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EARLY TREATMENT OUTCOMES OF URETHRAL STRICTURE SURGERY AND PATIENT SATISFACTION IN MOI TEACHING AND REFERRAL HOSPITAL, ELDORET-KENYA

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ABSTRACT

Background: Urethral strictures are scarred urethral tissues leading to narrowed lumen and difficult voiding. Their surgery requires a refined approach to achieve optimal results in terms of normal urination. Besides the quality of urine flow after surgery, the patient's view of the surgical outcome is increasingly becoming an important factor in holistic patient care. This study looked into the early postoperative outcomes of stricture surgery up to the time of discharge and the patient satisfaction level following the treatment in a tertiary health facility in the Western region of Kenya.

Objective: To establish the early treatment outcomes and patient satisfaction after stricture surgery in Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya.

Design: A cross-sectional, purposive study done using an interviewer-administered questionnaire.

Setting: The Urology Inpatient Unit of Moi Teaching and Referral Hospital, Eldoret-Kenya.

Subjects: Sixty-five male patients admitted with and operated on for urethral strictures.

Results: The participants' ages ranged from 9 years to 86 years with a mean \pm standard deviation of 43.1 ± 20.8 years. Patients who had long strictures in excess of 3cm, membranous- or strictures in multiple sites and those with co-morbidities had more complications and lower levels of patient satisfaction. Overall, there was 80% rate of patient satisfaction at discharge from the ward.

Conclusion: Stricture site, length and patient co-morbidities determined the early surgical outcomes and the level of patient satisfaction.

Recommendation: Urologists should maximize patient satisfaction by optimizing the early surgical outcomes that are dependent on stricture and patient characteristics.

INTRODUCTION

Urethral stricture is a common urological problem involving narrowing of the urethra caused by the presence of a scar consequent on infection or injury(1). Its treatment options are based on the location, length and severity of the stricture and remain a challenge even among experts (2).

While the early surgical outcomes are varied, they remain undocumented in many settings including Moi Teaching and Referral Hospital (MTRH); the second tertiary health facility in Kenya. Patient appraisal of the surgical outcome on the other hand has remained an area least explored and largely unknown beyond anecdotes (3). This paper examined the early surgical outcomes and patient satisfaction following surgery for urethral strictures and sheds light on these two important aspects of urethral surgery.

MATERIAL AND METHODS

We conducted a cross-sectional study between March 2018 and June 2019 at the Moi Teaching and Referral Hospital in the Western region of Kenya. Approval of the research by the Institutional Ethics and Research Committee (IREC) was sought and duly granted prior to start of the study. Patients presenting to the urology surgical ward with urethral strictures in need of operation were recruited into the study after giving an informed consent. A purposive consecutive sampling was used and data was collected using an interviewer-administered questionnaire. Using the

Fisher's formula for sample size estimation (1998) with 95% confidence interval and an alpha of 0.05, the calculated sample size after adjusting for a finite population was 60 patients based on a study done in 2013 (4) in the same population.

Data on the stricture site, length, numbers, the type of surgical intervention done, complications that occurred postoperatively, duration of stay in the ward prior to discharge and the patient view of surgery as to whether satisfied or not with the surgical outcome were collected. The collected data was coded and transcribed into a spread sheet. It was then entered into a computer, cleaned and analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. The primary outcome measures were early complications and the secondary outcome measure was patient satisfaction level.

Discrete data was summarized using frequencies, proportions, ratios and percentages while continuous data was by mean and standard deviation. Inferential statistics were considered statistically significant at an alpha of ≤ 0.05 .

RESULTS

A total of 65 males participated in the study. The ages ranged from 9 years to 86 years with a mean \pm standard deviation of 43.1 ± 20.8 years. There were 57 (87.7%) adults and 8 (12.3%) minors in the study. The 65 respondents had a total of 77 strictures with 10.8% of them having multiple sites of stricture. Table 1 below shows the distribution and lengths of the strictures:

Table 1
Anatomical Sites and Lengths of Strictures

Site	Frequency	Percentage	Length in cm±SD
Membranous	13	16.9	1.2(0.3)
Bulbo-membranous	14	18.2	2.5(1.1)
Bulbar	17	22.1	2.4(1.8)
Penile	23	29.9	3.3(2.5)
Peno-bubar	10	12.9	4.3(3,6)
TOTAL	77	100	

The strictures involving the penile portions were longest while the membranous had the shortest ones. A total of 75 procedures were done. One patient with inoperable bulbo-

membranous urethral stricture after a road traffic accident had a permanent suprapubic catheterization recommended. The rest are as in table 2 below:

Table 2
Stricture Site and Modality of Treatment Used

SITE	DVIU	STAGED	GRAFT	FLAP	ANASTOMOSIS
MEMBRANOUS	3	1	0	0	9
BULBO-MEMBRANOUS	3	0	0	0	10
BULBAR	2	2	2	1	10
PENO-BULBAR	0	1	1	2	5
PENILE	3	10	6	3	0
TOTAL	11	14	9	6	34

From this table, the interventional procedures done, in rank of frequency, were anastomotic urethroplasty (45.3%), substitution (graft and flap) urethroplasty

(20%), staged urethroplasty (18.7%) and DVIU (14.7%). The significant early post-surgical outcomes are shown in table 3 below:

Table 3
Early Surgical Outcomes Following Intervention

OUTCOME	FREQUENCY	PERCENTAGE
Perineal oedema	30	46.2
Scrotal swelling	24	36.9
Surgical Site Infection	11	16.9
Urine extravasation	9	13.8
Urinary Tract Infection	7	10.8
Wound dehiscence	6	9.2

Scrotal swelling and perineal oedema were particularly noted in patients who had long strictures in excess of 3cm or strictures at multiple sites that required surgery lasting more than three hours. The shorter the stricture, the less these complications were noted. Patients who had anastomotic urethroplasty had 3.3 times the likelihood of complications when compared with those who underwent staged urethroplasty. There

was no significant difference in complications when grafts were compared to flaps as modalities of treating urethral strictures. Anastomotic urethroplasty had the biggest proportion of complications per procedure and was 4 times as common as the complications due to DVIU that was less frequently done and had the lowest proportion of complications per procedure. Surgical site infections and wound

dehiscence were common in patients with co-morbidities.

The duration of hospital stay ranged from 5 to 12 days with mean of 8.3 days and median duration of 6 days. Patients with co-morbidities tended to stay longer than those without.

At the time of discharge, 52 patients were satisfied with their outcomes, giving 80% satisfaction rate. All those unhappy with the outcome of surgery had co-morbidities that contributed to complications and longer stay in the hospital. Staged urethroplasty was leading in unsatisfactory results, followed by DVIU and then anastomotic urethroplasty. Patients with strictures involving the membranous urethra were least satisfied, followed by penile and then bulbar urethral strictures.

DISCUSSION

The surgical treatment of stricture disease can be complex and challenging due to the multiple factors that need to be considered including anatomical location, underlying pathophysiology as well as patient co-morbidities (5). These factors in turn determine the likely outcomes of surgical interventions. The early postoperative outcomes of stricture surgery have not been adequately explored in literature (6) and can play a significant role in the overall results as well as the patients' perceptions of his problem's resolution. This paper has endeavoured to establish these early outcome measures as a baseline for the institution and comparison with other studies done elsewhere.

The extent of surgery will determine the tissue response and the likely possible outcomes in the early postoperative period (7). These early outcomes will progress to the late ones that, depending on the degree of structural and functional success, will be the ultimate marker of the true outcome of the stricture surgery (8, 9). Some of the early

complications like surgical site infections and wound dehiscence are likely to make the late complications worse to the patient.

The surgeries involving the posterior urethra, either in isolated or combined forms, demand a lot of tissue dissection and mobilisation. They will then inevitably have more tissue response to trauma and likely complications. This can easily explain the bigger proportion of complications arising from membranous and bulbo-membranous strictures evidenced in this study and are in keeping with other studies done elsewhere (7-9).

While other studies have incorporated varied forms of pain as an outcome of early urethral stricture surgery (10-13), this study dwelled on the more objective of the outcomes; those that could be documented without eliciting inter-observer differences. In a setting where any and every complaint is taken as an outcome, there exists the likelihood that the complications will appear inordinately high and in the process fail to relay the meaningful information that can aid in immediate and long-term patient care (7). It is upon the surgeons to consider the significant early outcomes that might interfere with the ultimate goal of achieving voiding that is as close to normal as possible. The subjective inputs from patients like pain that are difficult to quantify objectively and vary from patient to patient under similar circumstances should be given less prominence when evaluating the early surgical outcomes unless there is a validated tool (3).

The validated Urethral Stricture Surgery Patient Related Outcome Measure (USS PROM) tool has been found to be reliable in establishing patient satisfaction with early surgical outcome of stricture surgery (8). Studies done in India, Brazil and USA have shown patient satisfaction rates between 80% (14). Sukhanov and others (15) had findings similar to ours that patients who had co-morbidities also tended to have

longer stays in the wards and greater tendencies to multiple complications in the early post-surgical phase. Our study also indicates that procedures like staged urethroplasty, even though with less complications compared to others, yield fewer satisfied patients probably due to the lifestyle altering period between the first and second stages when men have to squat to void. This should inform urologists whose view on success of the surgery might not be in tandem with the patient's satisfaction level.

CONCLUSION

Stricture site, length and patient comorbidities determined the early surgical outcomes and the level of patient satisfaction.

RECOMMENDATION

Urologists should maximize patient satisfaction by optimizing the early surgical outcomes that are dependent on stricture and patient characteristics.

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