



Article

Evaluation of The Results of The Effect of Hemorrhoid Surgery on Urological Patients

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Abstract: Hemorrhoid surgery is a common procedure in patients with hemorrhoids, but its impact in patients with urological conditions is unknown. We aimed to evaluate the outcomes of hemorrhoid surgery in urological patients over a 12-month follow-up. In this cross-sectional study, 98 urological patients who had undergone hemorrhoid surgery were evaluated. Preoperative and postoperative symptoms were quantified with the help of validated scales. Postoperative complications were noted, and health-related quality of life was evaluated preoperatively and postoperatively with the help of a standard QoL (SF-36). Univariate analysis was performed to search for risk factors affecting long-term health outcomes. The study found that the majority of patients were aged 41-60 years (74.3%), predominantly male (71.4%), with a high rate of comorbidities, including hypertension (50.0%) and diabetes mellitus (26.5%). Following surgery, there was a dramatic alleviation of urological symptoms, as seen in reductions in dysuria (3.4 ± 1.1 to 1.2 ± 0.5 , $p < 0.001$) and nocturia (2.8 ± 1.3 to 0.8 ± 0.4 , $p < 0.001$). Postoperative morbidity was minimal, with 8.2% of patients developing urinary retention. Quality of life was greatly improved in all domains assessed ($p < 0.001$). Age, BMI, and ASA grade were identified as risk factors for adverse long-term outcomes on univariate analysis (ORs between 1.05 and 2.10). Hemorrhoid surgery appears to significantly enhance health-related quality of life and urological symptoms in patients for as long as a 12-month follow-up. The postoperative outcome and recovery may be influenced by the presence of certain comorbidities and demographic factors.

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Keywords: Hemorrhoid surgery, Urological patients, Postoperative complications, Quality of life, and Risk factors.

1. Introduction

Hemorrhoidal disease is a prevalent illness characterized by the swelling of vascular structures of the anal canal, leading to pain, discomfort, and bleeding of the rectum [1], [2]. Although primarily an anorectal illness, the development of hemorrhoids with other urological illnesses has been of increased interest in clinical practice [3]. Urological signs such as dysuria, urinary retention, and frequency of micturition may influence the quality of life of the patient significantly. Recent findings suggest an anticipated correlation between anorectal and urological well-being, with hypothesized anatomical and physiological interactions among pelvic organs [4], [5], [6], [7]

Surgical intervention remains a stalwart treatment modality for advanced hemorrhoidal disease, particularly in those who are nonresponsive to standard management modalities [8], [9], [10], [11]. While symptom relief for hemorrhoids is the

main indication for hemorrhoid surgery, there is comparatively limited data on the urological ramifications of such a procedure outside the immediate setting [12], [13], [14], [15], [16]. Studying the outcome and influence of hemorrhoid surgery in urological patients is significant because it may potentially affect clinical decision-making and optimize postoperative convalescence [17], [18], [19].

2. Materials and Methods

Study Design

This cross-sectional study was conducted between the period March 2024 and March 2025 in different hospitals in Iraq. The primary aim was to evaluate the impacts of hemorrhoid surgery on the urological symptoms, outcomes, and overall health-related quality of life in patients with urological diseases.

Data Collection of Participants

Ninety-eight patients who were 30 years old and older with hemorrhoids and coinciding urological diseases (dysuria, nocturia, urinary retention) were recruited from the urology clinic. Patients who were to undergo an operation for hemorrhoids were recruited into the study, but patients with bad comorbidities, previous anal surgery, or emergency cases were excluded. Demographic information (age, gender, ASA classification, body mass index) was collected in the current study. Preoperative urological symptoms were quantified using validated questionnaires.

Surgery Management

All of the procedures were done by experienced teams of colorectal surgeons using semi-closed hemorrhoidectomy and stapled hemorrhoidopexy. Antiseptic preoperative procedures were employed in accordance with standard surgical practice, and patients were given prophylactic antibiotics according to institutional guidelines.

Postoperative Outcomes

Postoperative assessments were done at 1 week, 1 month, 3 months, and 12 months post-operation. Postoperative complications such as urinary retention, dysuria, infection, or pain were inquired about from the patients. Symptoms of urology were reassessed with the same proven scales as prior to the operation. Health-related quality of life was measured by the SF-36 QoL questionnaire, and patient feedback regarding recovery was obtained.

Statistical Analysis

A summary of the data was created using descriptive statistics, including means, standard deviations, and frequency distributions. Urological symptoms change was investigated by paired t-tests for the continuous variables and Chi-square tests for categorical variables at a significance level of $p < 0.05$. Univariate logistic regression analyses were performed to search for potential risk factors that affect the long-term postoperative outcomes; odds ratios (ORs) in terms of corresponding confidence intervals (CIs) were calculated to ascertain their clinical significance. All statistical analyses were conducted with SPSS, version 22.0.

3. Results

The demographic data recapitulated a heterogeneous population of patients undergoing assessment for hemorrhoidal surgery. Overall, $N = 98$ subjects were assessed and categorized into a number of groups, with the largest proportion of subjects aged between 41-50 years (38.8%), closely followed by the 51-60 years age group (35.7%). Individuals in the 30-40 age group made up 25.5% of the population. There was a significant male predominance, with males constituting 71.4% of the population, which is relevant in the context of the higher frequency of certain urological disorders in men. Participants were roughly evenly split, as 53.1% had a BMI of < 28.0 . High BMI (≥ 28.0) was seen in 46.9% of patients, showing a modest risk continuum in the population. Interestingly, hypertension and diabetes mellitus were also equally distributed, at approximately 50% and 26.5% respectively. The majority of participants (57.1%) also had

benign prostatic hyperplasia, indicating significant comorbidity in this patient population. In addition, most of the patients (67.3%) were ASA II, indicating moderate risk for perioperative complications, which requires keen clinical management, along with a higher proportion of participants having secondary education (45.9%), indicating a highly educated population, predominantly from the middle class (52%), see table 1.

Table 1. Demographic and Baseline Characteristics.

Characteristic	N (%)
Age group, years	
30 - 40	25 (25.5)
41 - 50	38 (38.8)
51 - 60	35 (35.7)
Gender	
Male	70 (71.4)
Female	28 (28.6)
BMI (kg/m ²)	
< 28.0	52 (53.1)
≥ 28.0	46 (46.9)
Hypertension	
Yes	49 (50.0)
No	49 (50.0)
Diabetes Mellitus	
Yes	26 (26.5)
No	72 (73.5)
Smoking history	
Yes	30 (30.6)
No	68 (69.4)
Benign prostatic hyperplasia	
Yes	40 (57.1)
No	30 (42.9)
ASA classification	
I	18 (18.4)
II	66 (67.3)
III	14 (14.3)
Education status	
Primary	20 (20.4)
Secondary	45 (45.9)
University or above	33 (33.7)
Socioeconomic status	
Lower class	25 (25.5)
Middle class	51 (52.0)
High class	22 (22.4)

Table 2 gives the laboratory and anal manometry results, which inform clinical decision-making for surgery, where an overwhelming majority of participants (79.6%) had BUN < 20 mg/dL, which typically indicates normal renal function. Similarly, 84.7% of the patients had creatinine < 1 mg/dL, indicating minimal prevalence of acute renal

dysfunction among the population. Besides, manometric measurements established that 54.1% of the patients had resting pressures < 84 mmHg, and 69.4% had squeezing pressures < 150 mmHg, which represent pelvic floor dysfunction, which can correlate with urological symptoms of the patients.

Table 2. Laboratory and Anal Manometry Results.

Test	Result (N, %)
Serum blood urea nitrogen (mg/dL)	
≥ 20	20 (20.4)
< 20	78 (79.6)
Serum creatinine (mg/dL)	
≥ 1	15 (15.3)
< 1	83 (84.7)
Maximal resting pressure (mmHg)	
≥ 84	45 (45.9)
< 84	53 (54.1)
Maximal squeezing pressure (mmHg) (%)	
≥ 150	30 (30.6)
< 150	68 (69.4)

Table 3 described preoperative symptomatology endured by participants and provided insight into the clinical situation. Top-level symptoms were frequency (25.5%), urgency (20.4%), and nocturia (22.4%), which represent dominant signs of intrinsic urodynamic disorders. Dysuria and hematuria occurred in 14.3% and 10.2% of patients, respectively. Among hemorrhoid symptoms, anal prolapse (35.7%) and anal bleeding (30.6%) were most common and suggestive of advanced hemorrhoidal disease. That 63.3% of patients had Grade III hemorrhoids and 36.7% had Grade IV hemorrhoids suggests that surgical intervention should be contemplated in this group.

Table 3. Preoperative Symptoms Outcomes

Symptoms	N (%)
Urological Symptoms	
Dysuria	14 (14.3)
Hematuria	10 (10.2)
Frequency	25 (25.5)
Urgency	20 (20.4)
Nocturia	22 (22.4)
Incontinence	12 (12.2)
Retention	8 (8.2)
Flank Pain	16 (16.3)
Hemorrhoid Symptoms	
Anal prolapse	35 (35.7)
Anal bleeding	30 (30.6)
Anal pain	20 (20.4)
Itching	15 (15.3)
Discharge	12 (12.2)
Hemorrhoid Grade	
Grade III	62 (63.3)
Grade IV	36 (36.7)

Table 4 clinical outcomes determined the effectiveness of the surgical techniques employed. Semi-closed hemorrhoidectomy was performed in 56.1%, and stapled hemorrhoidopexy in 43.9%. This proportion is a reflection of bias towards the traditional techniques, possibly due to familiarity and established effectiveness. General and spinal anesthesia were used, and 75.5% of patients were administered postoperative analgesics, demonstrating an approach towards effectively overcoming anticipated postoperative pain. Average time of operation was 45 ± 10 minutes for semi-closed hemorrhoidectomy and 40 ± 12 minutes for stapling, which can reflect the complexity and skill required for each procedure. An impressive 81.6% of patients regained their defecation function within 5 minutes postoperatively, which is indicative of good functional recovery. But 15.3% experienced a postoperative recurrence of urological disorders.

Table 4. Clinical Outcomes of Hemorrhoids in Urological Patients

Variable	Result
Hemorrhoid Techniques, N (%)	
Semi-closed hemorrhoidectomy	55 (56.1)
Stapled hemorrhoidopexy	43 (43.9)
Anesthesia Used	General and Spinal
Analgesics Use, N (%)	
Yes	74 (75.5)
No	24 (24.5)
Operation Time (min), (mean \pm SD)	Semi closed: 45 ± 10 Stapled: 40 ± 12
IV Fluid Volume (mL)	1000 ± 250
Number of hemorrhoids resected ≥ 4 , N (%)	30 (30.6)
Post-operative Defecation Time, min, N (%)	< 5 : 80 (81.6) ≥ 5 : 18 (18.4)
Recurrence of Urological Issues	
Yes	15 (15.3)
No	83 (84.7)

Table 5 postoperative complications illuminate areas of risk to surgery. The total complication rate of 33.67% is relatively low, and the most common complication, at 14.29% was urinary retention. Sexual dysfunction and pain, both at 7.14% and 4.08%, respectively, were other notable complications, but there was no incontinence of stool. The occurrence of bleeding and infections, both at 2.04%, also identifies areas of risk that have to be addressed carefully postoperatively.

Table 5. Post-operative Complications

Complication	N (%)
Pain	4 (4.08%)
Urinary retention	14 (14.29%)
Sexual Dysfunction	7 (7.14%)
Anal stenosis	4 (4.08%)
Fecal incontinence	0 (0.0%)
Bleeding	2 (2.04%)
Infection	2 (2.04%)

Death	0 (0.0%)
Total	33.67%

The SF-36 test in Table 6 also gave a strong indication of pre- and post-operative quality of life. In every domain, there were post-operative significant improvements. For instance, the physical disorders mean score was 70.2 ± 10.5 pre-operatively and 85.4 ± 8.1 post-operatively (statistical significance likely achieved). The other domains, such as psychology, defecation, and overall health quality of life (HF-QoL), also showed considerable improvement following surgery, corroborating the positive impact of surgery on overall quality of life.

Table 6. Assessment of Short Form Health Survey (SF-36) Domains for Urological Patients Before and After Hemorrhoid Surgery (Mean \pm SD).

Domain	Pre-op Mean \pm SD	Post-op Mean \pm SD
Physical Disorders	70.2 ± 10.5	85.4 ± 8.1
Psychology	68.0 ± 12.3	82.0 ± 9.5
Defecation	60.5 ± 14.0	90.3 ± 6.8
Sexuality	50.4 ± 15.6	80.0 ± 10.0
Overall HF-QoL	64.0 ± 13.5	86.6 ± 7.2

Table 7. Assessment of Urological Symptoms Before and After Hemorrhoid Surgery (Mean \pm SD) using International Prostate Symptom Score (IPSS).

Symptoms	Pre-op Mean \pm SD	Post-op Mean \pm SD
Dysuria	3.4 ± 1.1	1.2 ± 0.5
Hematuria	2.5 ± 1.4	0.9 ± 0.3
Frequency	3.0 ± 1.2	1.0 ± 0.4
Urgency	3.1 ± 1.5	1.3 ± 0.6
Nocturia	2.8 ± 1.3	0.8 ± 0.4
Incontinence	2.0 ± 1.0	0.5 ± 0.2
Retention	2.3 ± 1.1	0.7 ± 0.3
Flank Pain	2.6 ± 1.6	0.6 ± 0.3

Table 7 presented the comparative analysis of the urological symptoms according to the International Prostate Symptom Score (IPSS). The significant reduction in scores for the various symptoms indicates effective relief from urological pain following surgery. For example, dysuria decreased from 3.4 ± 1.1 to 1.2 ± 0.5 , indicating an excellent change in patient-reported outcome. Frequency, urgency, and nocturia all improved significantly after surgery, showing the potential of hemorrhoid surgery to ameliorate urological symptoms in patients who have such symptoms. These results show the potential of surgery not only in curing hemorrhoidal disease but also in urological symptoms associated with it.

Table 8. Chi-Square Test Analysis.

Variable	Result
Hemorrhoid & Urological Symptoms	$p < 0.01$
Surgeries & Complications	$p < 0.05$
Age and BMI & Complications	$p < 0.01$
Anesthesia & Pain	$p < 0.03$
Retention & Man	$p < 0.02$

The results of the Chi-Square Test analysis in Table 8 explained the correlations between the various variables. There was a significant correlation ($p < 0.01$) between urological and hemorrhoidal symptoms, which corroborates the fact that the management of one will positively influence the other. The correlation between the surgical techniques and complications ($p < 0.05$) explains the importance of technique selection in minimizing

the side effects. The other significant correlations include age and BMI and complication rate ($p < 0.01$), and the effects of anesthesia type on postoperative pain ($p < 0.03$).

Univariate analysis (Table 9) identifies significant risk factors for long-term health outcomes. Increasing odds ratio (OR) of 1.05 for every year of age shows that the older the patient, the more at risk they are for poor outcomes. Those with a BMI ≥ 28.0 were at significantly more risk (OR = 2.00) for complications, suggesting that weight control may be important preoperatively. Notably, smoking history and urinary retention were both predictive factors (OR = 1.75 and OR = 2.10, respectively) for unfavorable outcomes, and this should signal targeted interventions for these high-risk groups.

Table 9. Univariate Analysis of Risk Factors Affecting Patients' Long-term Health (OR and 95% CI).

Risk Factor	OR	95% CI
Age (per year)	1.05	1.02 - 1.08
BMI ≥ 28.0	2.00	1.12 - 3.56
Urological symptoms	1.45	0.81 - 2.58
Hypertension	1.32	0.74 - 2.34
Smoking History	1.75	1.03 - 2.99
Pain	2.04	1.12 - 4.70
Urinary retention	2.10	1.05 - 4.18
Hemorrhoid Grade	2.17	1.02 - 3.66

4. Discussion

Hemorrhoidal disease prevails in the general population, particularly among patients with associated urological symptoms. Given that Hemorrhoids can be a cause of discomfort and even exacerbate lower urinary tract symptoms (LUTS), the present study aimed to outline the impact of hemorrhoid surgery on such symptoms. Previous research had indicated a potential coincidence of the prevalences of hemorrhoids and urological diseases such as benign prostatic hyperplasia (BPH) and prostatitis [20]. Our findings show that surgical relief of hemorrhoids can have an ancillary advantage of alleviating LUTS, a correlation observed in similar research [21].

Post-operative outcomes in our study were evaluated, and it revealed a significant reduction in urological symptoms post-hemorrhoid surgery ($p < 0.05$). This finding is consistent with results reported by the England study [22], wherein patients undergoing simultaneous treatment of anal and urological pathology were found to have better overall satisfaction along with improvement of symptoms.

Quality-of-life questionnaires after surgery revealed a considerable impact of patient-reported outcomes, namely domains of everyday living, negatively affected by hemorrhoidal and urologic diseases. Using standard questionnaires (i.e., the International Prostate Symptom Score (IPSS) and the Short Form Health Survey (SF-36)), we saw statistically significant differences in the domains of pain and physical functioning. These findings corroborate earlier work by a Chinese study, where the interrelatedness of gastrointestinal and urinary disorders was noted and consideration of a holistic approach in treating patients was advocated.

5. Conclusion

Surgery to hemorrhoids not only can be exerting urological patients differently in a positive or negative sense but also alter the quality of life and symptoms of the anus, and present risks like urinary retention, pain, and potential impact on sexuality. Our study comprised a group of 98 patients with extreme male prevalence (71.4%), with the majority of them between 41 and 50 years (38.8%). However, anal manometry results revealed dysfunction, with over half of the subjects having decreased maximal resting and squeezing pressures. Even more surprising, 81.6% of the patients achieved postoperative defecation within five minutes, validating the effectiveness of surgery. Postoperative

complications was relatively low at 33.67%, with urinary retention being the most common at 14.29%. Physical disorders improved from 70.2 to 85.4, while general health-related quality of life rose dramatically from 64.0 to 86.6. A significant decrease in urological symptoms was observed after surgery. Symptoms of dysuria, urgency, and frequency were significantly improved. Men, the elderly, and those with higher BMI are at risk.

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