Devadhar's operation for complete rectal prolapse: 25 years' experience

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Background: Numerous abdominal and perineal operations have been described for the treatment of complete rectal prolapse. We describe our results with Devadhar’s rectopexy, which avoids dissection in the presacral space and hence may be expected to have a low risk of sexual and urinary disturbances.

Methods: Case records of 72 consecutive patients (40 men), aged above 18 years, with complete rectal prolapse were reviewed. Results: The most complications observed was mucosal prolapse in 3 patients. None of the 40 men had erectile dysfunction or retrograde ejaculation after a median follow-up of 10 (range 3-48) months. No patient had disturbance in micturition. Two patients (2.7%) had recurrence of rectal prolapse. In four patients (8.5%), constipation persisted. Conclusion: Devadhar’s rectopexy for complete rectal prolapse was not associated with disturbances in sexual or micturition function, and low rates of recurrence of prolapse.

Surgical technique

Several abdominal and perineal operations have been described for the treatment of complete rectal prolapse. A laparoscopic approach has also been described recently. The abdominal procedures are associated with erectile dysfunction in men and micturition disturbances in women. Preoperative defecography studies have confirmed this finding. Rectal prolapse is also considered as a sliding hernia, with pouch of Douglas as a hernial sac; this however may be a result rather than the cause of rectal prolapse.

Devadhar’s rectopexy technique avoids dissection in the retrorectal space, reducing the likelihood of erectile or micturition dysfunction. We report our results with this operation in patients with rectal prolapse who were fit for abdominal operation.

Methods

We retrospectively analyzed case records of 72 consecutive patients (aged 19-65 years, median 34) who underwent Devadhar’s operation for complete rectal prolapse between June 1978 and May 2003. During this period, 94 patients aged above 18 years with complete rectal prolapse had been referred to our unit. Of these, 22 patients were excluded: 20 patients (all aged more than 62 years) who were unfit for abdominal surgery (ischemic heart disease 7, history of cerebrovascular accident 3, chronic renal failure 3, chronic obstructive pulmonary disease 3, hemiplegia 2, and cirrhosis of liver 2) were treated by Thiersh’s stitch, and two patients with irreducible prolapse underwent perineal proctosigmoidectomy. A detailed history, including that of bowel habits, urinary function, and of erectile function in men, was taken. Patients were examined in left lateral position before and after straining in squatting position. Thirteen patients had constipation and none had fecal incontinence.

Surgical technique

Patients received a liquid diet for 48 h before surgery and a simple enema on the evening before surgery. The surgery consisted of three main stages: (a) excision of the pouch of Douglas in women and of the retrovesical space in men; (b) induction of retrograde intussusception of the rectum, maintained by a purse-string suture on the anterior and lateral walls of the rectum, and reinforced by longitudinal plicating sutures; and (c) reperitonealization leading to obliteration of the pouch of Douglas in women and retrovesical space in men. It was done under spinal anesthesia in 65 patients and under general anesthesia in 7 patients.

With the patient in supine position with a 30-degree Trendlenberg tilt, a subumbilical left paramedian transperitoneal incision was taken. A transverse incision was made in the posterior peritoneum between the two pelvic brims across the posterior surface of the bladder in men and cervix in women, and the peritoneum of the rectovesical pouch was excised.

Using a forceps, the anterior rectal wall was pushed inward and downward towards the anus to simulate a prolapse (intussusception). The point from which maximum prolapse could be initiated was marked with a seromuscular stitch as the ‘crucial point’ (Figs 1a and 1b). A circular, seromuscular, purse-string, 1-0 polypropylene suture was taken on the anterior and lateral walls of the rectum, keeping the crucial point at its center, the radius being the distance between the crucial point and the...
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lowermost point on the deperitonealised anterior rectal wall. The stitch started at 12 o’clock position on the anterior rectal wall above the crucial point, extending downward and laterally to reach the 3 o’clock position on the posterior border of the left lateral wall of the rectum at the level of the crucial point. The stitch was then turned downward and medially towards the 6 o’clock position below the crucial point, and then upward and laterally to reach the 9 o’clock position on the posterior border of the right lateral wall. From here, the direction was changed to complete the purse string at the starting point at 12 o’clock position (Fig 1c).

The purse string was used to maintain reverse intussusception of the rectum. Three mixters were applied in the middle of the circle formed by the purse string at the level of the crucial point, the central mixer holding the crucial point. An assistant pushed the rectal wall within the purse-string suture inward into the lumen and upward, producing a retrograde intussusception of the rectum, while the surgeon tightened the suture (Figs 2a and 2b). Four to five longitudinal seromuscular plicating sutures were taken, starting above the tightened purse string and going as low as possible on the anterior and lateral surfaces of the rectum. The sigmoid colon loop was pushed into the pelvis and reperitonealisation was done with 2-0 chromic catgut in the initial 28 cases and 2-0 polyglyactin sutures in the latter 44 cases, so that the pouch of Douglas or rectovesical pouch was obliterated.

Oral intake was started as soon as peristalsis returned. A contact laxative was prescribed for 4 weeks. A check sigmoidoscopy was done after 4 weeks. Outcome measures were: operative time, return of peristalsis, hospital stay, and complications with reference to wound infection, constipation, incontinence, sexual and micturition dysfunction, and recurrence of prolapse. At follow up, all patients were asked about defecatory and micturition functions; men were also asked about erectile function. Patients were examined in the left lateral position and while straining in the squatting position.

Results

The median operative time was 85 (range 70 to 130) minutes. All patients except one resumed oral intake within 24 h. One patient underwent excision of coincidental associated Meckel’s diverticulum; in this patient, oral feeds were started after 72 h. Median hospital stay was 5 (range 4-8) days. No patient had wound infection or died. In 4 patients (5.5%) constipation persisted postoperatively. Three patients (4.2%) had mucosal prolapse; this was managed by Goodsall’s stitch. Two patients (2.7%) had recurrence of rectal prolapse. Postoperative sigmoidoscopy showed inverted, horizontal rectal flap on the anterolateral aspect of the rectum in all cases; however, the inverted wall did not cause any functional obstruction.

Median follow-up duration was 10 (range 3 to 48) months. None of the patients had incontinence, or micturition or erectile dysfunction.
Discussion

Our data show that Devadhar’s surgery was associated with a low risk of complications and of recurrence of rectal prolapse. However, our pre- and postoperative assessment was limited to clinical history and examination. We did not have facilities for electromyography and anal manometry. Though these investigations are useful, clinical assessment remains the cornerstone of assessment of surgical results in rectal prolapse.14,15

Devadhar’s technique does not involve dissection in the retrorectal space and thus does not disturb the mesorectum and pelvic nerves. Most other abdominal and all laparoscopic procedures for the treatment of rectal prolapse involve retrorectal dissection;14-18 such dissection can lead to temporary or permanent erectile dysfunction or retrograde ejaculation in 3% to 50% of men.9 Sexual dysfunction is more frequent with laparoscopic mesorectal dissection than with open surgery (49% versus 4%).19 Even rectal mobilization without resection or rectopexy, which has a low recurrence rate, also involves retrorectal dissection.5 None of our 72 patients had sexual dysfunction or micturition disturbances.

The longitudinal plicating sutures used in the Devadhar’s procedure shorten the anterior and lateral rectal walls; this helps prevent intussusception and prolapse. Excision of the peritoneum of the pouch of Douglas and peritonisation are somewhat akin to excision of the sac of a sliding hernia, and further prevent recurrence of rectal prolapse. Thus, only 2 of our 72 patients had recurrence.

Laparoscopic procedures have a higher morbidity rate (24%) than that observed in our patients.17 Ripstein’s rectopexy has more operative morbidity (26%-33%), late complications (8%) and recurrence rate (up to 12%).15-19 Perineal operations are associated with high recurrence rates of 8% to 30%, and high operative morbidity.3,6

Our data suggest that Devadhar’s operation may be a good choice for treatment of complete rectal prolapse, in view of its low complication and recurrence rates.

References


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