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Review Article

Rectal Prolapse

Surgical Management of Rectal Prolapse - Review Article

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Abstract: Rectal prolapse procidentia is an intussusception of the whole rectal wall through the anal canal, resulting in a portion of the rectum staying periodically or occasionally permanently distal to the anus. Full-thickness prolapse and partial-thickness prolapse are the two kinds of rectal prolapse. Rectal prolapse procidentia is an intussusception of the whole rectal wall through the anal canal, resulting in a portion of the rectum staying periodically or occasionally permanently distal to the anus. It is more frequent in older females. Rectal prolapse was first recorded on papyrus circa 1500 BC. Hippocrates described rectal prolapse therapy as hanging patient's upside down from a tree, putting sodium hydroxide to the mucosa, and fixing for three days. Today, is mostly treated surgically. Perineal surgical repairs are typically well tolerated; however, they are linked with a greater incidence of recurrence. Abdominal repairs, however, have the lowest recurrence rates. The goal of therapy is to remove the prolapse, cure any related incontinence or constipation issues, and avoid de novo bowel dysfunction. When compared to laparotomy, laparoscopic rectopexy offers fewer side effects, a shorter hospital stays, faster healing, and quicker return to work. This review aims to assess recent updates on different surgical approaches for management of rectal prolapse.

Keywords: Surgery, Rectum, Rectal, Prolapse, GIT

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1. INTRODUCTION

Rectal prolapse procidentia is an intussusception of the whole rectal wall through the anal canal, resulting in a portion of the rectum staying periodically or occasionally permanently distal to the anus. The latter is referred to as third degree prolapse, whereas the former is referred to as second degree[1]. It is more frequent in older females. Full-thickness prolapse and partial-thickness prolapse are the two kinds of rectal prolapse. Complete denotes a protrusion of the whole rectum layer to the exterior of the anus, resulting in concentric folds. Incomplete prolapse, also known as occult rectal prolapse or internal rectal intussusception, is a disorder in which the projecting rectal wall is restricted to the inside of the anal canal. Mucosal prolapse is frequently mistaken with rectal prolapse in clinical practise. Mucosal prolapse is a protrusion of a section of the rectal wall or merely the anal mucosa, rather than the whole layer of the rectal wall. It's important to distinguish it from rectal prolapse because the surgical therapies aren't the same [2]. The anatomical foundation for a rectal prolapse was identified by Moschcowitz around the turn of the century as a defective pelvic floor through which the rectum herniates. According to this explanation, the patient had to strain excessively to evacuate due to a superfluous sigmoid colon sitting within the deep pelvic sac and the accompanying acute rectosigmoid junction. Thus, the final prolapse was the result of herniation through the weaker pelvic floor, according to the theory. The latter theory proposed that rectal prolapse was actually a 2° or 3° circumferential intussusception. Complete circumferential intussusception begins 6–8 cm from the anal margin and can progress through the anal canal [1, 3-5]. Rectal prolapse was first recorded on papyrus circa 1500 BC. Hippocrates described rectal prolapse therapy as hanging patients upside down from a tree, putting sodium hydroxide to the mucosa, and fixing for three days. Other remedies were recommended in mediaeval times, such as utilising a scar formed by burning the anus or using a stick to prevent rectal prolapse. Rectal prolapse was investigated scientifically in the twentieth century, although the cause and therapeutic procedures have yet to be determined. Rectal prolapse can be treated surgically in a variety of ways [2]. Rectal prolapse is mostly treated surgically. Perineal surgical repairs are typically well tolerated; however, they are linked with a greater incidence of recurrence. The rectum is attached to the sacrum by mesh or sutures in abdominal repairs, which have the lowest recurrence rates. A sigmoid resection can be done at the time of rectopexy if there is considerable preoperative constipation. After surgery, many patients' diarrhoea and incontinence improve. The morbidity and recurrence rates of laparoscopic rectal prolapse correction are comparable to those of open surgery, with the added benefits of a shorter hospital stay, less postoperative discomfort, and fewer wound problems[6]. The goal of therapy is to remove the prolapse, cure any related incontinence or constipation issues, and avoid de novo bowel dysfunction. The rectum can be fixed to the sacrum and/or the superfluous bowel can be resected or plicated to attain this purpose. Transanal/perineal or transabdominal approaches are both possible. Although abdominal surgeries appear to have lower recurrence rates than perineal procedures, a comprehensive Cochrane database analysis in 2015 found no significant difference in recurrence rates between the two techniques after comparing 1,007 participants in 15 randomized controlled trials. Perineal treatments eliminate the need for a laparotomy and may result in a decreased surgical risk. They may be better for high-risk individuals, albeit there is no conclusive research to back this up. [7]

2. EPIDEMIOLOGY

The incidence of rectal prolapse has been reported to be around 2.5 per 100,000 populations, as reported in previous studies. In 2005, a study found that the type of patients who presented with rectal prolapse were consistent with expected clinical profiles. The patients were mostly elderly women who frequently complained of constipation, diarrhea or incontinence. In addition, 15% of patients had concomitant psychiatric illness. [8]

3. ETIOLOGY AND PATHOGENESIS

It is not clear exactly what causes rectal prolapse. Certain factors have been observed at the time of surgical repair and have, therefore, been proposed to have an etiologic role. Internal intussusception, an internal prolapse that does not come through the anal canal, may be a predisposing factor for some patients and can be detected by defecography. In addition, patients frequently have a deep pouch of Douglas, redundant sigmoid colon, deficient fixation of the rectum to the sacrum, weakness of the pelvic floor and a patulous anus. It is not clear which of the events are primary and which are secondary. As rectopexy operations designed to attach the rectum to the sacrum are an effective treatment for rectal prolapse, poor recto-sacral fixation becomes attractive as a pathogenic mechanism. [9]

4. CLINICAL PRESENTATION

The most common symptom for patients with rectal prolapses is the sensation that something is sticking out of their anus. The prolapse is uncomfortable and associated with incontinence and leakage of mucus as presented in (figure 1). Symptoms of constipation or diarrhea are common. Minor bleeding is also common and mainly results from abrasion of and minor trauma to the prolapsed rectum. [7]

Fig (1): A prolapsed rectum demonstrating concentric folds at the apex of the prolapse.

5. DIAGNOSIS

Rectal prolapse can be diagnosed readily in outpatient clinics by history taking and inspection of the protrusion shape. In cases of complete prolapsed, the rectal wall with mucosal congestion and edema is protruded to the anus by 8-15 cm. In cases of incomplete prolapse or occult prolapse, cinedefecography is of help. The funnel-shaped rectum is separated from the sacrum and excessively fluctuates, and during straining, it forms a ring-shaped pouch. In addition, in typical rectal prolapse cases, the long sigmoid colon and a deep pouch of Douglas are observed. Anorectal physiology tests, such as anal manometry, electromyography, or colonic transit time measurement, are also used. [14, 15]

6. ABDOMINAL METHODS

Suture Rectopexy is a procedure that comprises a full mobilization and upward fixation of the rectum, as initially described by Cutait in 1959. As adhesions develop, binding the rectum to the presacral fascia, the mobilization and subsequent repair via fibrosis tends to keep the rectum fixed in an elevated posture. There were no deaths reported, and recurrence rates varied from 0% to 27 percent. With the exception of one series with a 27 percent recurrence rate, the majority of studies reported recurrence rates ranging from 0% to 3%, with the majority of reports demonstrating an improvement in fecal continence. Constipation was influenced in many ways, with different research demonstrating improvement, worsening, or no effect on constipation. [10-13] Prosthetic rectopexy a unique surgery of rectopexy to the pelvic floor using prosthetic material combined with sigmoid resection was described in research by Lechaux JP, et al. where Thirty-five patients 30 women were operated on for full thickness rectal prolapse with normal pelvic floor, whose median age was 44 years. The rectum was pushed posteriorly without dividing the lateral ligaments and linked to the nonabsorbable meincontinent-repaired pelvic floor. There was no sign of a recurrence. Preoperatively, 33 patients 94% had constipation, mostly due to emptying issues 21 patients, while 25 patients 71.5% were incontinent. No constipated or incontinent patient's condition worsened after surgery. In 17 cases, rectal emptying was recovered 81 percent. Eighteen of the twenty incontinent patients 72% were able to restore complete continence. After Delorme's procedure, however, two patients with normal bowel function deteriorated and one patient with altered rectal compliance became incontinent. In young adults with rectal prolapse and a normal pelvic floor who underwent prosthetic rectopexy and sigmoid resection, morbidity was low, anatomical control was obtained in all cases, emptying problems were resolved, and deleterious effects were likely to occur if they had no constipation prior to the procedure or if rectal compliance had been previously altered. [16]

6.1 Resection

The notion of rectosigmoid resection is based on the fact that a thick region of fibrosis arises between the anastomotic suture line and the sacrum following low anterior resection, anchoring the rectum to the sacrum. Other benefits include 1 excision of the copious rectosigmoid, which prevents torsion or volvulus; 2 a straighter left colon with limited mobility from the phrenocolic ligament downward, which works as yet another fixative device; and 3 alleviations of constipation in a small set of patients. It's best for people who have a lengthy redundant sigmoid and a history of constipation. Sigmoid resection alone for rectal prolapse, on the other hand, has not been widely used and is only seen in research from before 1980.[10, 17-20]

6.2 Laparoscopic

Ripstein was the first to describe laparoscopic anterior mesh rectopexy in 1952. The graft is wrapped around the anterior rectal wall and sutured to the promontory when the rectum has been fully mobilized. This surgery has just two case reports employing a laparoscopic method. [7,21-23] When compared to laparotomy, laparoscopic rectopexy offers fewer side effects, a shorter hospital stay, faster healing, and quicker return to work. Suture or posterior mesh rectopexy, with or without resection, is used in this operation. It has gained popularity since it is very easy and straightforward to do, and it avoids resection with anastomosis. The mortality rate with

laparoscopic rectopexy was between 0% and 3%, with recurrence rates ranging from 0% to 10% after an average of 8 to 30 months of follow-up. These investigations have shown that this procedure is just as successful as the open method in treating rectal prolapse, with the effect on continence and constipation varying depending on the type of rectopexy performed. [10]

*6.3 **Rectopexy with lateral mesh laparoscopically***

The rectum was completely mobilised using two mesh strips that were sutured laterally to the rectal wall on both sides and suspended to the promontory. This method has been studied utilising a laparoscopic approach in various research. In 35 patients, Lechaux et al. conducted laparoscopic Orr-Loygue rectopexy. Incontinence improved in 27% of patients, whereas constipation improved in 19% of patients but worsened in 27%. After a mean follow-up of 36 months, the recurrence rate was 3% 1/35. After a year, a study of 46 patients who had a laparoscopic Orr-Loygue surgery with posterior mobilisation reported a substantial reduction in incontinence, but no changes in laxative usage. After a median follow-up of 1.5 years, the recurrence rate was 4%. [7,24-26]. Over a 10-year period, Ashari et al found a 2.5 percent recurrence rate in 117 patients treated with laparoscopic rectopexy, with a low morbidity rate of 9% and a 0.8 percent fatality rate. The Cleveland Clinic's experience with the laparoscopic method was described by Kariv et al. There were 111 laparoscopic and 86 open surgeries in this case-match study. The laparoscopic group had a shorter stay in the hospital 3.9 vs 6 days. The laparoscopic group had a 9.7% recurrence rate compared to 4.7 percent in the open group. The difference isn't significant statistically [27-29]. The rectum is completely mobilised down to the level of the levator muscles using laparoscopic suture rectopexy. Suture or staples are then used to secure the rectum to the sacral promontory. Scarring and fibrosis are caused by the posterior dissection, which retains the rectum in an elevated posture. There was no reported mortality in the literature evaluated, and recurrence rates ranged from 0% to 12%, with the majority of studies demonstrating an improvement in faecal incontinence. The effects of LSR on constipation were mixed, with different trials suggesting improvement, aggravation, or no effect. Constipation that started suddenly was observed in 0% to 17% of patients. The lateral ligaments' division of efferent nerves and consequent autonomic denervation may be to blame for worsening or new onset constipation. The findings of rectal mobilisation with little dissection of the lateral rectal ligaments were published by Liyanage et al., who found a 7% recurrence rate and no worsening of constipation. [7,30]

7. PERINEAL METHODS

Perineal operations have the benefit of avoiding laparotomy, making them ideal for high-risk patients. The Delorme surgery and perineal rectosigmoidectomy are two common perineal operations Altemeier operation. The Thiersch treatment, which encircles and therefore narrows the anal canal, does not eliminate prolapse; rather, it only keeps it from progressing further by providing mechanical support, and as a result, it is linked with a high recurrence rate 33 percent -44 percent. There is no need for it, given the safety of contemporary anaesthetic procedures[10]. Sigmoid colon-rectal resection perineal Altemeier procedure In the United States and Europe, the perineal technique is recommended. The rectum is resected 2 cm above the dentate line, and the sigmoid colon's mesentery is adequately pulled, ligated, and resected. Anastomosis is done using hand sewing or staples. An anterior levatoplasty is done at the same time to prevent faecal incontinence. The rate of complications is less than 10%, with the most common complication being a suture line haemorrhage. Suture failure can cause a pelvic abscess, which is uncommon. Recurrence was recorded in three of the 106 patients treated by Altemeier. However, the recurrence rate is stated to be 16-30% in the literature. [2] The Delorme Method The dissection lies within the submucosal layer, unlike the perineal rectosigmoidectomy. Before the anastomosis, the mucosa and submucosa are removed, and the denuded muscularis is longitudinally pleated[1]. The Delorme treatment involves peeling off the herniated rectal mucosa, plicating the exposed rectal muscle layer, and suturing the anorectal mucosa. Hemorrhage, hematoma, wound dehiscence, and stenosis have all been recorded as problems. The mortality rate is 0-4 percent, while the rate of recurrence is 4-38 percent. Because the rectum is not attached to the sacrum after surgery, a significant recurrence incidence has been documented when compared to other treatments. This treatment may be conducted very securely since it does not need accessing the abdominal cavity; consequently, it can be used on older high-risk patients. The effectiveness of the plicated muscle ring in controlling faeces is still debated. Inadequate resection of the rectal mucosa is one of the causes of recurrence, however there is no consensus on the ideal mucosa resection length. [2]

8. CONCLUSION

Because recurrence rates are lower and continence is more likely to be regained than after other surgeries, an abdominal surgery ideally resection rectopexy is the therapy of choice. Perineal surgeries, while having a greater recurrence rate, are also far less invasive. These procedures are ideal for older individuals with comorbidities for whom an abdominal approach would provide an unacceptably high surgical risk. The surgery must be tailored to the patient, taking into account morbidity, function, and recurrence.

AUTHORCONTRIBUTION STATEMENT

All the authors read and approved the final version of the manuscript.

9. CONFLICT OF INTEREST

Conflict of interest declared none.

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