

Transvesical Prostatectomy In The Western Region of Ghana A 15-Year Experience

Abstract

Background: Enlarged prostate appears to be the leading cause of bladder outlet obstruction in the Western Region of Ghana which has a population of three million people. This disease affects people between the ages of 55 and above 90 years.

Aim: Retrospective assessment of the effectiveness of transvesical prostatectomy

Patients: Four hundred and thirty patients with bladder outlet obstruction secondary to benign prostatic hyperplasia (BPH) and who had failed medical treatment underwent transvesical prostatectomy between 2004 and 2019. Information on the age, clinical presentation, laboratory and histology were extracted from patients' records and analysed. Noted were the results of ultrasound scan and immediate and long-term complications after the surgery.

Results: A total of 430 patients had transversical prostatectomy with 58.8% of them 70-79 years of age. The most common sign on presentation is haematuria (60.0%). Some (35.2%) reported with retention of urine, whilst 60.0% of them had grade 3 enlargement on digital rectal examination (DRE). Ultrasonography revealed enlarged prostate with prominent median lobe in 51.6% of patients. Early complication of clot retention and transient urine incontinence were seen in 6.5% and 2.5% of patients respectively. Mortality was 0.7%.

Conclusion: Transvesical prostatectomy for obstructive benign prostatic enlargement is still relevant in low income developing countries, where patients report late to the urologist and where large volume bleeding prostates with other bladder complications are encountered in urological practise despite the availability of modern minimal invasive techniques.

Keywords: Benign Prostatic Enlargement; Benign Prostatic Hyperplasia; Bleeding prostate; Erectile Dysfunction; Postvoid residual urine volume; Retrograde ejaculation; Transvesical prostatectomy

Introduction

Before the advent of Transurethral resection of the prostate

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Research Article

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(TURP), the gold standard [1], Laser ablation [2] and enucleation of the prostate as well as other newer methods like needle ablation [3], transvesical (open) prostatectomy was the main surgical method of treatment for bladder outlet obstruction due to benign prostatic enlargement. This has remained so in most developing countries. The accessibility of urological services in the developed countries in addition to a highly enlightened society might be the reason for gradual reduction in open prostatectomy. This is however not the case in developing countries where patients report to the urologist after trying herbal and other unorthodox methods of treatment, patients report with very large volume prostates [4], with some weighing much as 400g. This makes TURP difficult. Hence the urologist is more comfortable with open transvesical prostatectomy. The aim of this retrospective study is to assess the effectiveness of transvesical prostatectomy, challenges, outcomes and also the immediate postoperative, and long-term complications on reviewing the 15-year experience with this method of treatment.

Patients and Methods

A review of all patients who had transvesical prostatectomy for obstructive benign prostatic hyperplasia (BPH) in two hospitals in the Western Region of Ghana by the same urologist between 2004 and 2019 was done. Diagnosis was reached after clinical examination which included digital rectal examination of the prostate, laboratory tests and ultrasonographic measurement of prostate size and volume of postvoid residual urine. Where prostate cancer was suspected, a 12 core prostate biopsy under ultrasound guidance was done for histological examination to confirm or otherwise the presence of benign prostatic hyperplasia. Patients who presented with acute retention of urine had silicon two-way Foley's urethral catheter inserted into bladder and connected to a urine bag to ensure continuous bladder drainage. Catheter was left in situ for two

weeks to improve renal function. Prostatic Specific Antigen (PSA) measurement was done after two weeks of relief of obstruction. Within this period of two weeks patients with anemia were treated with haematinics. Before surgery renal function was assessed again and clotting profile done. Suitable patients(after anaesthetic assessment) underwent transvesical prostatectomy. 387(90.0%) were operated under spinal anaesthesia whilst 43(10%) under general anaesthesia. Data both pre-and postoperative were manually collected and analyzed.

Results

Figure 1

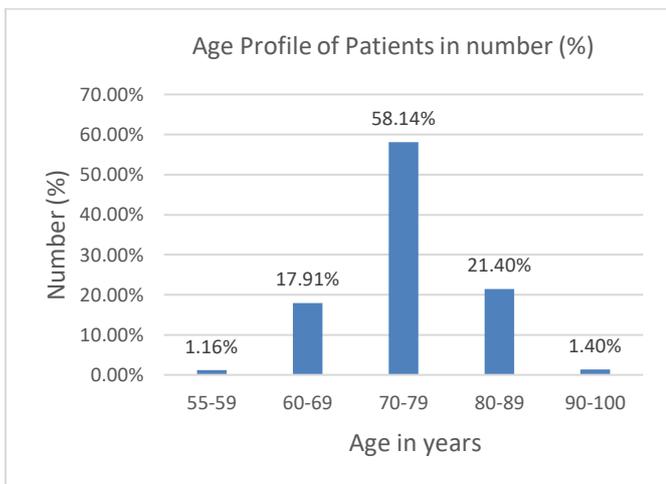


Table 1

Symptoms at presentation in patients with BPH(n=2003 types of presentation)

Symptoms on presentation	Number (%)
Retention of urine	149 (7.44%)
Straining to micturate	382 (19.07%)
Haematuria	256 (12.78%)
Poor urine stream	361 (18.02%)
Feeling of incomplete voiding	85 (4.24%)
Nocturia	170 (8.49%)
Frequency	387 (19.32%)
Urgency	213 (10.63%)

Table 2

Findings on examination: (n=890)

Findings on examination	Number (%)
Distended bladder	260 (29.21%)
Haemorrhoids	21(2.36%)
Hernia	183(20.56%)
Digital Rectal Examination(DRE):	
Grade 1 (prostate occupies 1/3 of rectal lumen)	43 (4.83%)
Grade 2 (prostate occupies half of rectal lumen)	128 (14.39%)
Grade 3 (prostate occupies two thirds of rectal lumen)	255 (28.65%)

Table 3

Findings on ultrasound: (n=708)

Findings on ultrasound	Number (%)
Enlarged prostate with median lobe	219 (30.93%)
Hydronephrosis	43 (6.07%)
Calculi in bladder	21 (2.97%)
Volume of residual urine	
200-300 mls	143 (20.20%)
300-400 mls	170 (24.01%)
>400 mls	112 (15.82%)

Table 4

Adverse laboratory finding (n = 217)

Laboratory Findings	Number (%)
Derailed renal function	64 (29.49%)
Anaemia	45 (20.74%)
Abnormal clotting profile	22 (10.14%)
Positive urine cultures	86 (39.63%)

Figure 2

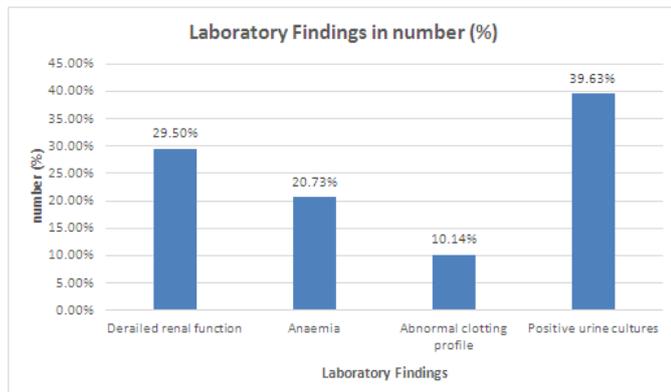


Table 5

Intraoperative findings (n=948)

Intraoperative findings	Number (%)
Median lobe enlargement	269 (28.38%)
Global enlargement	319 (33.65%)
Hypertrophic bladder wall	255 (26.90%)
Thin Bladder wall	43 (4.54%)
Hyperaemic bladder mucosa	26(2.74%)
Calculi in bladder	21 (2.22%)
Bladder diverticulae	15 (1.58%)

Table 6

Postoperative Complications (n = 153)

Postoperative Complications	Number (%)
Immediate:	
Bleeding with clot retention	28 (18.30%)
Surgical site wound infection:	14 (9.15%)
Epididymoorchitis	14 (9.15%)
Transient urine incontinence	11(7.19%)
Late:	
Erectile Dysfunction	30 (19.61%)
Retrograde ejaculation	38 (24.84%)
Vesicocutaneous fistula	14 (9.15%)
Irritable bladder	3 (1.96%)

Results

Retrospective analysis of data of a total of 430 patients who underwent transversical prostatectomy for obstructive benign prostatic hyperplasia (BPH) between the period of March 2004 and March 2019 in two hospital in the Western Region of Ghana was done. Figure 1 shows the age distribution of patients with the 70-79 year age group accounting for 58.14% of the total number. As shown in table 1, most of the patients presented with the obstructive symptoms of straining to void, poor stream, feeling of incomplete voiding with 90.0%, 85.0%, and 20.0% respectively. Significant was the presentation of haematuria, 60.2%. Table 2 illustrates the findings on examination. Digital rectal examination revealed features suggestive of benign prostatic enlargement, with 60.0% of the patient having very large prostates (Grade 3). Inguinal hernias were found in 43.0% of the patients. In table 3, ultrasound findings of enlarged prostate with prominent median lobe in 51.6%. Patients with postvoid residual urine volume of 300-400mls constituent 40.0% of the total number. Patients with derailed renal function per laboratory results (Table 4) constituted 15.0% whilst those with anaemia represented 10.6%. urine cultures reveal microbes in 20.2% of the patients. Diabetes and hypertension were found in 37 (8.7%) and 97 (22.5%) of patients respectively. Intraoperative findings are shown in (Table 5). Median lobe enlargement was 63.2%, global enlargement constituted 75.0%. Regarding the findings relating to the bladder, hypertrophic bladder wall was seen in 60.0% of patients whilst those with thin walls was 10.0%. Hyperaemic mucosa with grainy lesions seen in 6.2% of patients whilst bladder diverticulae were seen in 3.5% of them. Intraluminal bladder calculi were seen in 5.0% of patients. The weight of the prostates ranged from 300- 700g. Histology report of the specimen showed 96.3% as benign prostatic tissue. Active chronic prostatitis in 0.8% of the specimen. Whilst 2.9% of the specimen had malignant features (carcinoma). As depicted in (Table 6), the immediate postoperative complication in majority of patients (6.5%) is bleeding and clot retention, surgical site infection constituted 3.2%, transient incontinence was 2.5% whilst retrograde ejaculation and erectile dysfunction were the main late complication taking a toll of 9.0% and 7.0% respectively.

Discussion

Nearly three decades ago the most common surgical procedure for the management of obstructive benign prostatic hyperplasia (BPH) was open prostatectomy, either transversical or retropubic. Then with the advancement of endourology, transurethral resection of the prostate (TURP) which was first introduced by Maximilian in 1926, became popularized. This later became the gold standard [1]. In addition other newer minimal invasive techniques such as transurethral incision of the prostate, thermotherapy [3], ethanol ablation, holmium laser ablation [2] and enucleation among others have been introduced in the management of obstructive BPH. These minimal invasive methods are employed where prostate size is about 75g. With larger prostates, open prostatectomy still

recommended [4]. In this retrospective study, data of 430 patients who had undergone transvesical prostatectomy were reviewed. The signs and symptoms, ultrasound and laboratory finding, management outcome with respect to immediate and long term complications were analysed. The mean age of the patients reviewed was 76.0 years which is consistent with those in revealed in other studies [5]. The predominant signs and symptoms are haematuria, retention of urine and huge prostate size, in contrast with those encountered in developed countries. There are also associated bladder calculi, bladder diverticulae and renal impairment, which are features of late presentation, a situation that is common in developing countries [6,7]. In developing countries with low income, patients with large prostate sizes are encountered late presentation or genetic predisposition [8,9]. Massive haematuria, which is life threatening is a common presentation here as recorded in other studies [10]. In this retrospective study, the prostate weighed between 150-450g, 51.6% of which having prominent median lobes that which is associated with the propensity to bleed. Management of bleeding prostates can be done with bladder irrigation with alumina silver nitrate [11,12], or selective arterial embolization. However transvesical prostatectomy enables direct and adequate control of the bleeding and also facilitate the simultaneous management of other late complication of bladder outlet obstruction such as bladder diverticulae [13]. Transvesical prostatectomy is also noted to have the lowest failure rate compared with other surgical methods employed in the management of obstructive BPH [13]. In situation of renal impairment, in our experience, renal function improved following 7-14 day of continuous bladder with drainage. The percentage of patients with the elderly as well as those with comorbidities such as hypertension and diabetes is similar to those recorded in other studies [14,15]. Prudent preoperative management of such patients is required for safe surgery. The magnitudes of clot retention and surgical site wound infection are similar to those reported in other studies [16-19]. Late complication of retrograde ejaculation is low. Three patients (0.7%) died. One was due to complications of Acute Kidney Injury, and two due to pulmonary embolism due to deep venous thrombosis (DVT) which is not uncommon in major pelvic surgeries [20]. Thus the mortality rate is low and is consistent with the current trend of mortality encountered in major urological surgeries [21]. Transvesical prostatectomy is still safe even though the length of hospital stay is more than observed with minimal invasive techniques [16].

Conclusion

Transvesical prostatectomy for obstructive BPH is still relevant in low income developing countries, where patients report late to the urologist and where large volume bleeding prostates with other bladder complications are encountered in urological practice despite the availability of modern minimal invasive techniques.

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Conflict of Interest

None.

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