

# Outcome of radical retropubic prostatectomy at the Lagos State University Teaching Hospital

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## ABSTRACT

**Background:** Prostate cancer is the most commonly diagnosed cancer in men in Nigeria and most cases present when the disease is already in an advanced stage. Radical prostatectomy for early prostate cancer is therefore not a commonly performed operation by urologists in Nigeria. We have had training and significant experience in radical retropubic prostatectomy. We, therefore, report the outcome of our initial experience. **Materials and Methods:** We review the record of men with early prostate cancer who had radical retropubic prostatectomy in our institution from 2007 to 2015. **Results:** There were 34 men who had radical retropubic prostatectomy in the 8-year period of review. The youngest and oldest patients were aged 50 and 71 years, respectively. The mean age was 64.2 years. All the patients were diagnosed following 12-core ultrasound-guided transrectal prostate biopsy for elevated serum prostate specific antigen (PSA). The mean serum PSA was 15.3 (range 8.5–100.3) ng/ml. The disease was pT<sub>1</sub>, pT<sub>2</sub>, and pT<sub>3</sub> in 6, 20, and 8 patients respectively. General anesthesia was employed in 28 (82.4%) patients and combined epidural and subarachnoid block anesthesia for 6 (17.6%) patients. The total duration of operation was 128–252 min (mean = 160 min). No blood transfusion was given in 5 (14.7%) patients while each of the remaining 29 (85.3%) patients had 2–5 units of blood intra- or post-operatively. There was no perioperative mortality. Complications include operation-induced erectile dysfunction in 12 (35.3%), major urinary incontinence in 1 (2.9%), lymphocele in 2 (5.9%), and reoperation due to anastomotic leak and right ureteric injury in 1 (2.9%). After a median follow-up of 42 months, disease recurrence has occurred in 3 (8.8%) patients 1 (2.9%) of whom has died of diabetic renal failure. **Conclusion:** Radical prostatectomy can be safely performed in men with early prostate cancer in Nigeria and should be offered to suitable patients.

**Key words:** Nigeria, outcome, prostate cancer, radical prostatectomy

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## INTRODUCTION

Prostate cancer is the most commonly diagnosed cancer in men worldwide<sup>1</sup> and in Nigeria where most cases present when the disease is already in the advanced stage.<sup>2-4</sup> However, with the improving awareness and prostate specific antigen (PSA) screening for the disease in Lagos, Nigeria, early cases of prostate cancer requiring radical curative operation are being seen.<sup>4,5</sup> Radical prostatectomy

is the gold standard for early prostate cancer<sup>6</sup> and has been shown to reduce progression to metastasis and death from the disease in randomized controlled trials.<sup>7</sup> However, open radical prostatectomy is technically one of the most difficult operations in the field of urology and most urologists in Nigeria and West Africa do not have the expertise and experience for this operation.<sup>8,9</sup> The training

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of the authors included a significant experience in radical retropubic prostatectomy. We, therefore, report our initial experience on radical retropubic prostatectomy, which to the best of our knowledge is the first in Nigeria.

## MATERIALS AND METHODS

We carried out a review of a prospectively collected data on all patients who underwent radical retropubic prostatectomy at our institution from October 2007 to September 2015. Data obtained included the patient's biodata, preoperative history (including preoperative erectile status) and clinical examination, imaging findings (computed tomography (CT) scan, magnetic resonance imaging (MRI), and isotope bone scan as available), type of anesthesia, length of operation, blood transfusion, postoperative complications, and the tumor characteristics. The data were analyzed using IBM-SPSS Statistics 21 (SPSS, Inc., Chicago, IL, USA).

## RESULTS

The clinical and pathological features are summarized in Table 1. There were 34 men who had radical retropubic prostatectomy during the period. The ages were 50–71 years and a mean age of 64.2 years. The mean body weight was 79 (range 68–115) kg and the mean

body mass index (BMI) was 28.5 (range 23.5–34.8) kg. Five (14.7%), 24 (70.6%), 5 (14.7%) men were classified as normal, overweight, and obese BMI categories respectively. All patients were asymptomatic for prostate cancer, and the diagnosis was made after 12-core systematic transrectal ultrasound-guided prostate biopsy for elevated serum PSA. Only 10 (29.4%) patients had preoperative lower urinary tract symptoms due to bladder outlet obstruction. Preoperative erectile dysfunction was present in 13 (38.2%) patients. The serum total PSA was 8.5–100.3 (mean 15.3) ng/mL. Two (5.9%) patients had serum PSA >20 ng/mL (50.2 and 100.5 ng/mL). Imaging for the further staging of cancer included CT scan of the pelvis or MRI of the prostate in 32 (94.1%) and isotope bone scan in 30 (88.2%) patients. The patients were staged as cT1 and cT2 disease in 8 (23.5%) and 26 (76.5%) patients respectively and N0 and N1 in 32 (94.1%) and 2 (5.9%) patients, respectively. None of the patients had any evidence of distant metastatic disease. All patients had adenocarcinoma of the prostate. Reported radical prostatectomy specimen Gleason scores were ≤6, 7 and 8–10 in 3 (8.8%), 22 (64.7%), and 9 (26.5%) patients, respectively. The postoperative pathological staging were pT1c, pT2, pT3 in 6 (17.7%), 20 (58.8%), and 8 (23.5%) respectively and pN0, pN1 in 32 and 2, respectively.

Unilateral nerve sparing radical retropubic prostatectomy was performed in 9 (26.5%), bilateral nerve sparing radical retropubic prostatectomy in 18 (52.9%), and no nerve sparing in 7 (20.6%) patients. General anesthesia was employed in 28 (82.4%) patients and combined epidural and subarachnoid block anesthesia for 6 (17.6%) patients. The latter was particularly useful in achieving postoperative analgesia. Bilateral pelvic (obturator) lymphadenectomy was routinely performed for all the patients before proceeding to prostatectomy. The total duration of operation was 128–252 min (mean = 160 min). No blood transfusion was given in 5 (14.7%) patients while each of the remaining 29 (85.3%) patients had 2–5 units of blood intra- or post-operatively. There was no perioperative mortality recorded. Urethral catheter was removed for 31 (91.2%) patients at 21<sup>st</sup> day postoperation after the cystogram showed no leakage. Three (8.8%) patients had catheterization for up to 6 weeks postoperation.

Postoperative complications recorded were summarized in Table 2. Anastomotic leak and ureteric injury occurred each in 1 (4.2%) patient, and the patients had repair of the anastomotic leak and ureteric reimplantation. Two patients developed lymphocele, one of which resolved spontaneously by 10<sup>th</sup> postoperative day and the other had percutaneous drainage of the lymphocele and instillation of sclerosant. In addition, 1 (2.9%) had bladder neck stenosis that responded well to bouginage.

Urinary incontinence was recorded in 5 (20.8%) patients (1 continuous and 4 stress incontinence) persisting beyond

**Table 1: Clinical and pathological features of all men who underwent radical retropubic prostatectomy**

Parameter	n (%)
Age (years)	
50-69	8 (23.5)
60-69	20 (58.8)
≥70	6 (17.7)
Mean (median)	64.2 (65)
BMI (kg/m <sup>2</sup> )	
Normal weight	5 (8.8)
Overweight	24 (70.6)
Obese	5 (8.8)
Mean BMI	28.5
Serum PSA (ng/ml)	
>4-10	9 (26.5)
11-20	23 (67.6)
>20	2 (5.9)
Mean (median)	15.3 (12.8)
Tumour stage	
pT1c	6 (17.7)
pT2	20 (58.8)
pT3	8 (23.5)
Nerve-sparing surgery	
None	7 (20.6)
Unilateral	9 (26.5)
Bilateral	18 (52.9)
Blood transfusion	
Yes	29 (85.3)
No	5 (14.7)

BMI – Body mass index; PSA – Prostate specific antigen

**Table 2: Complications following radical retropubic prostatectomy**

Parameters	n (%)
Surgical complications	
Lymphocele	2 (5.9)
Anastomotic leakage	1 (2.9)
Ureteric orifice injury	1 (2.9)
Anastomotic stenosis	1 (2.9)
Incontinence	
Minor	4 (11.8)
Major	1 (2.9)
ED	
Yes	12 (35.3)
No	9 (26.5)
Preoperative ED	13 (38.2)
Recurrence	
Yes	3 (8.8)
No	31 (91.2)

ED – Erectile dysfunction

6 weeks after removal of the urethral catheter. Among the 21 patients who had no preoperative erectile dysfunction, 12 (51.7%) developed postoperative erectile dysfunction.

The follow-up period ranged from 3 to 96 (median = 42) months. Biochemical recurrence with elevated serum PSA has been recorded in 3 patients at 24, 38 and 62 postoperative months, respectively. The first patient had who had preoperative PSA of 15.5 ng/mL and pathological stage of pT2bN0M0 was found to have PSA rise up to 8 ng/mL at 24 postoperative months and was commenced on goserelin. The other two patients were those who had preoperative serum PSA of >50 ng/ml and pathological stage T3N1M0. The first patient had bilateral orchidectomy, and the serum PSA has remained <0.1 ng/mL 4 years after (7 years after radical prostatectomy). The second patient had postoperative radiotherapy and goserelin. This patient died 6 years postradical prostatectomy from complications of diabetes. However, no prostate cancer-specific mortality has been recorded.

## DISCUSSION

Radical prostatectomy is performed for clinically localized prostate cancer, usually discovered through PSA screening.<sup>6</sup> Although screening for prostate cancer is currently controversial, it is recommended that annual PSA and digital rectal examination screening should be carried out among high-risk individuals such as black men with life expectancy  $\geq 10$  years. Although there is no formal screening program for prostate cancer in Nigeria, there is an annual public awareness campaign in Lagos state. This has resulted in identifying some early cases of prostate cancer suitable for radical prostatectomy, and they form a significant part of our series of radical prostatectomy.<sup>4</sup>

Prostate cancer is known to have poorer clinical and pathological features among men of African descent, but access to curative surgery for localized disease in West African is very limited.<sup>10-12</sup> There has been no report of radical retropubic prostatectomy, one of the most major operations performed in urology, anywhere in Nigeria. This is largely because most cases of prostate cancer present in the advanced stage. Those cases that present early are rarely offered radical prostatectomy due to limited expertise and experience in our environment. In this study, only 34 cases were reported over an 8-year period, and this underscores the low prevalence of radical prostatectomy in our environment.

The mean age among our patients is comparable to other reports from populations of African descent.<sup>9,12</sup> However, many of our patients are men who were asymptomatic but discovered from routine screening, unlike these previous studies.<sup>9,12</sup> The mean serum PSA of 15.4 ng/mL was quite similar but slightly lower than what was reported from similar study in Ghana (16.1 ng/mL) and much higher than that from West Indies (10.1 ng/mL).<sup>13</sup> Good cancer control has been achieved following radical prostatectomy among our patients. Only in three patients have disease recurrence been recorded and no patient has died directly from prostate cancer. The only death recorded is from complication of diabetes.

The operation time has progressively been reducing as we perform more cases. Obese patients tend to have a more difficult surgery and therefore higher operation time. Our mean operation time of 160 min is comparable to what is obtained in already established centers, but our transfusion rate of 85.3% is rather high. This may be due to the initial experience of both the surgical and anesthetic teams. A previous study reported a transfusion rate drop from 88.8% in 1998 to 9.1% in 2002 after defining a transfusion trigger.<sup>14</sup> We, therefore, expect a reduction in transfusion rate as we gain more experience. Although majority of the patients were operated under general anesthesia, the use of combined subarachnoid and epidural block was particularly beneficial for postoperative analgesia and therefore would be recommended for radical prostatectomy. The complications we recorded are comparable to what has been reported elsewhere, but we expect a reduction as we gather more cases.<sup>6,12,13,15,16</sup>

## CONCLUSION

Radical prostatectomy is feasible in our setting with good oncological outcomes and few complications. The operation should be offered to suitable patients with localized prostate cancer in our environment.

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## Conflicts of interest

There are no conflicts of interest.

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