

Laparoscopic ileoanal pouch surgery

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Over the past 30 years restorative proctocolectomy with ileoanal anastomosis has evolved into the standard of care for most patients with intractable ulcerative colitis and those with familial adenomatous polyposis. Proctocolectomy eradicates the disease and an ileoanal pouch reconstruction preserves the anal sphincter, enabling the patient to defaecate in the normal way. Much research has addressed issues of pouch design and the need for mucosectomy; both aspects affect the functionality of the pouch. The overall results have been accumulated in systematic reviews and demonstrate the superiority of the double-stapled J pouch. This has the benefit of ease of construction, and better evacuation¹ and continence² than can be achieved by the alternative designs and the handsewn anastomosis after mucosectomy.

Since the early 1990s virtually all advanced procedures have been shown to be feasible and safe laparoscopically, including emergency colectomy for intractable colitis and restorative proctocolectomy with a pouch. The exact method varies from author to author. Most carry out the colectomy either in a totally laparoscopic fashion or hand assisted. Thereafter, the proctectomy and pouch creation are performed through a Pfannenstiel incision. Some authors prefer to do the proctectomy laparoscopically, including cross-stapling at the level of the distal rectum. The pouch is generally fashioned extracorporeally, with the bowel extracted through a periumbilical incision or the future covering stoma site or the Pfannenstiel incision. One of the difficulties associated

with the proctectomy is to achieve a safe cross-staple line at the very distal rectum. Unfortunately, currently available laparoscopic stapling devices do not allow cross-stapling of the distal rectum with a single 45-mm firing, as in open surgery, because of insufficient angulation of the instrument. Four to six firings are required, which may result in an unsafe staple line³ and a leaking ileoanal anastomosis. Even if diverted, anastomotic leakage and associated pelvic sepsis are associated with future pouch failure. It is also worth reflecting that an overlong rectal remnant can cause intractable cuffitis/proctitis in ulcerative colitis and uncontrollable recurrent polyps in adenomatous polyposis. No data are available on the safety of laparoscopic cross-stapling in pouch surgery with respect to these issues. This needs to be addressed in future studies.

No laparoscopic technique is of proven superiority with respect to short- and long-term outcomes⁴. Laparoscopic colectomy combined with an open proctectomy, cross-stapling and pouch creation probably guarantees the easiest and fastest procedure, with safe cross-stapling and pouch creation through a Pfannenstiel incision. Because of the complexity of the operation it is preferable that restorative proctocolectomy is carried out by surgeons who specialize in the treatment of inflammatory bowel disease. The laparoscopic approach has further raised the bar.

The first sizeable series of laparoscopic restorative proctocolectomies originates from the Cleveland Clinic in Florida. Just after the first publications on laparoscopic colectomy

in 1991, Schmitt and colleagues⁵ published a comparative study that included 22 laparoscopically assisted restorative proctocolectomies. Compared with conventional surgery the laparoscopic procedure was associated with a doubling of the operating time, a doubling of the number of patients requiring transfusion and a doubling of the morbidity rate, without any advantage in terms of duration of hospital stay. These disappointing results must be attributed to the learning curve in the early days of advanced laparoscopic surgery. Apart from a longer operating time, later studies have shown at least equality in favour of the laparoscopic procedure. Systematic reviews have shown a limited advantage for the laparoscopic approach with respect to short-term outcome, albeit of arguable clinical significance⁶. Any differences in recovery between the laparoscopic and the open approach would probably have disappeared if patients had been treated using 'enhanced recovery after surgery' protocols⁷.

A limited number of publications describe experience with laparoscopic colectomy in the emergency setting. Although patient's and surgeon's selection biases must be anticipated, the data point towards a lower perioperative morbidity rate with the laparoscopic method. The main advantage of the laparoscopic approach is superior cosmesis, with a 4–8-cm incision, which is often located in the suprapubic area, replacing a full midline laparotomy wound. Polle and colleagues⁸ have prospectively assessed body image, cosmesis, functional outcome and quality of life by

questionnaire. Body image was preserved, particularly in women, and cosmesis was superior in both sexes when the laparoscopic was compared with the open approach. Long-term quality of life and pouch function did not differ between the two methods.

Traditionally, duration of hospital stay and cost are used as endpoints when comparing laparoscopic with open surgery. With the introduction of enhanced recovery programmes, however, Henrik Kehlet⁷ has substantially altered the situation. Today, the true benefit of the laparoscopic approach must be sought in the long-term results. This means that for laparoscopic pouch surgery research should focus on the incidence of incisional hernia and small bowel obstruction, and issues of fertility and sexuality. Evidence is starting to accumulate, but confirmation is awaited. Recent reports of a significant reduction in incisional hernia suggest that this is an important benefit of the laparoscopic approach⁹. One might also speculate that adhesion-related small bowel obstruction, reported in up to 30 per cent of patients after total (procto)colectomy, might be reduced with the laparoscopic approach. The reduction in fertility in women to one-third of normal that is associated with open pouch surgery might be ameliorated with the less invasive technique; in an elegant study Indar and colleagues¹⁰ have shown that adhesions to the abdominal wall and the uterine adnexa are significantly reduced in patients who have laparoscopic, as opposed to open, restorative proctocolectomy. Sexual

function must be further assessed after laparoscopic proctocolectomy, particularly as data from laparoscopic total mesorectal excision (TME) surgery suggest a tendency towards poorer outcome in this context than achieved by open TME¹¹. If, as expected, future studies can provide firm evidence of the anticipated benefits of laparoscopic ileoanal pouch surgery, it will become the standard of care, especially in younger patients.

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