www.jmscr.igmpublication.org
Impact Factor 5.244
Index Copernicus Value: 83.27
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v4i10.40

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Combined TURP with Bladder Stones Removal: In Management of Infravesical Obstruction and Large, Multiple Bladder Stones

Authors
Madhu SN[1], Sreeramulu PN[1], Girish H[2], Ratkal CS[3]
[1]Dept. of General Surgery
[2]Dept of Urology

Abstract
Bladder stones are the most common manifestation of lower urinary tract, currently accounting for 5% of all urinary stone disease. Treatment of infravesical obstruction and large, multiple bladder stones through transurethral lithotripsy(TULT) and resection of the prostate has been reported to be difficult and to bear a high incidence of morbidity in the presence of large, hard, or multiple stones.
Here we present a retrospective analysis of the patients requiring surgical management for prostatic hyperplasia, transurethral resection of the prostate (TURP) can be safely performed after percutaneous cystolitholapaxy or cystolithotripsy or cystolithotomy and is highly successful in clearing bladder stones and less traumatic than transurethral approaches at the same setting with less morbidity and less cost to the patient.

Objectives

- To assess the feasibility of different procedures in treatment of bladder calculus with outlet obstruction.
- To assess the outcome of these treatment modalities.

Materials and Methods

A retrospective analysis of patient data compiled by assessment of operative findings of patients undergoing TURP along with bladder stone removal employing different procedure at the same setting. Findings were documented and patients follow up recorded over the period encompassing from January 2010 - December 2015 at RL Jalappa hospital and research centre, in department of urology Tamaka, Kolar.

Out patients were investigated with routine investigations, ultrasound abdomen and pelvis, uroflowmetry, x-ray KUB. Patients requiring combined procedures were taken into study. Cystoscopy was done to assess size of prostate and bladder stone.

Suitable bladder stone surgery was done first, TURP was done after endoscopic stone clearance. In case of patients with larger stones, TURP was done followed by open cystolithotomy. TURP was done with conventional monopolar or bipolar cautery depending on the size of the gland and duration of surgery. After procedure 3-way Foleys catheter was placed.

Fig 01 Intraoperative images of vesical calculi

Fig: 02 Intraoperative images of Enlarged prostate

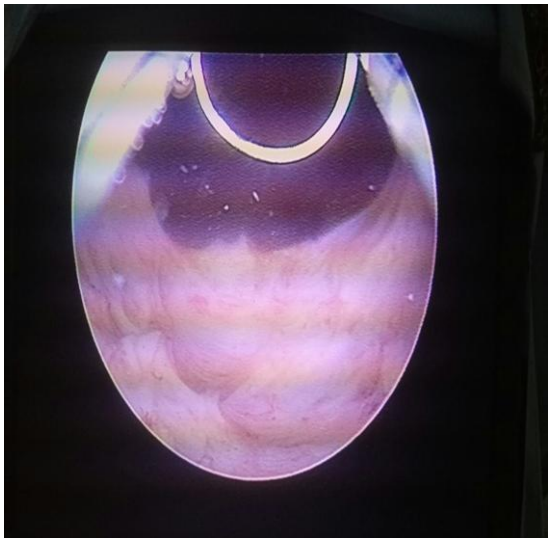


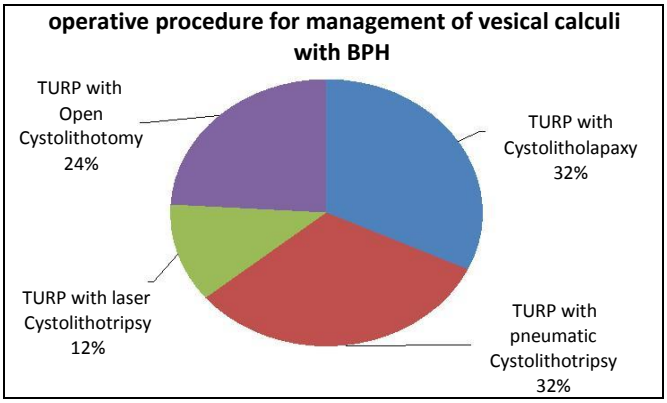
Fig 03 Resected prostate using bipolar cautery

Fig 04 TURP chips

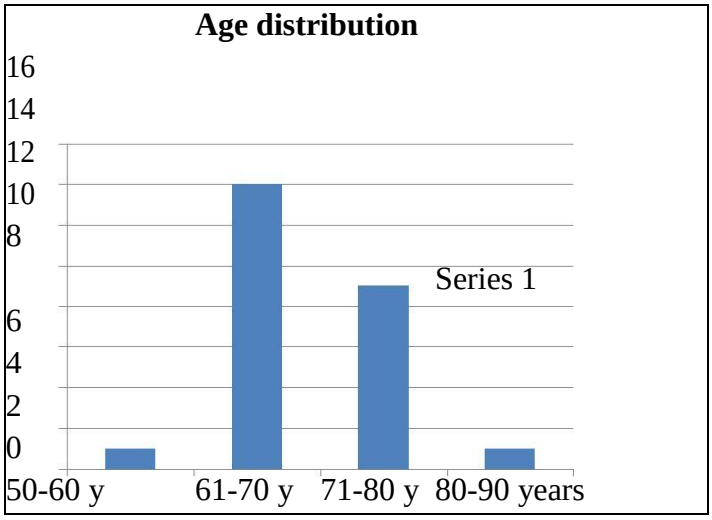
Results

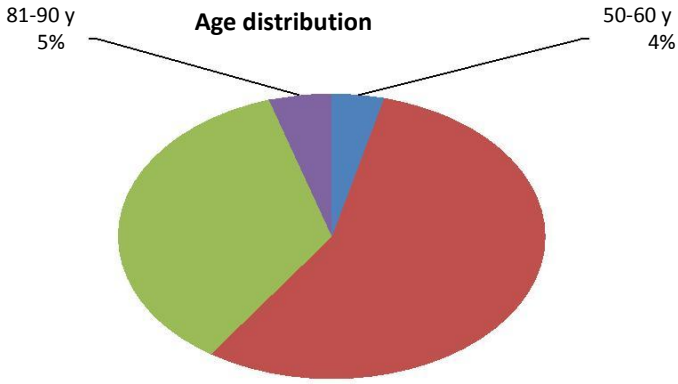
Turp With Cystolitholapaxy Or Cystolithotripsy Or Cystolithotomy are the procedures employed for management of infravesical obstruction with large, multiple bladder stones. Patients who have undergone the above said procedures in the period comprising January 2010 to December 2015 years were assesed through the methods stated and the accumulated data tabulated.

A total of 25 patients were included in the study in which 8 (32%) patients were subjected to Turp With Cystolitholapaxy, 8 (32%) patients underwent TURP with pneumatic Cystolithotripsy, 3 (12%) patients underwent TURP with laser Cystolithotripsy and 6(24%) patients underwent TURP with open cystolithotomy.

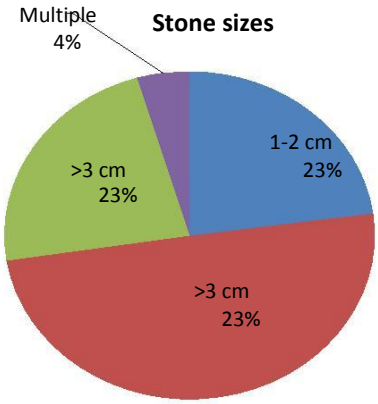


Age distribution: 14 (55%) patients were in age group between 61-70 years, 9 (32%) were between 71-80 years, and 1 patient each in 50-60 and 81-90 years.

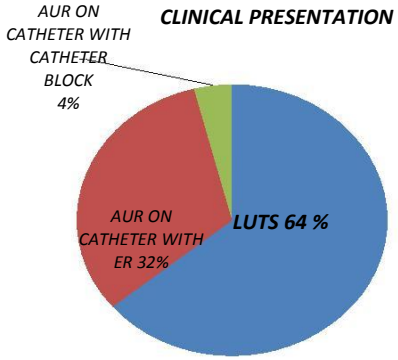




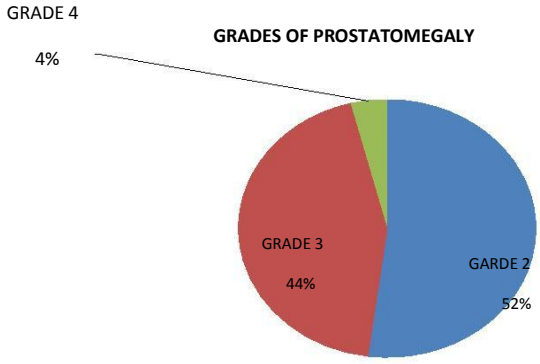
Depending on intra–operative finding of **size of bladder calculi**: 6(23%) patients had bladder calculi between1-2cm, 13(50%) patients had bladder calculi between 2-3cm, > 3cm seen in 6 (23%) patients, multiple calculi of 0.5 cm seen in remaining 2(4%) patients.



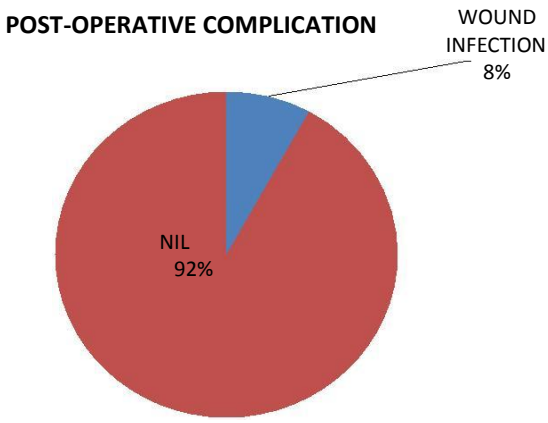
Depending on clinical presentation:16 (64%) patients presented with lower urinary tract symptoms (hesitancy, poor flow, intermittent stream, dribbling, sensation of poor bladder empting, frequency, nocturia, urgency, urge incontinence, nocturnal incontinence), 8 (32%) patients presented with acute urinary retention,1 (4%) patient presented with acute urinary retention with catheter block.



Based on operative finding : 13(52%) patients had Grade II prostatomegaly, 11(42%) patients had Grade III prostatomegaly and 1(4%) patient had Grade IV prostatomegaly.

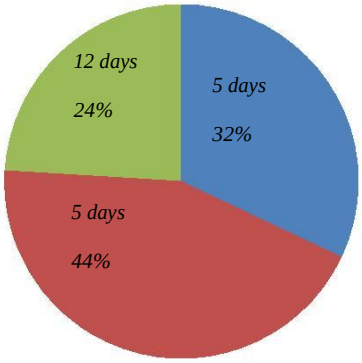


Post-operative complication as wound infection was seen in 2 (8%) patients who underwent TURP with Open cystolithotomy.



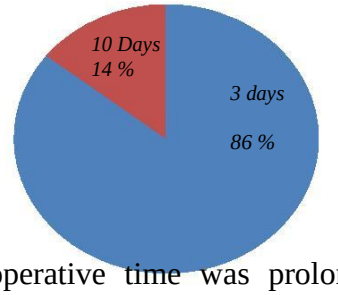
Mean Post-operative stay was 5(32%) days in patients who underwent TURP with cystolitholapaxy, 5 (44%) days in TURP with Pneumatic or laser cystolihotripsy and 12 (24%) days in TURP with open cystolithotomy**.**

Mean post-operative stay



Catheter removal was done on 3rd post-operative day in 19(86%) patients who underwent TURP with Cytolitholapaxy or Cystolitholithotripsy and 10th post-operative day in 6(14%) patients who underwent TURP with open cystolithotomy

CATHETER REMOVAL



Mean operative time was prolonged in patients who underwent TURP with laser lithotripsy ie, 123.3mins, 121.2 mins in TURP with pneumatic lithotripsy, 112.5 mins in TURP with open cystolithotomy and 85 mins in TURP with cystolithlapaxy.

Sl no	TURP with Cystolitho lapaxy	TURP with pneumatic Cystolithotrip sy	TURP with laser Cystolith otripsy	TURP with Open Cystolithoto my
No of patient	8	8	3	6
Mean Age (year)	69.6	71.2	69.3	71.3
Mean Stone size(In cm)	1.5	2.1	3.3	4.3
Operative time mean in min)	85	121.2	123.3	112.5
Postoperative stay (mean in days)	5	5	5	12
Catheter removal (on days)	3	3	3	10
Post-op complication	0	0	0	2

Discussion

Bladder calculi appear to be definitely associated with infravesical obstruction secondary to bladder neck contracture, prostate enlargement, and stricture of the urethra or diverticulum of the bladder. presence of retained urine, multiple stones may be present in 25% to 30% of cases. Stone removal and prostatic or bladder neck resection in one step would appear to be favorable for both surgeon and patient, because of one anesthesia and a shorter hospital stay. Although open surgery may be the best available method for very large stones and for patients with large prostates, it may not be suitable for small or moderately obstructive benign prostatic hyperplasia.

Open surgery and TURP are combined have reported a 3.2% mortality rate among 31 patients undergoing such therapy. In the present study, none of the 25patients died. Bulow and Frohmuller reported a 3.4% complication rate in a group of 304 patients undergoing combined TULT and TURP despite the use of sophisticated techniques of electrohydraulic lithotripsy. [7]

Other studies show Complication rates of 21.1% after combined TURP and cystolitholapaxy and 21% after combined optical mechanical lithotripsy and TURP have been reported. [10]

Age distribution: 14(55%) patients were in age group between 61-70 years, 9(32%) were between 71-80years and 1 patient each in 81-90years & 50-60 years.

Depending on intra–operative finding of size of bladder calculi :6(23%) patients had bladder calculi between1-2cm, 13(50%) patients had bladder calculi between 2-3cm, > 3cm seen in 6 (23%) patients, multiple calculi of 0.5 cm seen in remaining 2(4%) patients.

Depending on clinical presentation: 16 (64%) patients presented with lower urinary tract symptoms (hesitancy, poor flow, intermittent

stream, dribbling, sensation of poor bladder empting, frequency, nocturia, urgency, urge incontinence, nocturnal incontinence), 8 (32%) patients presented with acute urinary retention, 1(4%) patient presented with acute urinary retention with catheter block.

Based on operative finding: 13(52%) patients had Grade II prostatomegaly, 11(42%) patients had Grade III prostatomegaly and 1(4%) patient had Grade IV prostatomegaly.

Post-operative complication as wound infection was seen in 2 (8%) patients who underwent TURP with Open cystolithotomy.

Mean operative time was prolonged in patients who underwent TURP with laser lithotripsy ie,123.3 mins, 121.2 mins in TURP with pneumatic lithotripsy, 112.5 mins in TURP with open cystolithotomy and 85 mins in TURP with cystolithlopaxy.

Catheter removal was done on 3rd post-operative day in 19(86%) patients who underwent TURP with Cytolitholopaxy or Cystolitholithotripsy and 10th post-operative day in 6(14%) patients who underwent TURP with open cystolithotomy.

Mean Post-operative stay was 5(32%) days in patients who underwent TURP with cystolitholopaxy, 5(44%) days in TURP with Pneumatic or laser cystolithotripsy and 12 (24%) days in TURP with open cystolithotomy.

Post-operative complication as wound infection was seen in 2 (8%) patients who underwent TURP with Open cystolithotomy

Conclusion

Bladder calculus disease may be associated with infravesical obstruction in 25% to 30% of patients. Combined TURP with cystolitholopaxy or cystolithotripsy or cystolithotomy can be safely done in same setting without additional morbidity with overall good outcome and with shorter hospital stay and minimal complications and minimising cost.

References

1. Drach GW: Urinary lithiasis: etiology, diagnosis and medical management, in Walsh PC, Retik AB, Stamey TA, *et al* (Eds): *Campbell's Urology.* Philadelphia, WB Saunders, 1992, vol 3, pp 2085–2156.
2. Freiha FS: Open bladder surgery, in Walsh PC, Retik AB, Stamey TA, *et al* (Eds): *Campbell's Urology.* Philadelphia, WB Saunders, 1992, vol 3, pp 2750–2774.
3. Asci R, Aybex Z, Sarikaya S, *et al:* The management of vesical calculi with combined optical mechanical cystolithotripsy and transurethral prostatectomy: is it safe and effective? BJU Int 36: 32–36, 1999.
4. Barnes RW, Bergman RT, and Worton E: Litholapaxy vs. cystolithotomy. J Urol 89: 680– 681, 1963
5. Mebust W, Holtgrewe L, Cockett A, *et al:* Transurethral prostatectomy: evaluating 3885 patients. J Urol 141: 243–246,1989.
6. Nseyo UO, Rivard DJ, Garlick WB, *et al:* Management of bladder stones: should transurethral prostatic resection be perfo-rmed in combination with cystolitholapaxy? Urology 29: 265–267, 1987.
7. Bulow H, and Frohmuller HGW: Electrohydraulic lithotripsy with aspiration of fragments under vision—304 consecutive cases. J Urol 126: 454–456, 1981.
8. Teichman JMH, Rogeres VJ, McIver BJ, *et al:* Holmium: yttrium-aluminium-garnet laser cystolithotripsy of large bladderc-alculi. Urology **50:** 44–45, 1997.
9. Schwartz BF, Stoller ML. The Vesical calculus. Urol Clin North Am 2000;27:333-46
10. Asci R, Aybek Z, Sarikaya S, Buyukalpelli, Yilmaz AF. The management of vesical calculi with optical mechanical cystolithotripsy and transurethral prostatectomy is it safe and effective? BJU Inter 1999;84:33