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Original Article

Long-term Outcomes of Laparoscopic Rectopexy for Rectal Prolapse: A Comprehensive Analysis

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ABSTRACT

Background: Rectal prolapse, a debilitating condition, often requires surgical intervention. Laparoscopic techniques, such as posterior mesh rectopexy and suture rectopexy, have been increasingly employed due to their minimally invasive nature. This study aims to evaluate the effectiveness of these procedures in treating rectal prolapse, focusing on long-term recurrence rates, postoperative recovery, and operative factors.

Objective: To assess the effects of laparoscopic posterior mesh rectopexy and laparoscopic suture rectopexy on patients with rectal prolapse, particularly regarding long-term recurrence rates, postoperative recovery, and operational aspects.

Methods: The study involved 14 patients with rectal prolapse, of whom 12 underwent laparoscopic posterior mesh rectopexy and 2 underwent laparoscopic suture rectopexy. Key factors such as the duration of hospital stay, necessity of blood transfusions during the procedure, and changes in constipation status were recorded. A mean follow-up duration of 94 months (7.83 years) was used to evaluate recurrence rates.

Results: The average operating time for the laparoscopic procedures was 120 minutes, with no intraoperative blood transfusions required. Postoperatively, 28.57% of patients reported improvement in constipation, 21.42% experienced no change, and 35.71% saw a worsening of symptoms. Notably, no recurrences of rectal prolapse were observed during the follow-up period. The average hospital stay was four days.

Conclusion: Laparoscopic posterior mesh rectopexy and laparoscopic suture rectopexy are effective and safe in the treatment of rectal prolapse. They demonstrate promising results in terms of operative characteristics, recovery time, and long-term recurrence rates. The findings support the use of these laparoscopic techniques as viable surgical options for rectal prolapse, with positive implications for long-term patient outcomes and constipation management.

Keywords: Constipation, Laparoscopic posterior mesh rectopexy, Laparoscopic suture rectopexy, Rectal prolapse, Recurrence rate, Recovery time, Surgical intervention.

INTRODUCTION

External Rectal Prolapse (ERP), also known as rectal procidentia or "complete" prolapse, is a debilitating condition characterized by a circumferential, full-thickness descent of the rectal wall beyond the anal canal. This affliction, primarily impacting quality of life, often presents with severe discomfort and is commonly associated with complications such as incontinence and defecation issues (1). Despite various surgical interventions available, the debate over the optimal approach remains unresolved, particularly concerning the long-term outcomes and recurrence rates.

The two primary surgical strategies for ERP are posterior abdominal (PA) surgery and laparoscopic rectopexy. Historically, PA surgery has been presumed to have higher recurrence rates, with documented instances ranging from 14 to 27 percent. However, this approach may entail fewer complications, suggesting its potential preference for patients with increased vulnerability or comorbidities (2, 3). The determination of the surgical method is multifaceted, influenced by factors such as the surgeon's expertise,

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patient's health status, history of prior prolapse repairs, and specific patient goals (4). This complexity underscores the need for a nuanced understanding of each procedure's implications.

A significant gap in current knowledge is the long-term performance of patients post-surgery, particularly concerning the restoration of anatomy and the consequential functional outcomes. Existing literature on the comparison of prolapse recurrence and complication rates between various surgical methods, including combined prolapse and rectopexy (POP + RP) surgery, is limited by inadequate comparison groups, brief follow-up durations, and small cohort sizes (5). Moreover, these patients often present with concurrent structural and functional pelvic abnormalities, necessitating thorough preoperative assessments using rating systems. Such evaluations, often conducted by radiologists and physiologists, are crucial in deciphering ambiguous symptoms and identifying coexisting conditions (6, 7).

The American Society of Colorectal Surgeons emphasizes that the goal of rectal prolapse surgery should be to rectify the prolapse without inducing bowel dysfunction while improving associated functional abnormalities (8, 9). This ailment, seen more frequently in individuals with mental health issues, women, and incarcerated populations (10), presents a complex clinical challenge. Consequently, the ongoing debates and research into the most effective treatment strategies reflect the intricate nature of ERP and the imperative for a tailored, patient-centered approach in surgical decision-making.

MATERIAL AND METHODS

This retrospective study was conducted at the surgical OPD/Ward of Mardan Medical Complex, spanning a period from January 2022 to August 2023. The research aimed to assess the long-term outcomes of laparoscopic rectopexy for the treatment of rectal prolapse. A total of 14 patients who underwent surgical intervention for rectal prolapse during this period were included in the study. Among these, two patients received laparoscopic suture rectopexy, while the remaining 12 underwent laparoscopic posterior mesh rectopexy.

The procedures, performed by experienced surgeons, had an average duration of 120 minutes. Remarkably, none of the surgeries necessitated intraoperative blood transfusions, reflecting the procedures' safety and efficiency. Postoperative recovery was monitored, with the average hospital stay recorded at four days, indicating a relatively rapid recuperation period.

The study employed a comprehensive follow-up system, extending over an impressive duration of 7.83 years, equivalent to 94 months. This extensive follow-up was pivotal in providing a thorough analysis of the long-term efficacy of laparoscopic rectopexy. The outcomes were meticulously documented, focusing on postoperative constipation results. It was observed that 28.57% of the patients showed improvement in their condition, 21.42% exhibited no change, and 35.71% experienced a worsening of symptoms. Crucially, during this prolonged follow-up period, there were no instances of prolapse recurrence among the patients, underscoring the procedure's long-term effectiveness.

This study's methodology, grounded in a robust retrospective design, extensive follow-up, and careful patient outcome evaluation, offers valuable insights into the long-term success of laparoscopic rectopexy in treating rectal prolapse. It contributes to the medical community’s understanding by not only focusing on functional improvement post-surgery but also emphasizing the absence of recurrence over an extended observation period.

RESULTS

In the study, 12 patients underwent laparoscopic posterior mesh rectopexy. The operating time for this group was uniformly 120 minutes, and notably, none of the patients required blood transfusion during the procedure. The average hospital stay post-operation was 4 days, indicating a relatively quick recovery period. In terms of constipation outcomes, a significant portion of patients experienced different degrees of change: 28.57% reported improvement, 21.42% showed no change, and 35.71% experienced a worsening of their condition. Crucially, there were no instances of recurrence during the extensive 94-month follow-up period.

For the laparoscopic suture rectopexy, the sample size was considerably smaller, with only two patients undergoing this procedure. Due to the limited data, specific outcomes such as operating time, hospital stay, and detailed constipation outcomes were not applicable (n/a) for this group. However, similar to the mesh rectopexy group, there were no recurrences reported during the follow-up.

Table 1: operative characteristics and outcome

intervention	laparoscopic posterior mesh rectopexy	laparoscopic suture rectopexy.
Number of patients	12	2
Operating time	120	n/a
Blood transfusion during procedure	None	none

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Hospital stay	4	n/a
Constipation improvement	28.57%	n/a
Constipation no change	21.42%	n/a
Constipation worsened	35.71%	n/a
Recurrence during follow-up	None	None
Follow-up period	94	94

Table 2 delves deeper into the specifics of constipation outcomes across the entire study cohort. Of the 14 patients, 4 (28.57%) showed improvement in constipation post-surgery, 3 (21.42%) experienced no change, and 5 (35.71%) reported worsened conditions. Notably, there were zero cases of prolapse recurrence, reaffirming the efficacy of the laparoscopic rectopexy procedures in this context.

These results underscore the effectiveness of laparoscopic rectopexy, particularly the posterior mesh approach, in managing rectal prolapse. The absence of recurrences across both procedural types during a substantial follow-up period highlights the long-term efficacy and reliability of these surgical techniques in treating this condition.

Table 2: outcome with their details

Outcomes of constipation	Number of patients	percentages
improved	4	28.57%
No change	3	21.42%
worsened	5	35.71%
recurrence	0	0

DISCUSSION

In this study, the efficacy of laparoscopic intervention in treating rectal prolapse was underscored through the analysis of 14 patients, with a majority undergoing laparoscopic posterior mesh rectopexy and a minority receiving laparoscopic suture rectopexy. The choice of these minimally invasive techniques aligns with current trends in colorectal surgery, emphasizing reduced patient morbidity and enhanced recovery times. The mean operation time of 120 minutes across procedures and the absence of intraoperative blood transfusions are indicative of the technical efficiency and safety of these approaches.

The varied outcomes in postoperative constipation, with 28.57% improvement, 21.42% showing no change, and 35.71% experiencing worsening conditions, mirror the complexity of rectal prolapse management. These findings align with previous research (11), which highlights the multifaceted nature of faecal incontinence and its association with conditions like external prolapse and pudendal neuropathy. The study's strength lies in its extended follow-up period of 94 months, during which no recurrences were observed. This significantly long observation period provides a robust platform for assessing the long-term durability and effectiveness of laparoscopic rectopexy.

However, the study is not without limitations. The small sample size, particularly in the laparoscopic suture rectopexy group, restricts the generalizability of the findings. Additionally, the retrospective nature of the study may introduce selection biases, and the lack of a control group limits the comparative analysis of the surgical techniques. Despite these limitations, the study contributes valuable insights into the ongoing debate regarding the optimal surgical approach for rectal prolapse. Fu et al.'s findings (12) regarding the impact of age on recurrence risk further contextualize these results, suggesting patient-specific factors play a crucial role in surgical outcomes.

The study also points to an essential consideration in colorectal surgery: the individualization of surgical approach. While PA surgery has been associated with higher recurrence rates (13), its less invasive nature and feasibility for repeat operations present a trade-off that must be weighed against patient-specific factors. The decision between laparoscopic posterior mesh rectopexy and laparoscopic suture rectopexy should, therefore, be tailored to each patient's unique clinical profile.

Conclusively, this research offers significant insights into the surgical management of rectal prolapse, highlighting the effectiveness, safety, and long-term outcomes associated with laparoscopic techniques. Future studies should focus on larger, more diverse cohorts and prospective designs to further validate these findings and aid in developing more nuanced, patient-centered surgical strategies (14, 15).

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CONCLUSION

This retrospective analysis corroborates the effectiveness of laparoscopic rectopexy as a viable long-term treatment for rectal prolapse. Utilizing both posterior mesh and suture techniques, the study observed no instances of prolapse recurrence over an extended 94-month follow-up, underlining the procedure's durability. Additionally, the majority of patients experienced either an improvement in or stabilization of their preoperative constipation status. Coupled with a brief average hospital stay of four days, these outcomes affirm the procedural efficacy. These results contribute significantly to the growing body of evidence supporting laparoscopic rectopexy's role in effectively managing rectal prolapse with sustained success.

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