LAPAROSCOPIC RESSECTION AND RECTOPEXY FOR PROLAPSE

Russell Stitz
Co-ordinator, Colorectal Unit, Royal Brisbane Hospital, Australia

1. Based on our experience in Brisbane and on the literature, we believe that laparoscopic resection and rectopexy is the treatment of choice for Full Thickness Rectal Prolapse. A laparoscopic approach has been used in most cases since late 1992 and by October 2001, 86 patients had had a laparoscopic resection plus suture rectopexy. Initially, four patients without constipation had laparoscopic rectopexy but rectopexy has been added since 1994.

Resection/rectopexy provides low recurrence rates, avoids constipation in most patients and significantly improves incontinence. Why do resection rectopexy? The literature indicates good prolapse recurrence rates after both rectopexy (0-20%) and resection rectopexy (0-10%) with perineal procedures achieving 10-50% only.

McKee and his colleagues in 1992 and Luukkanen et al (1992) showed a significant increase in colon transit after rectopexy alone with no increase after resection rectopexy.

Brown et al in 1999 found that hindgut motility was abnormal before surgery with absent high-amplitude propagated contractions and these findings were undetected by standard colonic marker studies.

Papers by Deen et al (1994) and Duthie & Bartolo (1992) revealed significant increases in the maximum anal resting pressure, decreased straining at stool and increased mean compliance after resection rectopexy.

Having established that resection rectopexy is superior, the next question is 'why do laparoscopically?' Benefits of a laparoscopic approach include early return of gastrointestinal function, less post-operative pain, shorter hospital stay, early return to full activity, and better cosmesis, with possible lower incidences of DVT and adhesive small bowel obstruction. Technically, we use an open Hasson cannula insertion via the umbilicus with 5 mm ports bilaterally at the level of the umbilicus. A 12 mm port is situated low in the RIF and usually another 5 mm port suprapubically. The surgeon and assistant surgeon operate from the patient's right side with the monitor situated on the left.

The left colon is mobilised to the splenic flexure and initially to the upper rectum where the left ureter and hypogastric nerves are identified. The inferior mesenteric vessels are then divided laparoscopically using an endoscopic stapling device, either above or below the left colic artery. The rectum is then mobilised to the pelvic floor following the hypogastric nerves posteriorly and laterally and if possible, with preservation of the lateral ligaments (to preserve rectal sensation). Anteriorly, the dissection is taken 2.5 cm beyond the peritoneal reflection depending on the depth of the Pouch of Douglas. The upper rectum is then divided, again with the endoscopic stapling device and the mesorectum traversed using the Harmonic Shears.

2. There are then two alternatives for completing the operation. Firstly, the sigmoid colon can be removed via a 5 cm LIF muscle splitting incision or it can be removed via a 6-8 cm Pfannenstiel incision. In the former situation, the suture rectopexy is completed laparoscopically after an intracorporeal double stapled anastomosis. In the second option, the anastomosis is completed under direct vision and the non-absorbable sacral suture placed just distal to the sacral promontory and sutured to the pararectal tissues, including the remnant of peritoneum.

Between 1992 and 1999, 115 laparoscopic assisted resection rectopexies were performed with a mean operating time of 165 minutes (range 90-270). The mean time to passage of flatus was 2 days and the patients were discharged from hospital at a mean post-operative time of 4 days (range 3-65).

We have compared the two methods of extraction with 29 patients in the LIF/ intracorporeal group and 29 patients in the Pfannenstiel/open group. The mean age in the former was 56 and the median operating time 180 minutes whilst in the latter group, the mean age was 52 and the operation time 135 minutes. The median stay in both groups was 4 days. These findings reflect the difficulty of intracorporeal suturing in the pelvis and there seems to be no adverse effect resulting from the slightly larger Pfannenstiel incision.

In 1998, Stevenson, Stitz and Lumley studied 30 patients publishing follow-up figures for resection rectopexy in 26 patients. There was one post-operative death in an 84-year-old female who died of Aspiration Pneumonia at 12 days after endoscopic dilatation of an oesophageal stricture. The morbidity in this group was 13% (4 patients) with no anastomotic leaks. 26 patients were followed over a median time of 18 months (range 6-54) and 24 patients (92%) felt operation had improved their symptoms. 24 (92%) were satisfied with the cosmetic result and we compared the outcomes with previous open studies. The length of stay in this laparoscopic series was 5 days and similar figures have been obtained by Kellockumpu and colleagues (2000). These figures compare with open series of 12 days (McKee 1992) and 11 days (Solomon 1996).

In our study, 14 of 20 patients (70%) with impaired continence had improvement with one patient subsequently requiring a direct sphincter repair. No patient was made worse by the procedure.

These figures compare favourably with the literature for open resection rectopexy where the continence improved in a range of 38-90%. In our study, 64% of patients had improved constipation compared with rectopexy alone of 150 minutes. In Kellokumpu's study, mortality was zero in both groups and the morbidity figures.

Lastly, there was no recurrent full thickness prolapse in the follow-up period, although 7% of the patients had mucosal prolapse, requiring local rubber banding or excision. Longer term follow-up is necessary to fully assess the recurrence rate and we are currently undertaking a longer term review.

3. In 1999, Xynos and his colleagues compared laparoscopic and open resection rectopexy and they found that the laparoscopic procedure took longer but the hospital stay was shorter (p<0.001) and there was lower morbidity (p<0.01).

In 1995, Baker et al confirmed a longer operating time but found that the morbidity was identical in both groups. However, again there was a shorter hospital stay in the laparoscopic group with less blood loss.

A number of papers have now been published on laparoscopic rectopexy alone-Himpens et al 1999, Poen et al 1996, Kessler et al 1999 and Heah et al 2000. These indicate shorter operating times and acceptable length of stay figures. Solomon et al in a randomised controlled trial (in press) have shown significant advantages with the laparoscopic approach.

There has been no mortality in these rectopexy studies and all have shown improvement in continence as expected. Himmens group indicated an improvement in constipation from 38% to 5% whereas Poen's study revealed 2 out of 12 patients who developed constipation post-operatively. Likewise, in Heah's study, constipation occurred in 9 patients pre-operatively and 11 patients post-operatively.

Two papers have compared laparoscopic resection rectopexy with rectopexy alone. Kellokumpu et al (2000) found that constipation improved after both procedures but there was significant improvement in difficult evacuation only after resection rectopexy. Benoist and colleagues (2001) reported a constipation rate after resection rectopexy of 11% compared with a constipation rate after rectopexy alone of 63%. In Kellokumpu's study, mortality was zero in both groups and the hospital stay 5 days in both groups. However, as expected, the resection rectopexy operation time was 255 minutes compared with rectopexy alone of 150 minutes.

In summary, the results to date for laparoscopic resection rectopexy appear to be at least as good as those obtained using an open approach. However, historical controls only have been used and long term follow-up is needed. There are documented short term benefits with acceptable mortality and morbidity figures.
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