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# Complications of Prostatectomy in Patients Admitted to Mbarara Page | 63 Regional Referral Hospital

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## ABSTRACT

Prostatectomy is a globally known treatment for benign prostatic hyperplasia (BPH) and prostate cancer which involves surgically removing the prostate gland. Although the indications include leftover urine with documentation, recurrent infections, and urinary retention, there are notable regional differences. According to studies, compared to 30% in Uganda, over 50% of men in the USA have prostatectomy by the time they are 70 years old. This study examines the evolution of prostatectomy methods throughout time, emphasising the change from open procedures to robotic-assisted and minimally invasive laparoscopic procedures (MIRPs). Although MIRPs have potential advantages over open surgery, recent multinational research found no discernible advantage in terms of complication rates. The difficulties in Uganda and other Sub-Saharan Africa are highlighted in the report. Persistent difficulties are mostly caused by the limited acceptance of innovative methods and a shortage of skilled surgeons. Additionally, sophisticated technology is required to reduce problems since elderly patients having prostatectomy have a high frequency of co-morbidities. This study emphasises how more research is required to expand access to advanced surgical modalities and optimise methods in resource-constrained situations. The study on post-prostatectomy complications in Ugandan patients that has been provided provides a basis for future studies aiming at enhancing surgical outcomes in this area.

Keywords: Prostatectomy, benign prostatic hyperplasia, prostate gland, BPH

# INTRODUCTION

Prostatectomy is the surgical removal of all or part of the prostate gland. Enlargement of the prostate, commonly through benign prostatic hyperplasia (BPH), but sometimes through abnormalities such as tumours or from other causes, can restrict the normal flow of urine along the urethra, causing discomfort and difficulty voiding [1,2,3,4]. The indications for prostatectomy include symptoms or findings secondary to prostatic obstruction, e.g., acute urinary retention, recurrent or persistent urinary tract infections, recurrent gross hematuria, documented significant residual urine after voiding with or without overflow incontinence, pathophysiological changes of the kidneys, ureters, or bladder, abnormally low urinary flow rate, and normal flow rate with abnormally high intravesical voiding pressure and intractable symptoms such as nocturia, frequency, and urgency [5,6,7]. In a study to determine the appropriate indications of prostatectomy and to identify underlying clinical appropriateness in the UK, the panel agreed on indications for prostatectomy expressed in terms of different combinations of type of retention, severity of symptoms, and level of co-morbidity. 67% of these indications were explained [8,9,10]. According to the WHO, more than half of men between 60 and 70 years old and as many as 90% between 70 and 90 years old undergo prostatectomy in their lifetime in the USA. In a study conducted in Kenya at Kijabe Hospital, 20-50% of men in their 60's had prostatectomy, and on average, 200–250 prostatectomies were done in a year [11,12,13]. In Uganda, the prevalence of prostatectomy is 30% in men in their 50s and 80% in men in their 70s (MOH). In an attempt to alleviate some of the complications associated with other approaches to removing the prostate, different types of prostatectomy exist (Wikipedia). The first operations for the relief of urinary retention from prostatic enlargement were probably done through the perineum. Early medical writings contain references to the division of the bladder neck through the perineum for this purpose [14,15,16]. Through the years, however, prostatectomy has undergone a major revolution. However, an international group of researchers has reported that minimally invasive radical prostatectomy (MIRP), which encompasses laparoscopic and robot-assisted procedures, holds no advantage over open radical prostatectomy in terms of complication rates (international researchers, Hamburg, Germany). Prostatectomy remains one of the most performed operations in the world [17,18,19,20] For a long time, prostatectomy has remained one of the oldest surgeries performed in the world and Uganda as a whole. It is an area in which quite extensive research has been undertaken and new techniques are coming up. However, the advent of new modalities still lags in Africa, particularly in Uganda; this particularly plays a role in the failure to reduce the complications associated with this procedure. Few surgeons have been trained in new techniques; hence, that is a challenge. Because of the age that's commonly involved, co-morbidities are also a challenge, and hence, good equipment is needed to curb the morbidities associated. Research is the key to understanding and addressing these problems and reducing complications. Hence, this research https://www.eejournals.org

opens the door. The research was designed to determine the common complications of prostatectomy in patients admitted to MRRH.

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# METHODOLOGY

# Area of Study

Mbarara Regional Referral Hospital (MRRH) is a government-funded hospital established in 1940. The hospital is located in the Mbarara district and serves a population of over 4 million people in the districts of Mbarara, Kiruhura, Ntungamo, Ibanda and Isingiro.

Page | 64 The hospital has a bed capacity of 600 beds.

# Study population

The study involved male patients who were admitted to the surgical unit and had prostatectomy.

Study design

A retrospective cross-sectional study looked into all case profiles stated in the study interval time.

## Sample size

The following formula was used to calculate the required sample number;  $n = Z^2 P (1-P)$ 

D^2 Where;

d = margin of error of setting a significance level of 0.07 (i.e. 7%). P= prevalence 0.5

Z=Level of significance (1.96) for a confidence interval of 95%.

With the above formula, 100 participants will be recruited into the study. Hence  $n=1.96 \times 0.5 \times 0.5 / (0.07) = 100$ 

**Data collection** 

Tables were used to collect data. The first 20 files from each month were considered

# Data analysis

Before entry, the data collected was checked for completeness. Data was then entered and analyzed statistically using Statistical Packaging for Social Scientists (SPSS) version 16. The analysis included cross-tabulations, Pearson correlation and linear regression.

### **Inclusion criteria**

All patients who were admitted to Mbarara Regional Referral Hospital for prostatectomy.

**Exclusion criteria** 

All patients who were referred to other hospitals due to complicated cases.

### **Ethical Consideration**

Permission was sought from the dean faculty of clinical medicine and dentistry of Kampala International University on behalf of the Institutional Research Committee (IREC) of KIU. Permission from the medical superintendent of Mbarara Regional Referral Hospital was sought and formal permission was granted before data collection was collected Consent to providing information to the respondents was observed. All respondents were assured and guaranteed of confidentiality of the information they provided during and after the process of the research. Respondents were assured of the risks and benefits of the study and informed that they were free to withdraw from the study at any stage they wished. Page | 65

# Figure 1: Shows Prevalence of Prostatectomy others prostatectomy

RESULTS

	11%	

# Table 1: Shows Age Distribution

					Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	<50	1	3.1	3.1	3.1
	51-60	1	3.1	3.1	6.2
	61-70	7	21.9	21.9	28.1
	71-80	14	43.8	43.8	71.9
	>81	9	28.1	28.1	100.0
	Total	32	100.0	100.0	

The histogram above shows that prostatectomy was carried out mostly between the ages of 70-90 years with age group 71-80years having a higher distribution followed closely by those ages above 81 years.



# Figure 2: Shows marital status

Figure 2 above shows that most men (68.75%) were married as opposed to others (31.25%) who were either widowed, divorced or single.





The above figure shows that the symptoms lasted longer within 1-2 weeks (frequency of 23), followed by a > 4-week period (6) and the least duration distribution was between 3-4 weeks (3).

Figure 4: Shows the indications for surgery



# indications

From the figure above the commonest indication of surgery was urinary retention (53.12%) with the second most indication due to mixed symptoms at 25%.

**Cumulative Percent** 

		Frequency	Perecent	Valid Percent	
Valid	TVP	32	100.0	100.0	100.0

From the above table, trans vesical prostatectomy was the most commonly performed surgery done with 100% distribution.

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The above figure shows that diabetes mellitus and hypertension had the highest frequencies followed by others like asthma, rheumatological conditions and others.

	Table 3: Shows the intra-operative complications					
					Cumulative Percent	
		Frequency	Percent	Valid Percent		
Valid	blood transfusion	14	43.8	43.8	43.8	
	none	18	56.2	56.2	100.0	
	Total	32	100.0	100.0		

The table above shows that most patients never have complications intra-operatively. However, the most common complication was a blood transfusion and the least was morality.

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	Table 4: Shows the amount of transfused blood					
						Cumulative Percent
			Frequency	Per cent	Valid Percent	
	Valid	1-2pints	6	18.8	42.9	42.9
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		>2 pints	7	21.9	50.0	92.9
		3	1	3.1	7.1	100.0
		Total	14	43.8	100.0	
	Missing	System	18	56.2		
- -	Total		32	100.0		



Figure 6: Shows the post-op complication

The figure above shows that wound infection was the highest complication (54.83%), re-exploration had 15.62% and 25% of the patients had no complications. However, mortality was 3.13%.



# Figure 7: Shows length of hospital stay

The above figure shows that most patients stayed in the hospital averagely 2-3weeks, followed by less than 2weeks and then more than 3weeks.

	Table 5: Shows the complaints at follow-up						
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	urine drip	10	31.2	32.3	32.3		
	impaired sexual function	3	9.4	9.7	41.9		
	none	18	56.2	58.1	100.0		
	Total	31	96.9	100.0			
Missing	System	1	3.1				
Total		32	100.0				

From the table above most patients who were followed up 58.1% had no complaint, it was followed with dribbling of urine 32.3% and impaired sexual performance 9.7%. However, 3.1% were never followed – up.



The figure shows that in the majority of patients, PSA was not done (72%) as compared to the ones who did it (28%).

# DISCUSSION

### Age distribution and marital status

The bar chart 1 above shows that the age distribution of prostatectomy was commonly distributed between the ages 51 and 90; however, the highest age distribution was 71-80.>81 years. This shows that the incidence of indications of prostatectomy increases as one ages. This is supported by the WHO finding that more than half of men, between 60 and 70 years old, and >70% of men in their 90s had prostatectomy done. In Uganda (MOH-2006), 30% of men in their 50s and 80% in their mid-70s have the procedure. However, this distribution could not be explained by marital status, according to Table 1 above, as 68.75% of the patients were married and 31.25% were not, even though it could be seen that patients who were married had the highest percentage. Another relationship that could not be explained was the effect of genetics on the indications of prostatectomy, as the data wasn't adequate and lacked consistency. The participants were aged between 47 and 90 years; according to bar chart 1, the age with the highest frequency was 71-80 years; this was followed closely by ages >81 years; third place was 61-70 years; and the least age affected was <60 years. This research showed that morbidity and mortality increase with age, due in part to the associated co-morbid conditions. The co-morbid conditions have been shown by this research to affect the outcome of this surgical procedure. According to bar chart 2 above, other medical conditions (asthma, rheumatologic conditions, pneumonia, and renal problems) accounted for the highest percentage (31.25%), followed closely by diabetes (28.125%), hypertension (25%), and hernias (6.25%). However, about 9.375% of patients had no co-morbid condition. The average duration of symptoms was 1-2 weeks; however, this research couldn't explain the relationship between the duration of symptoms and the outcome of the procedure. However, the research shows that taking too long to get medical attention increases the risk of complications, particularly hernias and pyelonephritis. According to Table 2, the indication for surgery was mainly due to acute urinary retention (53.12%), followed by mixed symptoms (25%), dysuria (16.63%), and least haematuria (0.25%). In Table 3, the most common type of surgical procedure was trans vesical prostatectomy. The relationship between this and the complications was directly explained by this research, as bleeding and hence blood transfusion were the main intra-operative complications (43.75%). However, 53.125% of the patients never required blood transfusions, and 3.125% mortality was recorded. The study also showed that mostly 1-2 pints of blood were transfused (57.143%), and in>2 pints was 42.857%. However much of this type of procedure was directly associated with increased mortality and morbidity, many factors interacted to determine the outcome, including co-morbidity conditions. The most common post-operative complication was wound infection (53.83%), followed by re-exploration (15.62%), and mortality was 3.13%. However, 25% of patients had no post-operative

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complications. This post-complication had a direct effect on how long the patients stayed in the hospital, with the average hospital stay being 2-3 weeks, according to bar chart 4. However, during follow-up, 46.67% of patients had no complaints; anyway, 33,33% had dribbling of urine; impaired sexual function was 10%; and not-followed-up was 10%.

### CONCLUSION

The prevalence of prostatectomy in MRRH is 10.77%, with the average age being 60-90 years and trans vesical prostatectomy being the most commonly performed type (100%). Comorbidities like diabetes (28.125%) and hypertension (25%), play important determinants of outcome. The common complications include intra-operative blood transfusions (43.75%), wound infections (53.15%), re-exploration (3.875%), and mortality (0.75%). The above complications determine the length of hospital stay and, hence, the decreased productivity of these patients in the community. Hence the need to adopt the below-suggested recommendation to reduce mortality and morbidity.

### Recommendations

Training of surgeons in new surgical techniques for performing prostatectomy. Health education to the patients to enable proper control of co-morbidities like hypertension and diabetes to reduce their direct effect on surgical outcomes. Effective nursing care for these patients is needed to prevent complications like wound infections. Proper follow-up to try and find out any complications arising after discharge.

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