

“A Comparative Study Between Pharmacotherapeutic And Surgical Management In Not Less Than 100 Consecutive Cases Of Symptomatic Benign Prostatic Hyperplasia In Subharti Medical College”

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Abstract

Aims and Objective: Efficacy and effectiveness of currently available medical and surgical treatments for BPH with effects/complications and selecting appropriate mode of treatment to establish standard criteria in patient of BPH.

Material and Methods: The present study was conducted in between September 2015 to July 2017 on 100 consecutive patients of symptomatic BPH disease admitted for management throughout-patient department / Emergency in Subharti medical college in whom 50 patient were managed medically and 50 patient were managed through surgical intervention.

Statistical analysis: Univariate analysis was performed using Chi-Square test to determine the factors that are associated with benign prostate hyperplasia using SPSS software. Next, a correlation matrix was developed to evaluate correlation between individual parameters.

Results: After thoroughly analyzing the outcome of study, we concluded that the patients who were managed surgically have higher level of satisfaction with better quality of life than conservative group in terms of relief of symptoms. Therefore the study favors the surgical management of symptomatic benign prostatic hyperplasia over conservative management

Keywords: benign prostate hyperplasia, turp, prostatomegaly, serum psa

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I. Introduction

Benign prostatic hyperplasia (BPH) is a highly prevalent condition in the adult male with more than 50% of the males over 60 years having histologically proven prostatic hyperplasia and at least half reporting moderate to severe lower urinary tract symptoms (LUTS). In 1170, Surgery by Roger" a book brought out by the Salerno school of Medicine mentioned of fleshy, soft mass obstructing the flow of urine which can be palpated by fingers of right hand in the rectum.⁽²⁹⁾ In 1563 A.D. Nicolas Masson, a Venetian physician gave the first authentic description on prostate enlargement. In 1664 again, Rialambue explained about prostate.⁽³⁰⁾ The first detailed description of the pathology of prostatic enlargement was published by Guthrie in 1834 and John Hunter in 1835. Diseases of prostate are as old as mankind itself. Earliest mention of prostate gland and its effects on urinary passages can be found in ancient Egyptian and Chinese literature. At the beginning of Christian era, Corneus Celsus⁽²⁹⁾ described accurately urinary tract obstruction which occurred in old age and he also advocated the use of catheter for relief of urinary retention. Various significant contributions in the field of prostatic surgery have been listed in Table.1.

Table. 1: Historical aspect of prostatic surgery

Year	Contributor	Contribution
1575	Ambroise Pare	Performed the first transurethral operation to relieve bladder outlet obstruction.
1639	Covillard	First prostatectomy performed by transperineal route. ⁽²⁴⁾
1827	Amussat (France)	First partial prostatectomy via transvesical route. ⁽²⁴⁾
1877	Nitze	Presented the first practical cystoscope. ⁽²⁵⁾

1879	Edison Made	development of incandescent lamp. ⁽²⁵⁾
1885	Von Dittel	First complete transvesical prostatectomy. ^(26,24)
1886	Thomas Walker	Used stitch at 4 and 8 O'clock position of prostatic fossa to achieve haemostasis
1895	Fuller	Published his work on 6 successful surgeries of transvesical prostatectomy. ⁽²⁷⁾
1900	Sir Peter Frayer	Credit for popularizing the transvesical route for prostatectomy.
1909	Hugh Young	Performed punch prostatectomy. ⁽²⁴⁾
1924	Reinhold Wappler, Gorge Wyeth	Developed first practical cutting current.
1926	Stern	Developed the first resectoscope.
1932	McCarthy	Developed his direct vision resectoscope with a Fibreoptic lens and wire loop. ^(27,24)
1932	Wappler	A spark gap generator for coagulation was produced.
1945	Terrence Millin	Popularizing the retropubic prostatectomy ⁽²⁸⁾
1953	H.H.Hopkins	Developed the rod-lens system. ⁽²⁷⁾

The exact etiology is unknown; however, the similarity between BPH and the embryonic morphogenesis of the prostate has led to the hypothesis that BPH may result from a “reawakening” in adulthood of embryonic induction processes. The enlarged gland has been proposed to contribute to the overall lower urinary tract symptoms (LUTS) complex via atleast two routes:

1. Direct bladder outlet obstruction (BOO) from enlarged tissue
2. (Static component).
3. From increased smooth muscle tone and resistance within the enlarged gland
4. (Dynamic component).

Voiding symptoms have often been attributed to the physical presence of BOO. Detrusor muscle overactivity is thought to be a contributor to the storage symptoms seen in LUTS. Although LUTS secondary to BPH (LUTS/BPH) is not often a life-threatening condition, the impact of LUTS/BPH on quality of life (QoL) can be significant and should not be underestimated. BPH continues to be commonest urological entity in old age that has significant morbidity and interfere with the quality of life. Essentially, the disease is age related with significant age-related changes such as; the hormonal profile. It has also estimated that significant amount of lower urinary tract symptoms are due to or not due to static impact of bladder outlet obstruction but also due to dynamic component of smooth muscles. The present research was undertaken and analysed the role of pharmacotherapeutics in BPH in 50 consecutive cases with mild to moderate symptoms with no indication for surgery at the time of their ancient evaluation. The indications for surgery were strictly followed and outcome of watchful waiting and pharmacotherapy during this period were evaluated by clinical improvement documented with uroflowmetry improvement.

These patients which form indication for consideration of surgical intervention i.e.:-

- a. Failure of pharmacotherapy
- b. Prostate more than 200 ml
- c. Serious hematuria
- d. Evidence of chronic renal failure

The evaluation of patients in both the groups were done by standard protocol of clinical history, AUA symptom score, digital rectal examination, abdominal examination of external genitalia supported by laboratory investigations of complete blood count, renal function test, prostate specific antigen supported by urine culture and microscopic study followed by radiological imaging (USG, TRUS etc.) The patients in both the groups were consolidated and compared to assess the role of pharmacotherapy in overall management of mild and moderate symptoms in patients of BPH, the study of morbidity (if any) in the intervention group. The purpose of present study therefore is to compare the pharmacotherapy, their effects in BPH, for that of interventional surgery and to study the outcome in interventional group and to redefine the selective criteria for present evaluation of medicine management in terms of liability of alpha inhibitors, 5 alpha reductase inhibitors. In pharmacotherapy group, all patients the combination of Tamsulosin and alfuzosin in younger (< 50years) were given. The results will be analyzed and compared by entry in the master chart with a follow up of 3 months and whenever indicated, statistical evaluation was done to document outcome of results in scientific manner.

1.1 Aim And Objective: Efficacy and effectiveness of currently available medical and surgical treatments for BPH with effects/complications and selecting appropriate mode of treatment to establish standard criteria in patient of BPH.

1.2 Material and Methods –This prospective study was conducted in Department of General Surgery, Subharti Medical College, Meerut. Patient with Acute (within 72hours operated) & Chronic Cholecystitis with Cholelithiasis underwent laparoscopic cholecystectomy were included (total 200 no. of patient) in the study between September 2015 to July 2017.

Inclusion Criteria –Diagnosed uncomplicated case of BPH

Exclusion Criteria-

1. Case of stricture urethra/meatal stenosis
2. Case of Ca urinary bladder
3. Case of ca prostate.
4. Case of neurological causes of retention of urine. (neurogenic bladder)
5. Case of bladder neck hypertrophy.
6. Recurrent UTI, retention of urine, renal failure, recurrent gross hematuria
7. Associated disorders i.e. Urinary Bladder stone plus diverticulum

Instruments Requirement- Standard set of Laparoscopic Instruments with suture materials, whenever required along with HIV operating kit for operating team in marker positive patients.

Pre-Operative Scanning -The patients were worked up thoroughly and subjected to - detailed history and clinical examination, routine hematological investigation :Hb, PT, APTT, INR, TLC, DLC; Biochemical investigation: RFT, S. Amylase, S. Lipase, RBS; Liver function test: Serum Bilirubin, SGOT, SGPT, Serum Alkaline phosphatase;Viral marker :HCV, HBsAG , HIV; Abdominal Ultrasonography (USG) for GB distention, GB Wall thickness, USG Murphy’s sign, Pericholecystic fluid, CBD status, Stone:single or multiple, Size of largest stone, Impacted stone at Hartmann’s pouch; ECG, Pre-anesthetic check-up.

Pre-Operative Preparation- Cases which underwent laparoscopic cholecystectomy were included in the study. Informed consent was obtained. On pre-operative night tablet alprazolam 0.25mg and bisacodyl (dulcolax) was given. The patients were kept fasting after mid night. On next morning broad spectrum antibiotic i.v.as prophylactic antibiotic measure was given.

II. Operative Procedure

2.1 Open Prostatectomy

The prostate gland undergoes several changes as a man ages. The pea size gland at birth grows only slightly during puberty, and reaches its normal adult shape and size (similar to a walnut) when a male is in his early twenties. The prostate gland remains stable until the mid-forties. At that time—in most men—the number of cells begins to multiply (cell multiplication), and the gland starts to enlarge. The enlargement—called hyperplasia—is due to an increase in the number of cells. Cell proliferation in the prostates of older men can cause symptoms (referred to as lower urinary tract symptoms, LUTS), which often include:

1. straining when urinating
2. hesitation before urine flow starts
3. dribbling at the end of urination or leakage afterward
4. weak or intermittent urinary strain
5. painful urination
- 6.

Other symptoms (called storage symptoms) sometime appear, and may include:

1. urgent need to urinate
2. bladder pain when urinating
3. increased frequency of urination, especially at night
4. bladder irritation during urination

The cause of BPH is not fully understood. Currently, it is thought to be caused by a hormone that the prostate gland synthesizes, called dihydrotestosterone (DHT). This hormone is synthesized from testosterone by a prostatic enzyme called 5-alpha reductase. Surgery is generally indicated for persons with moderate to severe symptoms, particularly if urinary retention is intractable or if the enlarged prostate (BPH) is related to recurrent urinary tract infections, blood in the urine, bladder stones, or kidney problems. Open prostatectomy is the treatment of choice for approximately 2–3% of BPH patients who have a very large prostate, a damaged bladder, or another serious related problem. Open prostatectomy is used when the prostate is so large (2.8–3.5 oz. [80–100 g]) that transurethral resection of the prostate (TURP, a less strenuous surgical procedure to remove a smaller prostate) cannot be performed. Additionally, open prostatectomy is indicated for males with:

1. recurrent or persistent urinary tract infections
2. acute urinary distention
3. bladder outlet obstructions

4. recurrent gross hematuria (blood in urine) of prostate origin
5. pathological changes in the bladder, ureters, or kidneys due to prostate obstruction

Contraindications to open prostatectomy include previous prostatectomy, prostate cancer, a small fibrous prostate gland, and previous pelvic surgery that may obstruct access to the prostate gland.

2.1 Retropubic prostatectomy

The retropubic prostatectomy is accomplished through a direct incision of the anterior (front) prostatic capsule. The overgrowth of glandular cells (hyperplastic prostatic adenoma) is removed. These are the cells forming a mass in the prostate because of their abnormal multiplication. A **cystoscopy** is performed prior to the open prostatectomy. The patient lies on his back on the operating table, and is prepared and draped for this procedure. Following the cystoscopy, the patient is changed to a Trendelenberg (feet higher than head) position. The surgical area is shaved, draped, and prepared. A catheter is placed in the urethra to drain urine. An incision is made from the umbilicus to the pubic area. The abdominal muscle (rectus abdominis) is separated, and a retractor is placed at the incision site to widen the surgical field. Further maneuvering is essential to clearly locate the veins (dorsal vein complex) and the bladder neck. Visualization of the bladder neck exposes the patient's main arterial blood supply to the prostate gland. Once the structures have been identified and the blood supply controlled, an incision is made deep into the level of the tumor. Scissors are used to dissect the prostatic tissue (prostatic capsule) from the underlying tissue of the prostatic tumor. The wound is closed after complete removal of the prostate tumor and hemostasis (stoppage of bleeding) occurs. The advantages of the retropubic prostatectomy include:

1. Direct Visualization Of The Prostatic Tumor.
2. Accurate Incisions In The Urethra, Which Will Minimize The Complication Of Urinary Continence.
3. Excellent Anatomic Exposure And Visualization Of The Prostate.
4. Clear Visualization To Control Bleeding After Tumor Removal.
5. Little Or No Surgical Trauma To The Urinary Bladder.
6. Suprapubic Prostatectomy

Suprapubic prostatectomy (also called transvesical prostatectomy) is a procedure to remove the prostatic overgrowth via a different surgical route. The suprapubic approach utilizes an incision of the lower anterior (front) bladder wall. The primary advantage over the retropubic approach is that the suprapubic route allows for direct visualization of the bladder neck and bladder mucosa. Because of this, the procedure is ideally suited for persons who have bladder complications, as well as obese men. The major disadvantage is that visualization of the top part of the tumor is reduced. Additionally, with the subrapubic approach, hemostasis (stoppage of bleeding during surgery) may be more difficult due to poor visualization after removal of the tumor. Using a scalpel, a lower midline incision is made from the umbilicus to the pubic area. A cystotomy (incision into the bladder) is made, and the bladder inspected. Using electrocautery (a special tool that produces heat at the tip, useful for hemostasis or tissue excision) and scissors, dissection proceeds until the prostatic tumor is identified and removed. After maintaining hemostasis and arterial blood supply to the prostate, the incisions to the bladder and abdominal wall are closed. Pen prostatectomy is a major surgical operation requiring an inpatient hospital stay of four to seven days. Blood transfusions are generally not required due to improvements in surgical technique. Immediately after the operation, the surgeon must closely monitor urinary output and fluid status. On the first day after surgery, most patients are given a clear liquid diet and asked to sit up four times. Morphine sulfate, given via a patient controlled analgesic pump (I/V), is used to control pain. On the second postoperative day, the urethral catheter is removed if the urine does not contain blood. Oral pain medications are begun if the patient can tolerate a regular diet. On the third postoperative day, the pelvic drain is removed if drainage is less than 75ml/24 hour. The patient should gradually increase activity. Follow-up with the surgeon is necessary following **discharge from the hospital**. Full activity is expected to resume within four to six weeks after surgery.

Transurethral resection of prostate. indications for transurethral resection of the prostate (turp)

Benign prostatic hyperplasia with symptoms should be treated with medication, until complications make surgery necessary:

1. Recurrent urinary retention
2. Recurrent urinary tract infection
3. Recurrent hematuria
4. Bladder stones
5. Renal insufficiency due to insufficient bladder emptying
6. Large diverticula of the bladder

The most common indication for TURP is moderate to severe symptoms of prostatic hyperplasia, which cannot be alleviated with medication (see section medical treatment of BPH and Alpha-blockers).

Intra-Operative Analysis:

During the procedure careful note was made of, operative time, operating technique. The intra-operative difficulties and complication were analyzed with points as follows – (1)Difficulty in accessing the peritoneal cavity- Difficulty in lifting abdominal wall, Injury due to veress needle, Trocar related injury;(2) Difficulty during gall bladder dissection- Difficulty in grasping GB,Difficulty in retracting GB,Difficulty due to obliterated anatomy of Calot's triangle,Difficulty due to adhesions,Difficulty due to embedded GB in liver,Difficulty due to anatomical variation,Gall bladder perforation,Spillage of bile,Spillage of stone,Retrieval of stones completely or loss of stones in peritoneal cavity,Injury to CBD/ Duodenum/small intestine/large intestine/omentum/ liver,Bleeding during surgery and site of bleeding; (3)Difficulty in extraction of gall bladder and Extension of incision for extraction of gall bladder; (4)Technical problems or instrument failure; (5)Any conversion to standard open cholecystectomy and its reasons were noted

Post Operative Care

Patient will be kept nil per oral for 24 hours.Continuous irrigation for 12–24 hRemoval of the catheter after 2–3 daysAntibiotic coverage with painkiller and Proton pump inhibitor will be given.Dressing will be routinely checked after 48 hours and changed prior to discharge.

Discharge

The patients were discharged after assessment, if they had adequate pain control, were self-ambulatory,had postoperative voiding of urine and oral intake without vomiting. Patients not meeting the criteria were kept admitted and discharged when found suitable. Still our policy was to keep patients admitted for 2-3 days postoperatively just to prevent any postoperative un-eventuality which could be missed.

III. Statistical Analysis

Univariate analysis was performed using Chi-Square test to determine the factors that are associated with difficult laparoscopic cholecystectomy was calculated using SPSS software. Next, a correlation matrix was developed to evaluate correlation between individual parameters.Conclusion regarding role of various factors in predicting difficult laparoscopic cholecystectomy was drawn.

IV. Discussion

4.1 Age

In present studytotal 100 patients of benign prostate hyperplasia were taken out of which 50 were managed conservatively and 50 patient were managed surgically. In surgical group 22 patient were >65 years of age and 28 patient were <65 year of age, while in conservative group 11 patient were>65 year of age and 39 were <65 year of age.

4.2 Alemu MH (2009)¹⁹ during the study there were 71 patients with symptomatic BPH disease among whom 65 cases underwent TURP in Mekelle hospital. In the latter group, ages ranged from 42-86 years with median age of 70 years (mean 66.8 years).

4.3 Matthew A Collins et al (2016)²³ the average age of patients currently undergoing TURP is approximately 69 years, and the average amount of prostate tissue resected is 22 g. Risk factors associated with increased morbidity include prostate glands larger than 45 g, operative time longer than 90 minutes.

4.2 Symptoms

In the present study patient were assessed under IPSS scoring for their symptoms which includes incomplete emptying, frequency, intermittency, urgency, weak stream, straining, nocturiaIn surgical group (n=50), 44 patients presented with complaint of frequency followed by, 32 patients presented with complaint of intermittency, 30 patients have incomplete emptying and 29 patients presented with nocturia.While patient assessed under conservative management (n=50) had maximum symptoms of intermittency and nocturia bothhad 15 patients, followed by 12 patients presented with frequency.Patients were scored under mild, moderate and severe symptoms according to symptoms score.

Score 7 signifies mildly symptomatic

Score 8-19signifies moderately symptomatic

Score 20-35 signifies severely symptomatic

According to symptoms score in surgical group, 26 patient (n=50) were under severe score followed by 13 patient were under moderate score and 11 patient under mild score.

Among conservative group (n=50) 24 patients were under moderate score, followed by 19 patients under mild score and 7 patients were under severe group.

4.3 PVRU and Uroflowmetry

In our study 32 surgically managed patients got significant PVRU out of 48 (n=100) significant with p value (0.001).

In our study uroflowmetry provide important aspect for patients management (surgically and conservative. (n=100).

1. **Ages 25-35**-The average flow rate for males is 21 mL/sec.
2. **Ages 36-55**-The average flow rate for males is 12 mL/sec.
3. **Ages >56**-The average flow rate for males is 9 mL/sec.

In our study 22 patient had (9-11) ml/sec flow rate among surgical group (n=50), followed by 15 patient had (16-19) ml/sec flow rate and only 3 patient present with (20-23) ml/sec of flow rate.

In conservative group (n=50) 23 patients were among (20-23) ml/sec of flow rate, followed by 11 patient had (9-11) ml/sec flowrate.

4.4 Claus G Roehrborn(2005)¹³

Post void residual urine values differ substantially over time within an individual and between individuals. They have not been shown to be reliable predictors of the natural history of the disease and/or the response to treatment. However, it is widely accepted that rising amounts of residual urine and decreasing voiding efficiency are associated with worsening of the condition and a greater likelihood of acute urinary retention with subsequent need for surgery

4.5 Darius Trumbeckaset al (2011)²¹

There were 91 obstructed and 31 unobstructed/equivocal out of 122 tested patients. Age of patients was not statistically different between the groups (p = 0.088). Qmax in range of 4-15 ml/s was determined in 85.3% of patients. Correlation with residual urine was considerably lower (r = 0.198, p = 0.03). No statistically significant correlation between age of patients and obstruction was observed. Our data also confirm that post-void residual volume is not of paramount importance in terms of obstruction. Though we found statistically significant difference for PVR between the groups, correlation of PVR with obstruction was weak.

4.6 Prostate Size

In our study prostate size was assessed my ultrasonography along with PVRU.

Maximum prostate size among total (n=100) were under 51-60 grams, in surgical group (n=50)16 patient and 17 patient were in conservative group,

Followed by weight >60grams were present in 10 patient from surgical group and 14 from conservative group.

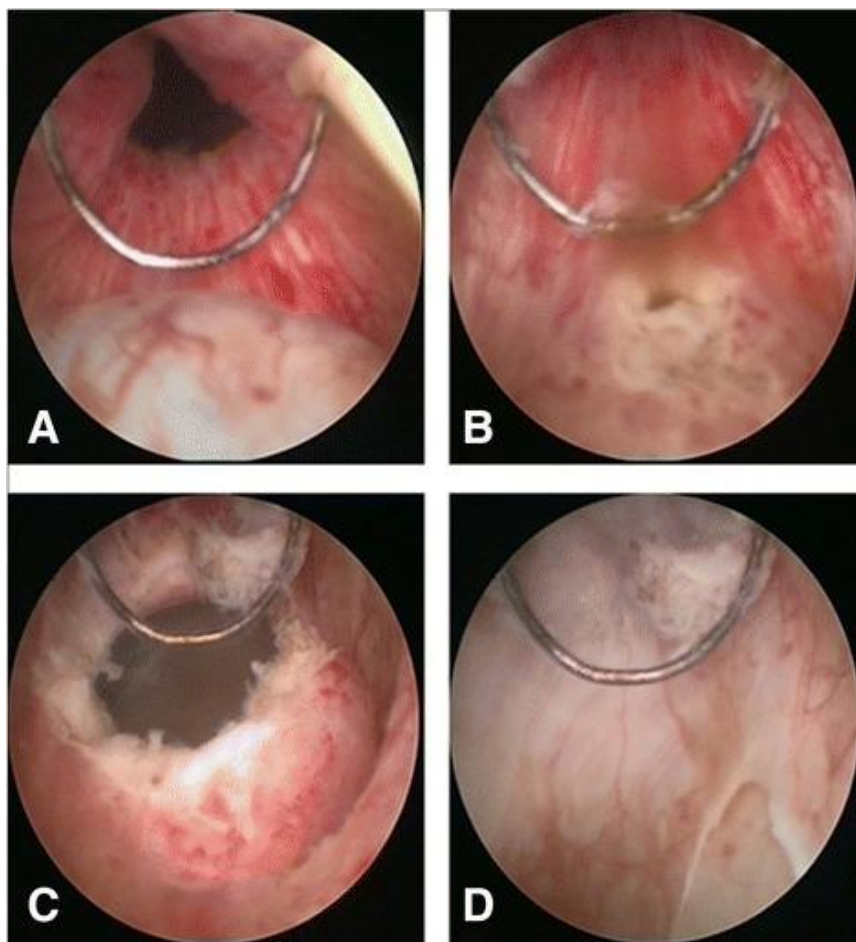
4.7 STEVEN J. JACOBSEN et al (1999)⁸ Enlarged prostate (greater than 30 ml.) or elevated serum prostate specific antigen (1.4 ng. /ml. or greater) had about 4 times the risk of BPH treatment than those who did not. After adjustment for all measures simultaneously an enlarged prostate (hazard ratio 2.3, 95% confidence interval [CI] 1.1, 4.7), depressed peak flow rate (hazard ratio 2.7, 95% CI 1.4, 5.3) and moderate to severe symptoms (hazard ratio 5.3, 95% CI 2.5, 11.1) at baseline each independently predicted subsequent treatment. The data demonstrate that treatment is common in elderly men with nearly 1 in 4 receiving treatment in the eighth decade of life. Furthermore, these data suggest that men with moderate to severe lower urinary tract symptoms, impaired flow rates or enlarged prostates are more likely to undergo treatment, Increased size/weight of prostate effects most of the patient due to its anatomy and location which compresses the urethra and causes incomplete emptying and intermittency.

4.8 Matthew A Collins et al (2016)²³

The average amount of prostate tissue resected is 22 g. Risk factors associated with increased morbidity include prostate glands larger than 45 g, operative time longer than 90 minutes, and acute urinary retention as the presenting symptom. The 5-year risk rate for a reoperation following TURP is approximately 5%.

Alemu MH (2009)¹⁹

During the study there were 71 patients with symptomatic BPH disease among whom 65 cases underwent TURP in Mekelle hospital. In the latter group, ages ranged from 42-86 years with median age of 70 years (mean 66.8 years). Of the total patients seen for BPH disease, six patients had prostate volume greater than 80 cm³ determined by abdominal ultrasonography with DRE who underwent open surgical treatment. Four and two cases had retro pubic and Trans vesical prostatectomies respectively accounting for 8.4%. Longer hospital stay and more resource implications were observed in this group.



A, the Cyst is visualized through the Resectoscope.
B,C,D the posterior wall of the urethra is resected.

Serum Prostate Specific Antigen

In our study (n=100) there is no specific normal or abnormal level of PSA in the blood and mostly considered PSA levels of **4.0 ng/mL** and lower as normal. 61 patient among both the groups have PSA level below 4.0ng/ml. Rest 39 patient had PSA level more than 4.0ng/ml. In surgical group post operatively prostate sample for histopathology was sent in all the patients.

Steven J. Jacobsen Et Al (1999)⁸

Enlarged prostate (greater than 30 ml.) or elevated serum prostate specific antigen (1.4 ng. /ml. or greater) had about 4 times the risk of BPH treatment than those who did not. After adjustment for all measures simultaneously an enlarged prostate (hazard ratio 2.3, 95% confidence interval [CI] 1.1, 4.7), depressed peak flow rate (hazard ratio 2.7, 95% CI 1.4, 5.3) and moderate to severe symptoms (hazard ratio 5.3, 95% CI 2.5, 11.1) at baseline each independently predicted subsequent treatment.

Stephen S Connolly et al (2007)¹⁵

Larger prostates probably do require the addition of a 5- α reductase inhibitor to significantly reduce the risk of urinary retention and BPH-related surgery. The effect of any hormonal manipulation on PSA levels in an era of on-going cancer-screening debate, and the further unclear effect on prostate cancer development both currently hinder the widespread selection of 5- α reductase inhibitor class drugs as the preferred drug of choice in all but those men with large prostate volumes who are most likely to benefit from such treatment.

Hospital Stay

In our study (n=100) two groups surgical (n=50) and conservative (n=50) were assessed for their stay as per management. Surgical group have there mean stay for 4 ± 2 days while conservative patient have mean stay of 6 ± 2 days with on and off complain of symptoms in follow up . 17 conservative patient planned to go for surgical management latter on.

Prodromosg.borboroglu et al (1999)⁹ Average

Hospital stay was 2.4 days, and 1.1 from 1997 through 1998. The rate of late postoperative complication was 8.5% and the average postoperative symptom score was 6.4 with an average follow-up of 42 months (range 6 to 84). Contemporary perioperative and postoperative complications of transurethral prostatectomy are significantly lower than rates in historical series. The average hospital stay and urethral catheter time have steadily decreased during the last 8 years.

Follow Up

All patient (n=100) advised for post management follow up, surgical patient (n=50) were assessed for any post-surgery complication, suture line infection and relevant complains and managed accordingly. Conservative patient (n=33) were assessed for any new or old complain and managed accordingly. Histopathology of every patients were evaluated and those found to have malignancy were excluded from the study.

Yoichiarai et al. (2000)¹⁰ a mild to moderate decrease in erectile function was noted in 26.5%, 18.2%, 18.4% and 20.0% of the transurethral resection, microwave thermotherapy, laser coagulation and needle ablation groups, respectively, but there was no significant difference of mean pre-treatment and post-treatment erectile function or libido scores in any group.

OliverReich(2008)¹⁸The most relevant complications were failure to void (5.8%), surgical revision (5.6%), significant urinary tract infection (3.6%), bleeding requiring transfusions (2.9%) and transurethral resection syndrome (1.4%). The resected tissue averaged 28.4 gm. Incidental carcinoma of the prostate was diagnosed by histological examination in 9.8% of patients.

Alemu MH (2009)¹⁹ in fifty eight (89.2%) of the patients, the outcome after TURP was successful in relieving symptoms. The hospital stay after TURP offers ranged from 2 up to 5 days, the median was 3 days and the mean 2.5 days.

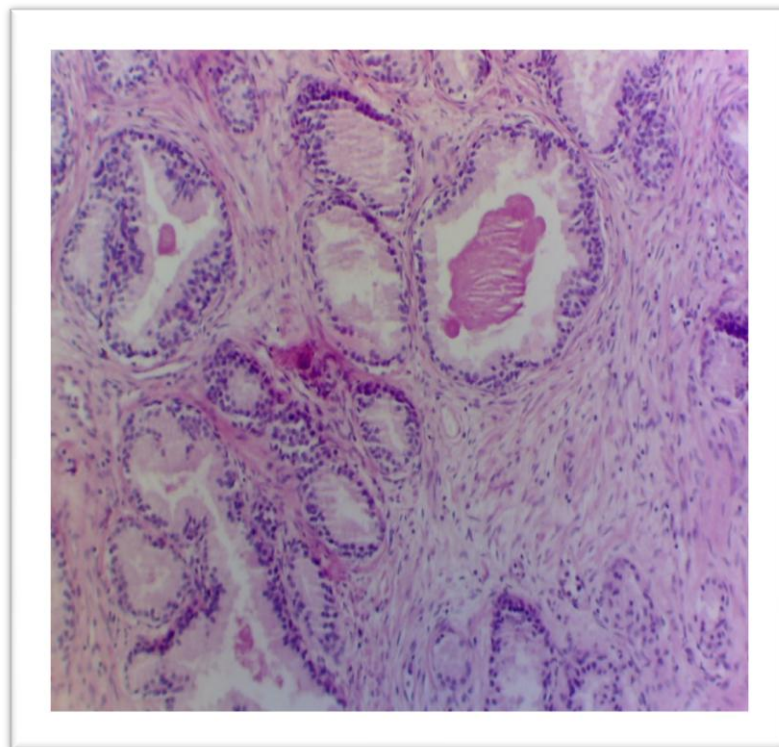


Fig no.1 Section of prostate showing glandular and structural hyperplasia (H&E 100x)

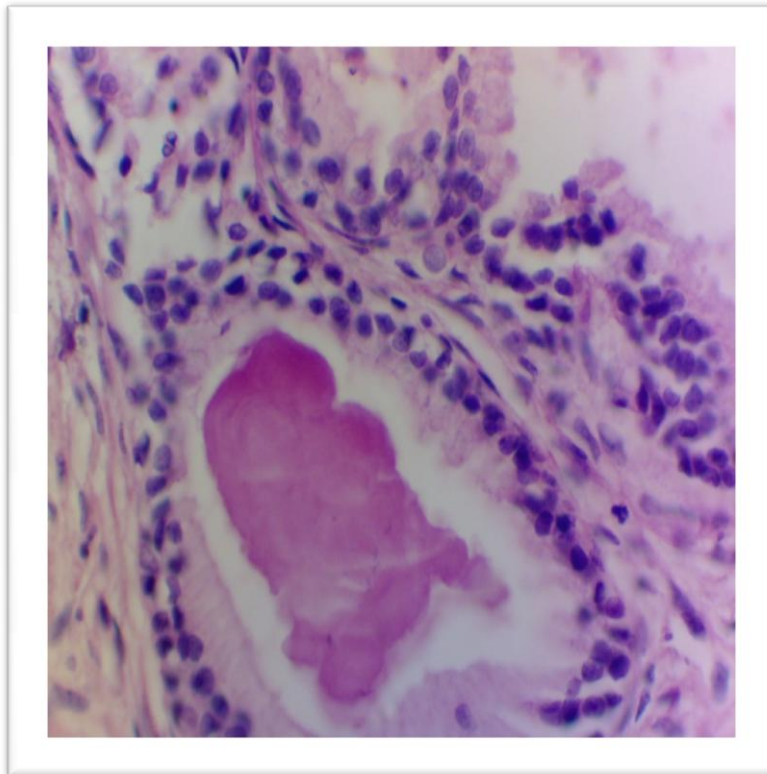


Fig no. High power view of prostatic glands lined by bilayer epithelium (H&E 400x)

V. Conclusion And Summary

This prospective study was conducted in the Department of General Surgery of Subharti Medical College admitted through surgery OPD and emergency or transferred from other departments. The study was done on 100 patients out of which 50 were kept under surgical group and 50 under conservative group out of which 13 patients from the conservative group underwent for surgical intervention later on. Patients who were satisfying the criteria for selection and inclusion underwent surgical management. Among the conservative group, those 50 patients were kept who were not satisfying the criteria for surgical intervention, patients not fit for surgery and patients who refused for surgery. Outcome of surgically managed and conservative patient were then analyzed.

1. In surgical group 44% patients presented with age >65 years, 56% patients presented with <65 years of age.
2. Surgical group (n=50) 88% patient present with frequency, 64% present intermittency, 60% present with incomplete emptying and 58% complaint of nocturia. Total 52% patient fall under severe score, 26% under moderate score and 22% patient under mild score for symptoms according to the international prostate symptom score (IPSS).
3. 64% patients out of 50 had significant post void residual volume in surgical group.
4. In surgical group (n=50), 22 (44%) patients had flow rate of (9-11 ml/sec), 15 (30%) patients had (16-19 ml/sec) and 3 (6%) presented with (20-23 ml/sec) of flow rate.
5. In our study, prostate size under 51-60 grams was present in 16 (32%) patients while 10 (20%) patients presented with >60 grams of prostate in the surgical group of patients.
6. In the present study (n=100) 61% patients had prostate specific antigen value of <4.0 ng/ml while 39% presented with >4.0 ng/ml of prostate specific antigen.
7. Surgical group patients had mean stay of 4±2 days while conservative group patient had a mean stay of 6±2 days with on and off complaints of recurrence of symptoms of benign prostate hyperplasia in the follow up.
8. From the Conservative group (n=50) 17 (34%) patients underwent for surgical intervention during follow up due to inadequate relief from the symptoms.
9. It was concluded from above study that there are several significant factors which shows that surgical management is better than conservative management in terms of –
10. Early relief of symptoms.
11. Less hospital stays with mean stay of 4±2 days in surgical management.

12. In present era, with advancement of surgical options like TURP AND LASER surgery, post-op complications are relatively low with better results in short duration of time
13. Early better Quality of life
14. Less follow up.
15. Cost effective as follow up required repeated radiological and blood investigation.
16. Early diagnosis and management of malignancy(if present) through histopathological examination and thus decreasing the complications
17. Co-morbidities increases in undiagnosed malignancy with compromised liver and lungs in conservative group.
18. Old age patients were more common in our study 22 patients were >65years of age among total surgically managed (n=50).
19. Increased prostate size / weight are more common in old age.
20. Age group of 51-60 years found to have maximum size of prostate.
21. Fewpatients from conservative group planned to go for surgical management in follow up as they were not satisfied with the outcome of conservative management.

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