

Retrospective Review of Outcomes of Open Retropubic Prostatectomy in Two Centers in Abuja, Nigeria

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ABSTRACT

Background: Prostate cancer remains the most diagnosed cancer in Nigerian men despite the lack of national Prostate Specific Antigen (PSA)-based screening. Radical prostatectomy for early prostate cancer is not a commonly performed operation by urologists in our country. **Objectives:** To report our experience with open radical retropubic prostatectomy in two tertiary hospitals in Abuja. **Materials and Methods:** Case notes and theatre records of all patients who underwent open radical retropubic prostatectomy at Federal Medical Centre, Abuja and National Hospital, Abuja between December 2021 and November, 2025 were retrospectively reviewed. Biodata, pre-operative parameters, intra-operative events and post-operative outcomes were documented and analyzed. **Results:** There was a total of 53 patients with a mean age of 60.7 years (range = 47 - 70) and preoperative PSA of 22.0ng/ml (range= 7.2 – 54). For the clinical stage, 83% had T1c disease. Lower urinary tract symptoms were reported by 52.2% of the patients while 47.8% were screen-detected. The duration of surgery, blood transfused, duration of admission and duration of catheterization averaged 3.5 hours, 2.2 pints, 9.1 days and 24.3 days respectively. The biopsy and specimen histopathology reports correlated in all cases. Sixty-five percent of patients had ISUP grade groups 1 and 2 and 30.4% had adjuvant ADT. Biochemical recurrence was documented in 3 patients (5.7%). No death was recorded. Short -term and long-term complications documented include anastomotic leak (n=6,11.3%) and bladder neck stenosis (n=5, 9.4%) and urinary incontinence (n=4,7.5%) and erectile dysfunction (n=11, 20.8%) respectively. **Conclusion:** Open radical retropubic prostatectomy was a safe procedure with acceptable oncologic and functional outcomes in selected patients at the two centres. Erectile dysfunction remains one of the most bothersome morbidities.

Keywords: Prostate cancer, Radical retropubic prostatectomy, Erectile dysfunction, Urinary incontinence.

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INTRODUCTION

Prostate cancer continues to be the most prevalent cancer diagnosis among men in Nigeria, accounting for 18,019 new cases and 11,443 fatalities in the country in 2022^[1,2,3]. Recently, there is increased awareness and implementation of routine serum prostate-specific antigen (PSA) screening, championed by organizations like the Nigerian Cancer Society and supported by the Federal Ministry of Health and Social Welfare as well as non-governmental organizations such as Project Pink Blue and Prostate Cancer Trans-Atlantic Consortium. This has led to earlier diagnoses of prostate cancer, with a notable increase in patients presenting with localized disease^[4]. However, most cases are still advanced disease at presentation in our setting^[5,6].

Although the surgical treatment for early prostate cancer has evolved considerably over recent decades, open radical retropubic prostatectomy (ORRP) remains a common choice of care^[7]. This procedure, despite its proven efficacy, is infrequently performed in Nigeria, primarily due to challenges such as limited surgical resources, insufficient training programs, and a lack of awareness among patients regarding available treatment options^[8]. Furthermore, alternative techniques, including laparoscopic and robotic-assisted prostatectomies, are in their nascent stages in Nigeria, with only three robotic surgical systems located in two major cities, further hindering access for the majority of prostate cancer patients.

The primary goals of radical prostatectomy are cancer control, preservation of urinary continence, and preservation of sexual function^[9,10]. While robotic-assisted radical prostatectomy (RARP) has gained prominence for its potential to reduce morbidity and facilitate recovery^[11], the evidence comparing its outcomes to ORRP is still evolving^[12,13].

Recent studies have highlighted that outcome following radical prostatectomy can differ significantly based on surgical technique, the proficiency of the surgical team, and the

demographic characteristics of the patient population^[14]. In Nigeria, factors such as patient demographics, the stage of disease at diagnosis, and the overall accessibility of healthcare services must be meticulously assessed to derive meaningful insights into the effectiveness of surgical interventions.

This study aims to document our four-year experiences with open radical retropubic prostatectomy across two hospitals in Abuja, Nigeria.

MATERIALS AND METHODS

This descriptive retrospective study reviewed the case notes and surgical records of all patients who underwent radical retropubic prostatectomy at the Federal Medical Centre, Abuja, and the National Hospital, Abuja, from December 2021 to November 2025. Patient selection criteria included histologically confirmed prostate cancer and the surgical procedure being performed openly. The diagnosis was made in all patients by Trans-rectal ultrasound (TRUSS) - guided 12- core systematic prostate biopsy. In addition to the routine full blood count, kidney function test, Chest x-ray, Electrocardiography, echocardiography and clotting panels, we ensured all patients had staging pelvic MRI and isotope bone scan. Following shared-decision making, informed consent was obtained from all patients and all had antibiotics as well as anti-thrombotic prophylaxis. We elected a combined epidural and subarachnoid block. The patient was catheterized and positioned supine with the middle of the operating table “broken” to open up the pelvis. A lower midline incision was developed to access the retropubic space extraperitoneally. We did not carry out pelvic lymph node dissection since the imaging was unremarkable and all patients had nerve sparing procedure. The endopelvic fascia was incised to access the prostatic apex and membranous urethra. Then, the deep venous plexus was divided and controlled, and the prostate was mobilized

retrogradely. Bladder neck was divided and Denonviller’s fascia incised at the prostatic base,

allowing access to and division of vas deferens as well as excision of seminal vesicles. Prostate and seminal vesicles removed en-bloc. This was followed by vesicourethral anastomosis over a 18-FG urethral catheter, which was removed 3-4 weeks after a satisfactory cystogram. Wound was closed, leaving a retropubic drain removed in 24-48 hours.

Data extracted encompassed demographic characteristics, pre-operative prostate-specific antigen (PSA) levels, details of the surgical procedure (operation duration, blood transfusion requirements), post-operative admission duration, catheterization duration, any complications recorded during the hospital stay, specimen histology, biochemical recurrence, metastasis and cancer-

specific survival. Statistical analysis was conducted using SPSS version 22, employing descriptive statistics to summarize the data.

Ethical approval for this study was obtained from the relevant institutional review committee (FMCA/HREC/2025/303).

RESULTS

There was a total of 53 patients who underwent open radical retropubic prostatectomy between the two centres in Abuja. The mean age of the patients was 60.7 years, with ages ranging from 47 to 70 years. Preoperatively, the mean prostate-specific antigen (PSA) level was 22.0 ng/mL, with a range of 7.2 to 54.1 ng/ml (Table 1).

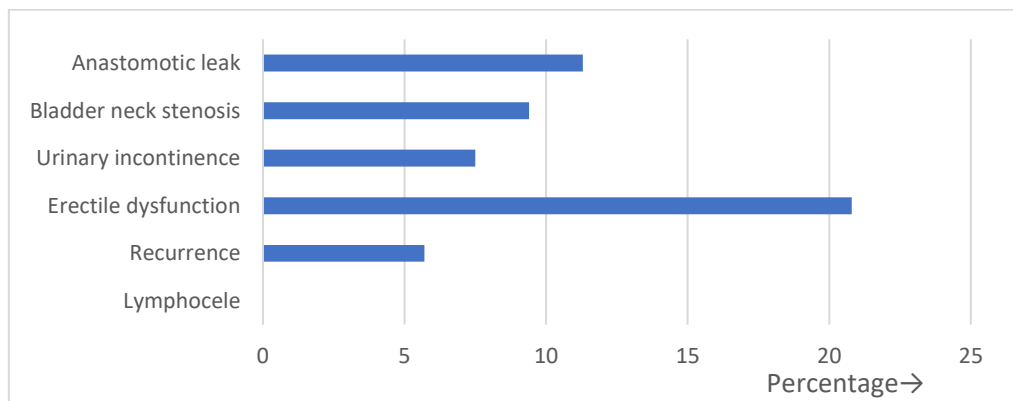


Figure 1: Bar chart showing the complications of open radical retropubic prostatectomy

Table 1: Preoperative parameters of the patients

Parameters	Frequency (n=53)	Percentage
Total PSA (ng/ml)		
0.01- 9.9	32	60.4
10.0- 19.9	12	22.6
> 20	9	17
Mean PSA= 22.0+/-5.4 (Range= 7.2- 54.1ng/ml)		
Clinical staging		
T1a-b	0	0.0
T1c	44	83
T2	6	11.3
T3	3	5.7

In terms of clinical staging, a significant majority at 83% were diagnosed with stage T1c prostate cancer, while 11.3.0% had T2 disease. A significant

proportion of patients experienced lower urinary tract symptoms, affecting 52.2% of the cohort while 47.8% of these patients were identified through screening programs.

We deployed a combined epidural and subarachnoid block and performed nerve-sparing radical prostatectomy in all cases. No pelvic lymphadenectomy was done.

The surgical procedure averaged 3.5 hours in duration, with a mean blood transfusion requirement of 2.2 pints. Postoperative recovery involved an average hospital stay of 9.1 days, and removal of catheterization lasted an average of 24.3 days after satisfactory cystogram as 4 patients (7.5%) had catheterization for up to 8 weeks.

Histopathological evaluation of the specimen correlated with transrectal ultrasound (TRUSS) biopsy with 65% of the patients fell into the International Society of Urological Pathology (ISUP) grade groups 1 and 2, with 24.5% of patients receiving adjuvant androgen deprivation therapy (ADT) as part of their treatment plan for a period of 24 months.

Figure 1 details early and long-term complications recorded. We observed anastomotic leak (n=6, 11.3%) and bladder neck stenosis in 5 patients (9.4%) as well as urinary incontinence (n=4, 7.5%) and erectile dysfunction in 11 patients (20.8%).

The cornerstone of follow-up care for all our patients was 3-6 monthly PSA and complications for the first 24 months. We did this for a median period of 16 months. Biochemical recurrence (rising PSA > 2ng/ml) was documented in 3 patients (5.7%). Importantly, there was no recorded cancer-specific fatality in this series.

DISCUSSION

The evolution of prostatectomy has seen a shift from open procedures to laparoscopic and, more recently, robot-assisted techniques in many Western countries [9] [15,16,17,18]. However, ORRP continues to be widely performed globally more so in resource-limited countries due to its established efficacy and cost-effectiveness [12] [19,20]

The findings from our study of 53 patients who had open radical retropubic prostatectomy at two centres in Abuja reveal important insights into the demographic, clinical, and postoperative outcomes associated with this surgical intervention for prostate cancer. The mean age of the cohort at 60.7 years is consistent with the literature, which indicates that the incidence of prostate cancer increases with age, particularly in men over 50 [4]

Preoperative PSA levels averaging 22.0 ng/ml and ranging from 7.2 to 54.1 ng/ml suggest a cohort with a significant burden of disease, aligning with data from the National Comprehensive Cancer Network (NCCN), which underscores the prognostic

implications of elevated PSA levels in prostate cancer patients [21].

The reported prevalence of lower urinary tract symptoms in 52.2% of the patients is noteworthy and corroborates findings from prior studies, which indicate that such symptoms are highly prevalent among patients with prostate cancer, potentially affecting their quality of life [22]. Furthermore, nearly half of the patients were identified through screening programs, highlighting the critical role of early detection in prostate cancer management and the impact of public health initiatives [23].

In this study, the average surgical duration of 3.5 hours and the average blood transfusion requirement of 2.2 pints reported are reflective of typical operative parameters reported in the literature, suggesting that the surgical teams are effectively managing the complexities of radical prostatectomy [24]. Pelvic lymph node dissection (PLND) was omitted in all our patients as majority of our patients had low-risk disease and all had unremarkable pelvic MRI, although the European Association of Urology (EAU) recommends performing PLND for high- and intermediate-risk patients [25]. However, PLND does not only prolongs operative time, but it may also result in bleeding, lymphocele and longer hospital stay [26]. Postoperative outcomes, including an average hospital stay of 9.1 days and catheterization duration of 24.3 days, fall within expected ranges, indicating a feasible recovery trajectory for patients undergoing this procedure. The relatively longer mean duration of catheterization compared to other local studies [5,6] may be accounted for by 8 patients whose catheterization lasted for 8 weeks.

Histopathological results revealing that 65% of patients fell into the ISUP grade groups 1 and 2, suggesting that our cohort includes a significant number of patients with less aggressive disease. This is consistent with other studies that show grade

group at diagnosis plays a crucial role in determining prognosis and guiding treatment decisions [27].

Our rates of erectile dysfunction and urinary incontinence are similar to those found in prior studies, which report complications ranging from 20-50% in patients' post-prostatectomy, thus reinforcing the necessity for ongoing patient education and support [28].

Functional outcomes, specifically urinary continence and erectile function, are major determinants of quality-of-life post-prostatectomy [7,9,29]. The Nigerian study reported that at 6 months post-surgery, 51.4% of patients were continent (using 0–1 pad per day), and 17.1% reported satisfactory erectile function (allowing sexual intercourse) [6]. These rates are influenced by factors such as patient age, preoperative functional status, and the nerve-sparing approach, if employed [30]. The puboprosthetic ligament preserving technique, for example, is one refinement aimed at improving continence rates [31]. In a sub-Saharan hospital study, the median time to continence (0–1 pads per day) was 3 months, with 68.6% achieving continence by 12 months [31].

Importantly, the absence of recorded fatalities in this series is a significant finding, underscoring the safety of open radical retropubic prostatectomy at these centres. This aligns with evidence that suggests that with appropriate patient selection and surgical technique, this procedure can be performed safely with low morbidity [26].

CONCLUSION

This two-centre experience indicates that ORRP is a safe procedure with manageable complication rates. Our findings will contribute to the growing body of literature supporting ORRP as a viable option for the treatment of localized prostate cancer in low-resource settings.

Recommendation

We recommend that future studies should be prospective and should aim for larger sample sizes and extended follow-up periods to better elucidate the long-term outcomes associated with surgical intervention.

Limitations

Key limitations to this study include its retrospective nature and small sample size. The study period is also short for a proper assessment of outcomes

Conflict of interest

There are no conflicts of interest

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