Incacerated Large Rectal Prolapse Repaired By Delorme Procedure: A Case Report And Review Of The Literature.

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Incacerated Large Rectal Prolapse Repaired By Delorme Procedure: A Case Report And Review Of The Literature.

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Abstract

A case of an incarcerated (irreducible) large rectal prolapse for which the treatment of choice might traditionally have been an Altemeier’s procedure (perineal excision of the prolapse, coloanal anastomosis) and repair of the pelvic floor is reported. A technically- difficult Delorme’s procedure (rectal mucosal excision and plication of the prolapsed muscle wall) was performed in this situation, with an excellent immediate outcome. Delorme’s procedure is safe and effective even in large incarcerated rectal prolapse. At 6 months, there was no recurrence of the rectal prolapse and continence much improved.

KEYWORDS: rectal prolapse, treatment, Delorme, Altemeier, abdominal resection, rectopexy
Introduction

Complete rectal prolapse arises from intussusception of the mid rectum through the anal orifice. In a large rectal prolapse the anterior part of the prolapse contains a peritoneal sac, a prolongation of the pouch of Douglas, constituting a sliding hernia of the anterior rectal wall through the anal canal, and in many cases a mobile mesorectum [1]. In the majority of patients, rectal prolapse is associated with weakness of the pelvic floor musculature which can be shown from electrophysiological studies to be due to a pudendal neuropathy and thought to be the result of stretching the nerves during labour or from excessive straining at defaecation [2]. There is often associated urogenital prolapse such as cystocele or rectocele as the rectovaginal septum may be atrophic and the perineal body deficient [3]. The majority of male patients are from tropical countries owing to an association with schistosomiasis and amoebic dysentery [4]. Rectal prolapse is a problem in defaecation disorders such as solitary ulcer syndrome, some cauda equina lesions, demyelinating diseases, connective tissue disorders (Marfan and Ehler-Danlos syndromes) and a history of anorexia nervosa [5-7]. The latter results from poor cross-linking of collagen fibres in the pelvic floor musculature during adolescent years.

The diagnosis is made on examination. Rectal examination may reveal loss of the normal anorectal angle due to a lax puborectalis, and proctosigmoidoscopy may exclude an organic cause such as tumour. Children with rectal prolapse are treated conservatively since the curvature of the sacrum and rectum develops with growth and the prolapse generally spontaneously regresses [2-4]. Treatment of full-thickness rectal prolapse may be classified into those that attempt to support the sphincter and pelvic floor and those that aim to reduce rectal mobility. The former include anal canal encircling devices and various forms of perineal repair. The latter include resection of sleeve of redundant rectal mucosa and plication of the prolapsed rectal wall (Delorme’s procedure) or excision of redundant rectum (Altemeier’s perineal proctosigmoidectomy) or rectal fixation (rectopexy) [8-13]. Pelvic floor repair or levatorplasty may be used in conjunction with perineal procedures to treat symptoms of incontinence [14]. The Delorme’s procedure has low morbidity and mortality and minimal impact on continence and bowel function. The choice of procedure should take into account age, gender, comorbidity, sexual activity, the presence of concurrent genital prolapse, preoperative constipation, evacuatory difficulties, faecal incontinence, and any history of pelvic floor injury [3,15]. Assessment of the long-term outcome for any procedure for rectal prolapse is complicated by the short life expectancy of these elderly patients and the difficulty in achieving accurate follow-up [16].

Case Presentation
A 64-year-old male African farmer was admitted in hospital with a 1 month history of a progressively painful and irreducible rectal prolapsed (Figure 1). This was associated with obstructive defaecation and incomplete bowel emptying. The patient gave a history of 10 years of constipation, straining at stool, and passage of hard, pellet, ‘goat-like’ stool. He had developed a rectal prolapse five years ago which he repeatedly manually reduced until an anal encircling procedure was performed 1 year prior to presentation. A few months after repair the prolapse recurred and had been managed conservatively until this presentation. He consumes 4-6 units of alcohol/day. In the past he had a left indirect inguinal hernia repaired which has also recurred.

On examination he was frail, appeared malnourished, and was in great distress from the rectal prolapse. For comfort, he needed to lie on his side. He also had a reducible left inguino-scrotal hernia. His vital signs were normal. He had no pallor nor stigmata of chronic liver disease. The anal encirclement device had been removed and there was a full-thickness rectal prolapse identified by circumferential protrusion of the rectal wall through the anus with punctate mucosal erosions (Figures 1,2). He had a mild increase in perineal descent with a patulous anus. His haemoglobin level was 13g/dl. He consented to the advice of a trial of a perineal repair (Delorme) and informed of the possibility of conversion into an excision of the prolapse (Altemeier) or an abdominal rectopexy. Under general anaesthesia, in the lithotomy position, the large prolapse measuring 10cm by 8 cm was irreducible (Figure 2). The incarceration was associated with loss of the sulcus between the prolapse and the edge of the anal canal. A rigid proctosigmoidoscopy confirmed an intussusception of the rectum but no organic cause such as a tumour or polyp or an associated solitary rectal ulcer. A rectal mucosa sleeve excision was commenced 2cm proximal to the dentate line and away from prominent distal congested and dilated submucosal veins. Haemostasis was achieved with electrocautery and the intermittent submucosal injection of diluted adrenaline (1: 300,000). The dissection proceeded with scissors circumferentially until the apex of the intussusception (Figure 3). The procedure was made more difficult by the continuing anterior protrusion of the pouch of Douglas, containing loops of small bowel with each episode, of raised intra-abdominal pressure. The redundant mucosal sleeve was excised and the redundant prolapsed rectal muscular wall was plicated from the cut distal mucosal end to the proximal cuff of mucosa at the apex of the intussusception using 2-0 polyglactin 910. Care was taken not to puncture the herniating coils of intestine in the pouch of Douglas anteriorly especially as the rectal muscular wall was thin and atrophic. The plicating sutures were tied following reduction of the prolapse. The repeated increase in intra-abdominal pressure became a test for a successful reduction. Further sutures were inserted using the endoanal technique with the aid of an Eisenhammer retractor. The operation took 150 minutes and blood loss was less...
than 200ml. Postoperatively there was little pain and the patient was prescribed a laxative (lactulose). He had three bowel movements of bulky, soft stool the following day. There was mild passive incontinence to a loose stool but his anal tone (rest and squeeze) gradually improved over the next few days with no perineal descent (Figure 7). He was discharged on the fifth post operative day and advised an increased fibre diet to avoid constipation. Long-term follow-up was planned and at 6 months, there was no recurrence of the rectal prolapse and continence was much improved.

Discussion

The diagnosis of rectal prolapse is obvious but in some cases it may be missed unless the patient is asked to strain vigorously. It is mostly associated with constipation and anal incontinence. The constipation being attributed more to difficult evacuation than to impaired bowel action [17]. Few investigations for rectal prolapse other than that of sigmoidoscopy in the elderly are necessary to exclude a coexisting colorectal pathology. Although it may difficult to perform due to the lax anal sphincter preventing the retention of air or barium, a barium enema or colonoscopy may be useful in recurrent prolapse to exclude a redundant sigmoid loop causing constipation and prolapsed [18,19]. Videoproctography (defaecography) may show an obtuse anorectal angle, a short anal canal, and an excessive pelvic floor descent at rest or on straining. These findings may identify the group of patients who are likely to remain incontinent after rectopexy [20]. The choice of surgical approach is largely influenced by the preference of the surgeon as well as patient factors including comorbidity, associated urogenital prolapse, preoperative constipation, evacuatory difficulties, faecal incontinence and any history of pelvic floor injury [21]. Prior to the adaptation of laparoscopy in colorectal surgery, generally most surgeons tended to prefer perineal procedures for elderly or frail patients and abdominal approaches for fit patients irrespective of age [15,22,23]. Men tended to be offered perineal procedures in view of the potential for erectile dysfunction from rectal mobilisation during abdominal approaches [21]. Anal encircling device procedures for reducible prolapse have completely disappeared from current practice owing to the poor results achieved [9]. Delorme’s procedure is well tolerated systematically, can be carried out under local anaesthesia if necessary. There may be early local complications including constipation, loss of anal sensation, incontinence, and secondary haemorrhage. Patients often have long-standing functional bowel disease and may have an erratic bowel habit for some time postoperatively. Anal sensation recovers after several weeks and incontinence improves with time [22]. Male patients with prolapse usually have normal continence and pelvic floor function. This patient’s rectal prolapse was associated with obstructive defaecation and not incontinence, so a concurrent post-anal repair was not
required. Late complications of Delorme’s procedure include stricture formation and recurrence. Recurrence rates are high, varying between 5% and 26.5% although the procedure may be repeated [24-26]. Although there are no objective data available, omission of detail such as the mucosectomy not performed as far proximally to the length of the prolapse, may be one reason for failure [11]. Altemeier’s procedure carries the potential complication of pelvic sepsis from anastomotic dehiscence, but is well tolerated even in the elderly [27]. The complication rates of Altemeier procedures are 12-14% with very low mortality. Improved continence in around one-half of patients and high rates of recurrent prolapse 10-16% have been reported in the largest published series [23]. Altemeier’s procedure (perineal proctosigmoidectomy) is the treatment of choice for gangrenous or incarcerated prolapse as it excises the prolapse with associated low morbidity, and avoids dissection above the pelvic floor with the risk of nerve damage or presacral bleeding [2,3]. It has been recommended for elderly patients deemed unfit for major abdominal surgery in this situation [13]. The main disadvantages include loss of the rectum with its reservoir capacity and the rare complication of ischaemia, particularly if there have been a previous colonic resection. When compared with abdominal resection rectopexy, both groups experienced significant postoperative morbidity, but symptoms of incontinence improved significantly in the abdominal resection rectopexy group [28]. Preservation of the lateral ligaments during rectal mobilization is associated with fewer postoperative defaecatory symptoms [29]. Laparoscopic approaches to abdominal rectopexy are as effective as open procedures, and may have benefits in terms of recovery times and lower morbidity [30]. Complications such as ureteral injury have been reported indicating the need for thorough training [31]. The recurrence rates reported are low with most below 10%, but most patients are elderly and long-term follow up was not an important issue. Recurrence in young patients was found in 20% at a median follow-up interval of 11 years [30]. Resection rectopexy has traditionally been recommended for patients who have both constipation and rectal prolapse but there is little evidence to support this practice [32,33]. These patients usually have a long redundant sigmoid loop and resection is usually performed in combination with suture rectopexy in view of the excess risk of infection if non-absorbable mesh is used for the rectopexy [34]. A sutured rectopexy is performed to the presacral fascia usually prior to bowel resection [35]. Anterior rectopexy fixes the middle and upper rectum to the sacral promontory, thereby preventing intussusception but the major drawback is bowel dysfunction presumably due to angulation and fibrosis anteriorly which may cause a constriction and stenosis [36-38].

Although for a large prolapse, particularly in the younger patient, abdominal rectopexy offers, a reasonably low chance of early recurrence, there is evidence from studies reporting longer follow-up that recurrence gradually increase with
time [39]. Prospective data now show that constipation can be induced by rectopexy, a complication that does not appear to follow perineal operations [40]. This difficult problem can be minimized by combining rectal fixation with sigmoid resection without endangering improvement in faecal continence [41].

The paucity of data, small sample sizes, and methodological problems resulted in lack of useful conclusions from meta-analysis of randomized controlled trials. There was no difference in recurrence rates between abdominal and perineal approaches in a Cochrane meta-analysis [42]. Age, gender, surgical technique, means of approach (open or laparoscopic) and method of rectopexy had no impact on recurrent rectal prolapse rate in a multicenter pooled analysis of 643 individual patients [43] The Delorme’s procedure should even be considered in the management of recurrent rectal prolapse if an initial resectional procedure failed [44,45]. The final results of the PROSPER (Prolapse Surgery: Perineal or Rectopexy) trial being initiated in the UK in 2001 is awaited [46].

Conclusions

There is no ‘best’ procedure for treatment of rectal prolapse. Each procedure should be tailored to the individual patient. The gradual increase of recurrence with time should be taken into account when judging the relative effectiveness of a procedure. The perineal approaches are less invasive and tolerated better by the elderly. It is hoped that refined perineal operations will reduce the need for abdominal operations in elderly and frail patients.

References

Figure 1. In prone position: Full thickness prolapse
Figure 2. In lithotomy position: Full thickness rectal prolapse with anterior herniation of pouch of Douglas
Figure 3. The prolapsing mucosa is dissected off the underlying muscle
Figure 4. Mucosa denuded atrophic rectal muscle wall awaiting plication
Figure 5. Excised redundant rectal mucosa
Figure 6. End of Delorme’s procedure (a patulous anus from a lax anal sphincter)
Figure 7. Day 5 post Delorme’s procedure.