to December 1995. This is one of the divisional medical college hospitals in this country and in that period urology patients are managed in general surgical unit. Rajshahi Medical College Hospital, Rajshahi is the biggest hospital in the northern corner of this country. Therefore, the present study reflects pattern of urological problems in this zone. Fifty cases studied in this series which included bladder outlet obstruction admitted in general surgical unit.

The principle of management of bladder outlet obstruction is to relief of the obstruction. In this present study the causes of bladder outflow obstruction was different and management of bladder outflow obstruction was varied from patient to patient.

In this study, 11 patients presented with impacted stone in the urethra. These patients with urethral stone suffered from penile, perineal and rectal pain with great discomfort caused by urinary retention. Therefore, prompt attention to dislodge the stone and relieve the urinary retention was mandatory. In this series, all patients were relieved of urinary retention by suprapubic needle aspiration to allow time for well-planned investigation and definitive treatment of urethral stone under general anesthesia as suggested by

Katakwar et al⁷. Seven patients in this series presented with stone impacted in the posterior urethra and treated by retrograde manipulation of the stone into the bladder followed by open cystolithotomy as suggested by Nagarathnam and Latheef⁸. Four patients in this series presented with impacted stone in the anterior urethra and managed by urothrolithotomy followed by repair and indwelling catheter. Abrams et al⁹ and Schoenthaler et al¹⁰ warned against retrograde manipulation of urethral stones and recommended that manipulation be performed endoscopically under direct vision.

The principles of management of posterior urethral injuries have been to re-establish. For continuity of the urethra to drain, all stone were radio opaque and the genital area was embedded in the initial radio opaque. Five patients showed radio opaque shadow in the bladder. IVU was done. USG has been revealed irregular filling defect in bladder. Urethrogram was done in 12 cases of whom 11 cases prevented with narrowing in the urethra with proximal dilatation and demonstration of posterior urethral valve in one patient. Some strictures were identified initially on voiding films obtained as a part of an IVU and all were confirmed by more definitive mean in Blaiwas et al¹¹ series. In this study, USG was done in patients of which 3 patients showed nephrotic kidney with hydroureter. Ten patients were enlargement of prostate, 7 patients soft tissue mass in the bladder and 5 patients' showed aquatic shadow in the bladder neck region.

The ideal method of treatment of stricture should prove efficacious in a high percentage of cases with a single therapeutic intervention unfortunately, that single ideal method has not yet been developed. So far the treatment of urethral stricture is concerned in Bangladesh; it has been managed mainly by dilatation and in one or two centres by optical external urethrotomy. Urethral dilatation still has a place in elderly persons who have a short stricture which occurs at frequent intervals⁷. In this series of 50 cases, 11 patients with stricture urethra were treated by intermittent dilatation under general anesthesia. According to Gould et al¹² the management of bladder outlet obstruction due to benign enlarged prostate are watchful waiting, surgery, drugs, microwave, balloon dilatation and stent.

In this series, 13 patients of BPH presented with acute retention of urine which were indication for surgery. Acute retention was managed by catheterization of 10 patients and 3 patients managed ty suprapubic cystostomy. In this study centre, facilities of

microwave, balloon dilatation and intra-urethral stenting were not available, so all the patients were managed by open prostatectomy. Out of 15 patients 11 patients were managed by suprapubic transvesical and 2 patients were managed by Millin's prostatectomy. After prostatectomy, all specimen of prostate were sent for histopathology. Twelve specimens were proved histologically benign hyperplasia prostate and one specimen was found carcinoma prostate which was managed by hormone and radiotherapy.

In this series of 50 cases, 3 patients were found carcinoma prostate, of which one patient was diagnosed incidentally and 2 cases of clinically suspected carcinoma prostate, subsequently confirmed by histopathology. They were managed by transvesical prostatectomy followed by hormone and radiotherapy. Vesical outlet obstruction occurs in approximately 30.0% of all spinal injury patients. The exact nature of vesical outlet obstruction is not understood completely but most clinician agreed that the sites of obstruction are located at the bladder neck and at the level of external sphincter.

Groutz et al¹³ found that one patient developed UTI in their following treatment, 38 patients recovered without any complication; however, 12 patients developed complications like incontinence, hemorrhage, UTI, recurrent stricture. It is known that continence following prostatectomy is based on a balance between the distal sphincter mechanism and the pressures achieved in the bladder during filling. If the end filling pressure is high and the sphincter has been even slightly managed, the patient may complain of pain⁹. In this study, 2 patients developed postoperative incontinence immediately after removal of the catheter which was managed by pelvic floor physiotherapy and anti-cholinergic drugs. After prostatectomy, one patient developed clot retention and one patient developed postoperative hemorrhage which was managed by blood transfusion and continuous irrigation with normal saline. Out of 11 patients of impacted urethral stone, one has developed urethral fistula and one patient developed UTI post operatively. UTI was managed by antibiotic according to culture and sensitivity test and urethral fistula was managed conservatively.

Conclusion

In conclusion different surgical procedure are employed during the management of urinary outflow obstruction and immediate postoperative hemorrhage, postoperative clot retention, postoperative

incontinence, urethral fistula, UTI and recurrent stricture urethra are the most common complication after surgical management of urinary outflow obstruction patients. Benign enlargement of prostate is the most frequent cause of bladder outflow obstruction followed by impacted urethra stone and stricture urethra. Further large scale study should be conducted as multicentre basis so that the result will represent the whole country scenario.

References

1. Tan AH, Gilling PJ, Kennett KM, Frampton C, Westenberg AM, Fraundorfer MR. A randomized trial comparing holmium laser enucleation of the prostate with transurethral resection of the prostate for the treatment of bladder outlet obstruction secondary to benign prostatic hyperplasia in large glands (40 to 200 grams). *The Journal of urology*. 2003;170(4):1270-4
2. Athanasopoulos A, Gyftopoulos K, Giannitsas K, Fisfis J, Perimenis P, Barbalias G. Combination treatment with an α -blocker plus an anticholinergic for bladder outlet obstruction: a prospective, randomized, controlled study. *The Journal of urology*. 2003;169(6):2253-6.
3. Blaivas JG, Groutz A. Bladder outlet obstruction nomogram for women with lower urinary tract symptomatology. *Neurourology and Urodynamics*. 2000;19(5):553-64.
4. Nitti VW, Le Mai T, Gitlin J. Diagnosing bladder outlet obstruction in women. *The Journal of urology*. 1999;161(5):1535-40.
5. Groutz A, Blaivas JG, Chaikin DC. Bladder outlet obstruction in women: definition and characteristics. *Neurourology and urodynamics*. 2000;19(3):213-20.
6. Manieri C, Carter SS, Romano G, Trucchi A, Valenti M, Tubaro A. The diagnosis of bladder outlet obstruction in men by ultrasound measurement of bladder wall thickness. *The Journal of urology*. 1998;159(3):761-5.
7. Katakwar P, Thakur R. Clinical study and management of bladder outlet obstruction. *International Surgery Journal*. 2017;4(4):1272-5.
8. Nagarathnam M, Latheef SA. Prevalence of lower urinary tract symptoms in patients of benign prostatic hyperplasia attending Tertiary Care Hospital in the State of Andhra Pradesh. *Journal of Dr. NTR University of Health Sciences*. 2017;6(3):154
9. Abrams P, Kaplan S, Gans HJ, Millard R. Safety and tolerability of tolterodine for the treatment of overactive bladder in men with bladder outlet obstruction. *The Journal of Urology* 2006;175(3):999-1004
10. Schoenthaler M, Sievert KD, Schoeb DS, Miernik A, Kunit T, Hein S, Herrmann TR, Wilhelm K. Combined prostatic urethral lift and remodeling of the prostate and bladder neck: a modified transurethral approach in the treatment of symptomatic lower urinary tract obstruction. *World journal of urology*. 2018:1-6
11. Blaivas JG, Groutz A. Bladder outlet obstruction nomogram for women with lower urinary tract symptomatology. *Neurourology and Urodynamics* 2000;19(5):553-64
12. Gould CV, Umscheid CA, Agarwal RK, Kuntz G, Pegues DA, Healthcare Infection Control Practices Advisory Committee. Guideline for prevention of catheter-associated urinary tract infections 2009. *Infection Control & Hospital Epidemiology*. 2010;31(4):319-26
13. Groutz A, Blaivas JG, Chaikin DC. Bladder outlet obstruction in women: definition and characteristics. *Neurourology and Urodynamics*. 2000;19(3):213-20