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Clinical Study and Management of Bladder Outlet Obstruction in Adult Men

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Abstract

Introduction: Bladder outlet obstruction is one of the commonest causes of LUTS. Most common cause of BOO in men is BPH. Other common causes are bladder stones and bladder cancer. There is also increased incidence of BOO in younger age group too. In younger age group urethral stricture is commonly seen. *Aims and objectives:* To study various etiology and clinical presentations and management of bladder outlet obstruction according to standard surgical guidelines using either minimally invasive or conventional means. *Materials and Methods:* A total of 100 cases were admitted in Deccan College of Medical Sciences and Owaisi Hospital and Research Centre, Hyderabad, India from 1st September 2011 to 31th August 2013 with objective evidence of bladder outlet obstruction and study was conducted accordingly. *Discussion:* This study is a prospective observational study. The most common cause of BOO was evaluated and was treated according to standard line of treatment and follow up done accordingly. *Conclusion:* Bladder outlet obstruction is a clinical entity of diverse etiology and is a potentially curable illness if diagnosis is made early and treated according to the standard guideline of management. In patients not fit for surgery obstruction can be relieved by catheterization and treatment can be planned once patient is fit for definitive procedure. A further population based study is needed to identify the exact prevalence of BOO in different age groups and effectiveness of available modality and long term complications.

Keywords: Bladder outlet Obstruction; LUTS; BPH; Urethral Stricture.

Introduction

BOO is a common cause of LUTS in men. Most common cause of BOO in men is BPH. Other common causes are bladder stones and bladder cancer. Due to increased life expectancy there is an increased incidence of bladder outlet obstruction. For example, BPH is the most common cause of BOO In men above 70 years. There is also increased incidence of BOO in younger age group too. In younger age group urethral stricture is commonly seen.

Complications of BOO can be devastating. Long term or high grade BOO can permanently damage all parts of the urinary system. Complications include: bladder and kidney stones, kidney failure, recurrent UTI, urinary retention, urinary incontinence. Early diagnosis is important and can often lead to a simple and effective cure.

Numerous gender specific etiologies are responsible for BOO. BOO may be induced by specific functional and anatomical causes. The resulting obstruction frequently produces LUTS. Categorizing and understanding these entities is crucial as specific diagnostic modalities may be used to fully delineate the degree of BOO and any secondary

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issues. Although urodynamic evaluation and pressure flow evaluation is the gold standard diagnostic tool, other modalities may also be used including post void residual analysis, urinary flow rate, cystoscopy and selected radiologic ones. Patients self appraisal of symptoms using IPSS is relevant to the initial assessment and subsequent longitudinal follow up.

Aims and Objectives

To study various etiology and clinical presentations and management of bladder outlet obstruction according to standard surgical guidelines using either minimally invasive or conventional means.

Inclusion Criteria

1. Any adult male comes with symptoms suggestive of BOO.
2. Above 18 years age group male patients.
3. Patients visiting first time for the symptoms to our institution.
4. Patient's consent for the thesis.

Exclusion Criteria

1. Patient's refusal for the thesis work.
2. Patients already on treatment for symptoms suggestive of BOO before coming to our institution.
3. Female patients.
4. Male patients below 18 years of age.
5. Patients already taken treatment for BOO in the past.

Materials and Methods

A total of 100 cases were admitted in Deccan College of Medical Sciences and Owaisi Hospital and Research Centre, Hyderabad, India from 1st September 2011 to 31th August 2013 with objective evidence of bladder outlet obstruction. The causes of obstruction as follow BPE (55%), carcinoma of prostate (9%), urethral stricture (15%) (Fig: 1), bladder cancer (8%) (Figure 3) and vesical calculus (13%) (Figure 2).

Ultrasound was the initial modality to diagnose BOO. X-ray KUB, I.V.P. series and CT [1-4] abdomen and pelvis were carried out were ever it was necessary, apart from the routine investigations. Serum PSA and prostatic biopsy was done in cases of suspected carcinoma prostate. Cystoscopy was performed in suspected cases of bladder cancer and biopsy was taken.

In cases of BPH, prostatic size more than 100cc was treated by open prostatectomy [5,6] and less than 100cc either medical management [7] (alpha blockers) or TURP [8], patients with less than 100g prostate, who were unfit for surgery and not willing for surgery, alpha blockers were given. For open prostatectomy [9,10], freyer's procedure was done as described in literature. After 14days suprapubic catheter was clamped and 3 way urethral catheter was removed. If patient had no voiding difficulties, suprapubic catheter was removed after 1day. Most of the patients had no major post operative complications.

Medical management using alpha blockers like tamsulosin 0.4mg HS and combination therapy given to patients. TURP [11] was done using STORZ IGLESIAS resectoscope with 30 degree telescope. 3 way urethral catheters removed after 5days. 5 patients out of 45 complained of poor urinary stream, which gradually improved within 1week and had no surgical intervention. Rest had no complications and followed up regularly.

Early stages of carcinoma prostate were treated with radical prostatectomy. All cases of carcinoma prostate were late stage. In cases of late stage carcinoma prostate (stage III & IV), maximum androgen blockade by orchidectomy using scrotal incision and postoperative anti androgen was given. Those prostate refractory to antiandrogen, chemoradiation [12] was advised. 8 patients responded well to B/L orchidectomy and anti androgen therapy. Only 1 patient had progressive elevation of serum PSA at 3months of follow up following maximum androgen blockade. He was advised chemoradiation.

For cases of bladder cancer with obstruction, radical cystectomy with ileal conduit was done. All 8 cases had uneventful post op.

Cases of bladder stone with size more than 3cms were treated by cystolithotomy and size less than 3cms were removed by cystolithotripsy. Cystolithotomy done using vertical midline incision, bladder closed in two layers using catgut 1-0 and 2-0. Suprapubic catheter removed after one week and urethral catheter two days after suprapubic catheter. In cystolithotripsy cystoscope is used to visualised

stone. Fragmented using lithotripter and removed. Urethral catheter is removed after 2 days.

Cases of stricture urethra managed with VIU. In cases of stricture following urethral rupture, immediate trocar suprapubic catheterization was done to relieve bladder outlet obstruction followed by radiological evaluation and managed by VIU. All cases of stricture were less than 3cms managed by VIU.

Subsequent to the definitive procedure patients were followed up for a periods ranging from 3 to 6 months followed by every yearly. Symptom improvement, physical examination and ultrasound were the main diagnostic tool for follow up. Serum PSA was done every 3months for follow up cases of carcinoma prostate, in addition to ultrasound. In rest of the cases of bladder outlet obstruction follow up done as described above.

Analysis and Results

During this study a total of 100 cases with objective evidence of bladder outlet obstruction were studied and the age distribution is as shown in diagram. The mean age is 57 years with range from 18 years to 90 years. The peak incidence is seen in 7th decade, followed by 8th and 5th decade. Least incidence was seen in 2nd decade (Table 1). The most common cause was BPH followed by stricture urethra, vesical calculus, carcinoma prostate and bladder carcinoma (Table 2). Out of 100 cases of BOO, 45 underwent TURP, 08 cases were treated with medical therapy, 2 cases underwent

Table 1: Age distribution

Age in years	No. of patients
Less than 20	01
20-29	03
30-39	03
40-49	16
50-59	09
60-69	42
70-79	19
80 and above	07

Table 2: Etiology

Etiology	No. of Patients
BPH	55
Carcinoma prostate	09
Bladder carcinoma	08
Bladder stones	13
Urethral stricture	15

Table 3: Management

Management	No. of patients
TURP	45
Medical management of BPH	08
Open prostatectomy	02
B/L Orchidectomy	09
VIU	15
Radical cystectomy and ileal conduit	08
Cystolithotomy	04
cystolithotripsy	9

Fig. 1: RGU showing stricture urethra

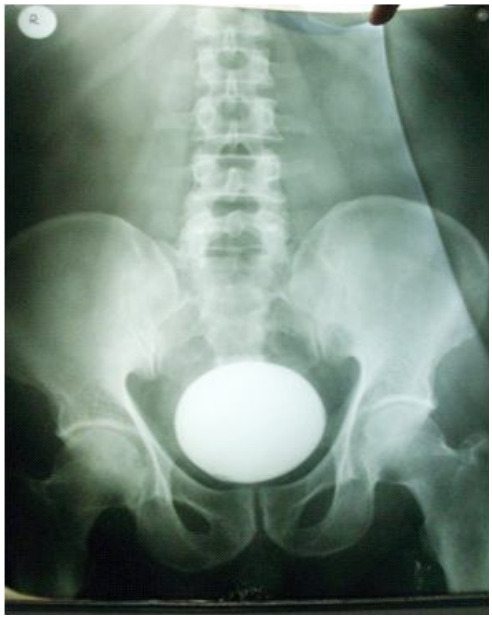

Fig. 2: Vesical calculus

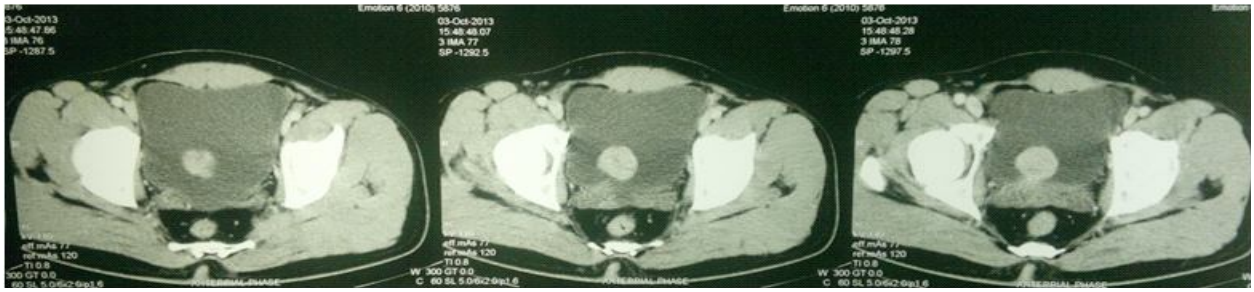

Fig. 3: CECT Abdomen & pelvis showing bladder tumor

open prostatectomy, 9 underwent cystolithotripsy, 9 underwent B / L orchidectomy, 8 underwent radical cystectomy with ileal conduit, 15 underwent VIU, 4 underwent cystolithotomy (Table 3).

Discussion

This study is a prospective observational study in which a total number of 100 cases of BOO were studied. The most common cause of BOO was BPH accounting for more than half the number of cases. Patient who underwent TURP had less morbidity, less complications and short duration of stay compared to open prostatectomy. Patients who were on medical treatment (unfit for surgery and those not willing for surgery) had less symptomatic improvement compared to TURP. Those who opted for surgery had better symptomatic improvement. Of the procedure mentioned above TURP seems to be better accepted by patients of BPH. In this study all cases of carcinoma prostate presented late underwent maximum androgen blockade. This implies significance of screening for early detection of carcinoma prostate. Cases of vesical calculus, those underwent cystolithotripsy had less morbidity and shorter hospital stays compared to those who underwent suprapubic cystolithotomy. Cystolithotripsy considered being better approach than cystolithotomy in treating vasical calculus. Cases of urethral stricture underwent VIU as had short segment of stricture and had good symptomatic improvement. Those who underwent radical cystectomy and ileal conduit for carcinoma bladder had advanced staging of disease but had better disease progression free survival. Few cases of primary bladder hypertrophy and bladder neck stenosis came to our institution for treatment but those were either had taken treatment some were else or they were already on treatment before coming to our institution hence not included in this study.

Conclusion

Bladder outlet obstruction is a clinical entity of

diverse etiology and is a potentially curable illness if diagnosis is made early and treated according to the standard guideline of management. The immediate obstruction can be relieved by catheterization either urethral or suprapubic. In patients not fit for surgery obstruction can be relieved by catheterization and treatment can be planned once patient is fit for definitive procedure. A further population based study is needed to identify the exact prevalence of BOO in different age groups and effectiveness of available modality and long term complications.

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