Colonic J-Pouch Function at Six Months versus Straight Coloanal Anastomosis at Two Years: Randomized Controlled Trial

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Abstract. The colonic J-pouch (pouch group) functions better than the straight coloanal anastomosis (straight group) immediately after ultra-low anterior resection, but there are few studies with long-term follow-up. This randomized controlled study compared functional outcome, anal manometry, and rectal barostat assessment of these two groups over a 2-year period. Forty-two consecutive patients were recruited, of which 19 of the straight group [17 men with a mean age of 62.1 ± 2.3 (SEM) year] and 16 of the pouch group (11 men with a mean age of 61.3 ± 3.2 year) completed the study. Four died from metastases and two emigrated; there was no surgical morbidity or local recurrence. At 6 months the Pouch patients had significantly less frequent stools (32.9 ± 2.8 vs. 49 ± 1.4/week; $p < 0.05$) and less soiling at passing flatus (38% vs. 73.7%; $p < 0.05$). At 2 years both groups had improved with no longer any differences in stool frequency (7.3 ± 0.4 vs. 8 ± 0.2/week) and soiling at passing flatus (38% vs. 53%). Defecation problems remained minimal in both groups. Anal squeeze pressures were significantly impaired in both groups up to 2 years ($p < 0.05$). The rectal maximum tolerable volume and compliance were not different between groups. Rectal sensory testing on the barostat phasic program showed impairment at 6 months and recovery at 2 years, suggesting that postoperative recovery of residual afferent sympathetic nerves may play a role in functional recovery. In conclusion, stool frequency and incontinence were less in the Pouch patients at 6 months; but after adaptation at 2 years the straight group patients yielded similar results. Nonetheless, this functional advantage can be given to patients with minimal added effort or complications by using the colonic J-pouch.

Ultra-low anterior resection with coloanal anastomosis has gained wide acceptance for treatment of cancer in the middle and lower thirds of the rectum. However, direct end-to-end straight anastomosis of the proximal colon to the anorectal junction often results in poor bowel function. Although bowel continuity is restored, the normal reservoir function of the excised rectum is not adequately replaced [1]. In addition, the operative procedure may result in some damage to the anal sphincter muscles [1, 2]. Not surprisingly, patients complain of distressingly excessive stool frequency and incontinence. Hida et al [3] found that when the straight colorectal anastomosis was less than 4 cm above the anal verge the bowel function was poor enough to consider constructing a colonic J-pouch to restore the rectal reservoir.

Randomized controlled trials to date have confirmed the functional advantages of the colonic J-pouch over the straight coloanal anastomosis during the early postoperative period [4–8]. None-

theless, colonic J-pouches are still not universally used routinely after ultra-low anterior resection. Among the main reasons would be the awaiting of further data to confirm the long-term results of colonic pouches. Among the reports available with at least 2 years of follow-up [6, 9–11], the results have not been in complete agreement and the available controlled randomized data with such follow-up is minimal [6].

Another possible reason the colonic J-pouch has not been widely accepted is that the physiologic consequences of the constructed pouch are still not fully understood.

Previous colonic pouch studies [7, 9, 12] with anorectal physiologic components have not been consistent in their reported results. Important alterations in the rectal sensation, reservoir capacity, and compliance may not be fully appreciated by the traditional simple techniques of proctometrography [7]. The barostat, a computerized pump that inflates a rectal balloon at controlled and reproducible rates, pressures, and volumes, provides a more precise technique for assessing rectal physiology [13]. The purpose of the study was to conduct a randomized controlled trial to compare the clinical outcome, bowel function, anal manometry, and rectal barostat findings in patients after ultra-low anterior resection reconstructed with either a straight coloanal anastomosis (straight group) or colonic J-pouch (pouch group) followed for 2 years.

Patients and Methods

Patients

The hospital ethics committee approved the protocol to recruit, with consent, consecutive patients with adenocarcinoma of the mid and lower rectum. A computed tomography (CT) scan was performed to exclude extensive local disease, which would preclude ultra-low anterior resection. Preoperative anal manometry and rectal barostat studies were done in an outpatient setting. The patients were then randomized to the straight or pouch groups by drawing sealed envelopes. Subsequently, patients with Dukes' C lesions underwent postoperative adjuvant chemotherapy and radiotherapy (4500–5000 cGy in 28 fractions over 5 weeks).

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Surgical Technique

All patients underwent a standardized ultra-low anterior resection by dedicated specialized colon and rectal surgeons. The left colon was mobilized to a position proximal to the splenic flexure. The inferior mesenteric artery was ligated proximal to the left colic artery. The rectum was dissected down to the anorectal junction at the pelvic floor, with total clearance of the mesorectum. An Auto Suture PI (pneumointestinal) 30 mm transverse stapler (U.S. Surgical Corporation, Norwalk, CT, USA) was applied at or just proximal to the anorectal junction, and the rectum was removed with at least 2 cm of distal tumor clearance.

In the straight group, the descending colon was anastomosed to the anorectal stump by the double cross stapling technique [14] using an Autosuture Premium CEEA (curved end-to-end anastomosis) plus 31 intraluminal stapler (U.S. Surgical Corporation). In the pouch group, a J-pouch was constructed from the descending colon using an Autosuture ILA (intraluminal anastomosis) 75 linear cutting stapler (U.S. Surgical Corporation), as previously described [5]. (The limbs of the pouch were measured at 6 cm prior to transection stapling.) The colonic J-pouch was then anastomosed to the stapled anorectal stump by a double stapling technique. All patients were defunctioned with a loop ileostomy, which was closed 3 months later after barium enema confirmation of anastomosis integrity.

Clinical, Anal Manometric, and Rectal Barostat Assessments

The patients were followed up at 3-month intervals after surgery. Physical examination, serum carcinoembryonic antigen (CEA) levels, and colonoscopy (at 1 year) were performed to detect recurrences. CT scans and other appropriate investigations were done as indicated by the clinical conditions. A blinded observer (M.T.) administered the bowel function questionnaire at 6 months and 2 years. Bowel continence was categorized according to an accepted scoring system [15]. Anorectal manometry was performed using a microcapillary perfusion system (Synectics, Stockholm, Sweden), according to a technique previously described [16].

Rectal volume of initial sensation, maximum tolerable volume, and compliance were tested with a barostat (Synectics Visceral Stimulator, Stockholm, Sweden). The latter functioned as a computerized pump inflating a balloon that distended the rectum at controlled and reproducible rates, pressures, and volumes. The unit automatically compensated for variations in muscle tone, motility, and balloon shape by adjusting the volume to maintain specified pressures [13]. A completely automated ramp distension protocol inflated air into the rectal balloon at a constant volume rate of 40 ml/min until the patient reported discomfort. The phasic distension protocol inflated air into the rectal balloon at randomly selected pressure levels ranging from 10 to 70 mmHg. Rectal sensation from the sacral parasympathetic nerves are sensitive to both phasic and ramp distension [17], but sensation from lumbar splanchnic nerves are sensitive mainly to phasic distension [18].

Statistical significance was tested using Fisher's exact test, the Mann-Whitney U-test, and Wilcoxon tests where appropriate.

Table 1. Bowel function in patients 6 months after low anterior resection, comparing straight coloanal with colonic J-pouch anal anastomoses.

Parameter	Straight ($n = 19$)	Colonic J-pouch ($n = 16$)
Stool frequency (no./week)*	49 (1.4)	32.9 (2.8)
> Four stools/day (no.)*	15 (78.9%)	6 (37.5%)
Incontinence to solids (no.)	3 (15.8%)	2 (12.5%)
Incontinence to liquids (no.)	9 (47.4%)	7 (43.8%)
Incontinence to gas (no.)	11 (57.9%)	9 (31.6%)
Need to wear pad (no.)	3 (16.0%)	0
Alterations in life style (no.)	16 (84.2%)	8 (50.0%)
Continence score [15]	2.3 (0.4; 0–4)	1.8 (0.3; 0–2)
Nocturnal leakage (no.)	6 (31.6%)	3 (18.8%)
Perineal excoriation (no.)	2 (10.5%)	0
Need for antidiarrhea agents (no.)	4 (21.0%)	2 (13.0%)
Inability to release gas without soiling (no.)*	14 (73.7%)	6 (38.0%)
Inability to discriminate gas from feces (no.)	12 (63.0%)	8 (50.0%)
Urge deferment time (min)	6.2 (0.7)	6.3 (0.7)
Toilet dependence (no.)	12 (63.2%)	6 (37.5%)
Tenesmus (no.)	3 (16.0%)	0
Difficulty emptying (no.)	12 (63.2%)	8 (50.0%)
Stool fragmentation (no.)	8 (42.1%)	6 (37.5%)
Enema required (no.)	1 (5.0%)	2 (13.0%)

Values for stool frequency and urge deferment time are given as the mean (SEM). Values for the continence score are given as the mean (SEM; range).

*$p < 0.05$ using the Mann-Whitney U-test and Fisher's test as appropriate.

Results

During the 21-month period from November 1995 to August 1997, a total of 42 consecutive patients were recruited into the trial. Of these, four died of metastatic disease and two had emigrated, leaving 35 available for follow-up to the end of the study period. There were 19 patients [17 men with a mean age of 62.1 ± 2.3 years] (SEM) in the straight group and 16 patients (11 men with a mean age of 61.3 ± 3.2 years) in the pouch group. Dukes' staging in the straight group were A, 1; B, 7; C, 10; and D, 1. In the pouch group they were Dukes' A, 1; B, 6; C, 8; and D, 1. The level of the anastomosis measured from the dentate line was 3.0 ± 0.2 cm in the straight group and 3.0 ± 0.5 cm in the pouch patients. Postoperative radiotherapy was offered to the Dukes' C patients and was given to eight in the straight group and seven in the pouch group. The average time for ileostomy closure was 18.8 ± 2.9 weeks in the straight group and 17.4 ± 2.9 weeks in the pouch patients. At a mean follow-up of 29.0 ± 1.2 months in the straight group and 33.1 ± 1.5 months in the pouch patients, no clinical postoperative complications relating to either the low anterior resection or the ileostomy closure were found. Barium enema prior to stoma closure confirmed the integrity of anastomoses in all patients. One patient in each group was found to have developed liver secondaries, but none have had any local pelvic recurrences to date. Statistical analysis showed no significant differences in the age, gender distribution, Dukes' staging, level of anastomoses, postoperative radiotherapy administration, recurrences, or follow-up for the two groups.

The bowel function at 6 months is summarized in Table 1 and at 2 years in Table 2. Stool frequency and more than four bowel movements a day were present significantly more often in the

Table 2. Bowel function in patients 2 years after low anterior resection, comparing straight coloanal with colonic J-pouch anal anastomoses.

Parameter	Straight ($n = 19$)	Colonic J-pouch ($n = 16$)
Stool frequency (no./week)	8 (0.2)	7.3 (0.4)
> Four stools a day (no.)	7 (37%)	3 (19%)
Incontinence to solids (no.)	1 (5%)	0
Incontinence to liquids (no.)	0	0
Incontinence to gas (no.)	3 (16%)	0
Need to wear pad (no.)	3 (16%)	0
Alterations in life style (no.)	5 (26%)	4 (25%)
Continence score [15]	0.4 (0.26; 0–3)	0.14 (0.14; 0–1)
Nocturnal leakage (no.)	1 (5%)	0
Perineal excoriation (no.)	1 (5%)	0
Need for antidiarrhea agents (no.)	4 (21%)	2 (13%)
Inability to release gas without soiling (no.)	10 (53%)	6 (38%)
Inability to discriminate gas from feces (no.)	12 (63%)	8 (50%)
Urge deferment time (min)	6.2 (0.7)	6.3 (0.7)
Toilet dependence (no.)	5 (26%)	2 (13%)
Tenesmus (no.)	3 (16%)	0
Difficulty emptying (no.)	5 (26%)	5 (31%)
Stool fragmentation (no.)	7 (37%)	4 (25%)
Enema required (no.)	1 (5%)	2 (13%)

Values for stool frequency and urge deferment time are given as the mean (SEM). Values for continence score are given as the mean (SEM; range).

straight group [mean 49 ± 1.4 times a week, $n = 15$ (78.9%)] than in the pouch patients [mean 32.9 ± 2.8 times a week, $n = 6$ (37.5%) patients; $p < 0.05$]. At 2 years the stool frequency had diminished significantly in both groups (straight group, mean 8.0 ± 0.2 times a week, $p < 0.05$; pouch group, mean 7.3 ± 0.4 times a week, $p < 0.05$). There were also fewer patients with more than four bowel movements a day at 2 years [straight group 7 (37%) patients, $p < 0.05$; pouch group 3 (19%) patients; $p = $ NS]. At that point in time there were no longer any significant differences between the straight and pouch groups. There were no differences in the continence scores in the two groups at 6 months (straight group mean 2.3 ± 0.4, range 0–4; pouch group mean 1.8 ± 0.3, range 0–2). At 2 years the continence scores had improved in both the straight (mean 0.4 ± 0.26, range 0–3, $p < 0.05$) and pouch (mean 0.14 ± 0.14, range 0–1, $p < 0.05$) groups, and there were now no differences between the groups. At 6 months the ability to release flatus without soiling was significantly more impaired in the straight group ($n = 14$, 73.7%) than in the pouch patients ($n = 6$, 38%; $p < 0.05$). Although the improvement at 2 years in the straight group patients did not reach statistical significance ($n = 10$, 53%), there were no longer any significant differences when compared with the pouch group ($n = 6$, 38%). Nocturnal leakage, need for antidiarrhea drugs, perineal excoriation, urge deferment time, and toilet dependence were minimal at 6 months and not significantly different between the two groups. At 2 years, toilet dependence was alleviated in the straight patients ($p < 0.05$), but there was still no significant difference compared to the pouch group. The other symptoms remained about the same in the two groups.

At 6 months, the defecation problems (consisting of tenesmus, difficulty emptying, stool fragmentation, and enema requirement) were not significantly different between the groups. At 2 years there was significantly less difficulty with emptying by the straight group patients ($p < 0.05$), but it remained not significantly different from that of the pouch patients. There were no significant improvements in tenesmus and stool fragmentation symptoms in the two groups.

The preoperative anal manometry and rectal barostat measurement results are shown in Table 3. There were no significant differences between the straight and pouch patients. With reference to the findings at 6 months after surgery summarized in Table 3, maximum anal squeeze pressure were significantly impaired in both straight ($p < 0.05$) and pouch ($p < 0.05$) patients. The rectal sensation and maximum tolerable volume (especially when tested by the barostat phasic program) and compliance were impaired, but they did not reach statistical significance. The rectosphincteric inhibitory reflexes were lost in most patients. There were no significant differences between the straight and pouch patients. With reference to the findings 2 years after operation shown in Table 3, the maximum anal squeeze pressures in both groups remained significantly lower than the preoperative levels ($p < 0.05$). The barostat phasic program measured the rectal volume of the initial sensation and maximum tolerable volume, which were found to be less impaired than the levels found at 6 months but did not reach statistical significance. Rectal compliance remained as impaired as it was at 6 months. The rectosphincteric inhibitory reflex was positive in more patients than at 6 months, but it did not reach statistical significance. There were no significant differences in any of these findings between the straight and pouch patients.

Discussion

Good long-term evidence-based medicine data are needed to decide rationally as to whether patients undergoing ultra-low anterior resection with coloanal anastomoses routinely require colonic pouches. However, data derived entirely from randomized controlled trials followed for 2 years is sparse, except for that of Lazorthes et al. [6]. Joo et al. [9] reported on 83 patients whose components for follow-up were mostly available at 2 years, but only 16 of them were previously randomized. The methodologies of other reports with mean follow-ups of 5 years by Dehni et al. [11] and 10 years by Barrier et al. [10] were entirely retrospective. In our study, four patients had died and two had emigrated since surgery. This highlighted the difficulty of accumulating long-term randomized controlled data when dealing with malignant disease, especially when patients were required to be physically present to complete stringent questionnaires and to undergo physiologic tests. We were fortunate that none of the patients developed anastomotic complications or local recurrences, which would have confounded the functional outcome. Of the patients available for analysis, the age, gender distribution, and Dukes' staging and the proportion subjected to postoperative adjuvant radiochemotherapy were comparable in the two groups.

It is quite certain that a colonic pouch reduces the high stool frequency during the 6- to 12-month period immediately following ultra-low anterior resection. Our results confirmed those previously reported in randomized controlled studies [4, 6–8] and cohort studies [9, 19–21]. At 2 years of follow-up the stool frequency in both groups of our patients had improved such that there were no longer any significant differences between them. Antidiarrhea medication requirements were minimal and were

Table 3. Anal manometric and rectal barostat findings in low anterior resection patients, comparing straight coloanal with colonic J-pouch anal anastomoses.

Parameter	Preoperative		Changes from preoperative values at 6 months		Changes from preoperative values at 2 years	
	Straight (n = 19)	Colonic J-pouch (n = 16)	Straight (n = 19)	Colonic J-pouch (n = 16)	Straight (n = 19)	Colonic J-pouch (n = 16)
Mean resting anal pressure (mmHg)	62.1 (5)	49 (7.7)	5.9 (9.3)	11.1 (10.1)	16.51 (8.3)	23.7 (7.8)
Maximum anal squeeze pressure (mmHg)	209.8 (18.5)	211.8 (22.9)	62.3 (18.9)*	86.1 (26.3)*	102.4 (31.7)*	80.7 (35)*
Physiologic anal length (cm)	1.8 (0.2)	1.4 (0.3)	0.5 (0.4)	-0.2 (0.3)	-0.4 (0.2)	0 (0.6)
Rectal volume of initial sensation: barostat phasic program (ml)	154.6 (31.7)	171.9 (61)	70.7 (33.9)	53.2 (102.5)	13.5 (23.8)	24.8 (14.8)
Rectal volume of initial sensation: barostat ramp program (ml)	59.6 (12.1)	55.3 (8.7)	-7.8 (11.7)	9.7 (7.5)	-6.5 (7.9)	5.9 (7.9)
Rectal maximum tolerable volume: barostat phasic program (ml)	284.4 (86.1)	176.9 (56.6)	-53.3 (36.3)	-57 (99.4)	-8.3 (19.3)	0 (23.9)
Rectal maximum tolerable volume: barostat ramp program (ml)	110 (15.5)	109.8 (16.8)	11.9 (26.6)	2.6 (34.9)	-10.3 (21.4)	1.6 (27.5)
Rectal compliance: barostat (ml/mmHg)	17.3 (5.2)	7.7 (5.4)	-10.4 (4.32)	-11.5 (9.6)	-14 (6.2)	-7.1 (5.9)
Rectosphincteric inhibitory reflex (no.)	19 (100%)	16 (100%)	6 (31.6%)	7 (43.8%)	10 (52.6%)	8 (50%)

Values except for rectosphincteric inhibitory reflex given as the mean (SEM).
Significantly changed from preoperative values ($p < 0.05$, Mann-Whitney U-test).

similar in the two groups. The straight coloanal anastomosis patients reported in the randomized controlled study by Lazorthes et al. [6] did not improve as much after 2 years, resulting in a significant difference compared with their pouch patients. This may be due to using the sigmoid colon for some of their straight coloanal anastomoses, as the sigmoid colon is less distensible and hence less able to adapt as a storage reservoir for feces. The descending colon was always used in our straight coloanal anastomoses. Furthermore, in cohort studies, no differences in stool frequency between colonic pouch and straight anastomosis patients were found at 2 years by Joo et al. [9] or at 10 years by Barrier et al [10]. Dehni et al. [11] reported that the stool frequency remained superior in the pouch patients after 5 years but conceded that they had difficulty assessing frequency because of significant stool fragmentation in their patients.

Minor degrees of bowel incontinence may be found after ultra-low anterior resection. Our possibly unexpected higher prevalence of minor incontinence symptoms may have been due to the stringent questioning by the blinded observers. We found that pouch patients were less likely to soil when passing flatus, but the other parameters of continence were the same as for the straight patients at 6 months. Early bowel continence has been reported to be significantly better with J-pouch patients in randomized controlled trials [4, 5] and in larger retrospective studies [9, 19]. At the end of 2 years continence had improved such that there was no difference between our two groups of patients. Improvements in major soiling and frequent soiling over time in both groups were also documented by Lazorthes et al. [6], although statistical significance was not reached with the small numbers of such patients in their study. Other studies have also confirmed no difference in the longer-term continence between straight and pouch anastomosis patients [9-11].

Stool evacuation problems comprise the other major bowel function debility that concerns the patient after ultra-low anterior resection, particularly with a colonic J-pouch. We confirmed that when a small 6 cm limb pouch was used the evacuation problems were not worse than with the straight coloanal anastomosis [5, 7,

19, 22, 23]. A randomized controlled trial that compared small (6 cm) and large (9 cm) colonic J-pouches reported no differences in stool frequency, urgency, or continence at 2 years of follow-up [24]. However, significantly fewer patients with 6 cm pouches required laxatives and enemas for severe constipation. At 2 years of follow-up there were some improvements, especially in our straight patients, but major evacuation problems remained minimal and were no different between the groups. The persistently greater need for laxatives in pouch patients (with hand-sewn colonic pouch–anal anastomoses) reported at 10 years by Barrier et al. [10] was not seen in our patients. Stool fragmentation/clustering is defined as multiple evacuations over a 1- to 2-hour period, associated with persistent sensation of rectal fullness. Dehni et al. [11] and Barrier et al. [10] reported that more straight anastomosis patients had persistent long-term stool fragmentation. This was not confirmed in our patients, although cultural and dietary factors might explain some of these discrepancies.

Few physiologic comparisons between the two anastomotic techniques have been performed and followed for up to 2 years. Anal pressures were significantly impaired and the rectosphincteric inhibitory reflex was lost in most of our patients of both groups at 6 months after surgery. The anal pressures remained impaired, although a few patients recovered the rectosphincteric inhibitory reflex at 2 years. Injuries to the anal sphincters resulting in impaired anal pressures have been reported in previous studies [1, 25, 26]. Endoanal ultrasonography studies have shown evidence of anal sphincter fragmentation from transanal introduction of stapling devices during anterior resection [2]. This may account for some of the minor incontinence symptoms found in both groups of our patients. When the natural rectal reservoir is removed and replaced by less distensible colon, measurable physiologic abnormalities that could explain functional problems would be expected. At 6 months, rectal sensation and maximum tolerable volume (assessed by the barostat phasic program) and compliance were impaired in both groups, but statistical significance was not reached. At 2 years there was a trend toward improved rectal sensation and maximum tolerable volume (as

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assessed by the barostat phasic program) in both groups. There were no differences between the straight and pouch patients. Using traditional proctometrographic techniques, Kusunoki et al. [12] found that the maximum tolerable volume in 8- to 10-cm colonic pouches was significantly higher at 2 years. However, studies on 6 cm pouches showed no significant differences in the maximum tolerable volume or compliance despite better function compared to straight anastomoses [7]. Joo et al. [9] documented no differences in maximum tolerable volume or compliance until 2 years, when the rectal compliance in straight anastomoses improved significantly. Nonetheless, the barostat technique was designed for more accurate assessment of rectal physiology than traditional proctometrography by inflating the intrarectal balloon at controlled and reproducible rates, pressures, and volumes [13]. Although not statistically significant, the changes in the barostat phasic program that measured maximum tolerable volume may have some correlation with enlargements of the colonic J-pouch size measured radiologically over a 2-year period [23]. Such an increase in size in both the straight and colonic pouch patients could possibly account for the functional improvements in the long term. On the other hand, studies using traditional methods of proctometrography have not taken into account the effects of postoperative alterations in nerve supply upon rectal sensation, which may affect how the patient perceived the maximum tolerable volume. Impairment of rectal sensation and maximum tolerable volume at 6 months with subsequent improvement at 2 years were detected mainly with the barostat phasic program, which tests the afferent function of the sympathetic nerves [18]. Therefore, another possible factor for functional improvement at 2 years may be recovery of residual afferent sympathetic nerve function following injuries sustained during ultra-low anterior resection.

Conclusions

Excessive stool frequency and incontinence may distress patients after ultra-low anterior resection. The use of a small 6 cm limb colonic J-pouch effectively reduced stool frequency and minor incontinence during the early postoperative period without causing significantly more stool evacuation problems. Postoperative physiologic findings included impaired anal pressures in both groups of patients. Rectal sensation, maximum tolerable volume, and compliance were affected in both groups, although it did not reach statistical significance. The lack of statistically significant rectal physiologic differences between the straight and pouch patients may be related to the small pouch used [7]. Nonetheless, there was a trend toward improvement in the rectal parameters when they were reassessed at 2 years. This would be consistent with the improved stool frequency and continence, particularly in the straight group patients. We were fortunate not to have any clinical anastomotic complications with our present cohort of patients. However, an additional advantage reported with colonic J-pouches is a lower incidence of anastomotic complications [4, 9, 27]. Thus although the main benefits to the patient are improved bowel function for up to 2 years, we favor the colonic J-pouch because this technique can be safely incorporated into the procedure of ultra-low anterior resection without excessive extra effort and the risk of complications.

Résumé

Après résection antérieure du rectum ultra-basse, le réservoir colique en J (POUCH) fonctionne mieux que l'anastomose coloanale sans réservoir (STRAIGHT), mais il existe peu d'études avec un suivi à long terme. Cette étude randomisée, contrôlée, compare l'évolution fonctionnelle et la manométrie anale ainsi que l'évaluation barostatique dans ces deux groupes de patients pendant une période de deux ans. Quarante-deux patients consécutifs ont été inclus, dont 19 STRAIGHT (17 hommes; âge moyen 62,1 (ETS: 2,3) ans) et 16 POUCH (11 hommes; âge moyen 61,3 (3,2) ans). Quatre patients sont décédés de métastases (et deux ont émigré), mais il n'y avait aucune morbidité ou de récidive locale. A 6 mois, les patients POUCH allaient significativement moins fréquemment à la selle (32,9) (2,8) vs. 49 (1,4)/semaine; p < 0,05) et avaient moins de souillures lorsqu'ils passaient des gaz (38% vs. 73,7%; p < 0,05). A 2 ans, les résultats des deux groupes se sont améliorés avec aucune différence en ce qui concernait la fréquence des selles (7,3 (0,4) vs. 8 (0,2)/semaine) ou la souillure en passant des gaz (38% vs. 53%). Les problémes de défécation sont restés minimes dans les deux groupes. Les pressions de contraction anale étaient significativement perturbées dans les deux groupes, jusqu'à deux ans (p < 0,05). Le volume rectal maximal tolérable et la compliance n'étaient pas significativement différents entre les deux groupes. Selon les résultats de la barostatique phasique on a mis en évidence une perturbation à 6 mois mais avec une récupération à 2 ans, suggerérant que la récupération postopératoire de nerfs sympathiques afférents joue peut-être un rôle dans la récupération fonctionnelle. En conclusion, à 6 mois, la fréquence des selles et de l'incontinence sont moindres après une anastomose POUCH, mais après 2 ans, les patients ayant une anastomose STRAIGHT ont des résultats similaires. Néanmoins, cet avantage fonctionnel inhérent à l'utilisation de l'anastomose avec réservoir en J ne demande qu'un minime effort de plus et l'intervention se complique peu.

Resumen

Existen pocos trabajos que valoren los resultados funcionales tardíos de la bolsa en J de colon (POUCH) con la anastomosis termino-terminal colorrectal, tras resecciones anteriores, muy bajas, de recto. En este estudio controlado y randomizado, se comparan, tras un seguimiento de 2 años, los resultados funcionales, la manometría anal y la barestesia rectal en dos grupos de pacientes tratados quirúrgicamente, con una de las dos técnicas mencionadas. La población estudiada comprende 42 pacientes; 19 tratados mediante anastomosis directa (grupo STRAIGHT) de los que 17 fueron hombres con una edad media de 62.1 (SEM: 2.3) años; el otro grupo (POUCH) comprende 16 pacientes de los que 11 fueron hombres con edad media de 61.3 (3.2) años. 4 enfermos murieron como consecuencia de diseminación metastásica y 2 emigraron. No se registró morbilidad quirúrgica alguna, ni recidivas locales. A los 6 meses, los enfermos del grupo POUCH presentaban un número significativamente menor de deposiciones [32.9 (2.8) vs. 49 (1.4)] por semana (p < 0.05). y al ventosear dejan escapar menos materia fecal (38% vs 73.7%; p < 0.05). A los 2 años, los pacientes de ambos grupos mejoraron sin que existieran diferencias ni en el número de deposiciones [7.3 (0.4) vs. 8 (0.2)], ni al mancharse al

ventosear (38% vs. 53%). Los problemas de defecación fueron mínimos en ambos grupos. Las presiones anales al intento de defecar mejoraron significativamente en ambos grupos, a partir de los 2 años de la intervención (p < 0.05). El volumen máximo tolerable y la "compliance" rectal fue igual en los dos grupos. La sensibilidad rectal, detectada mediante un programa fásico barestésico, mejora a los 6 meses y se recupera a los 2 años de la operación, lo que sugiere que en la recuperacion postoperatoria, los nervios simpáticos aferentes no resecados, desempeñar un importante papel en la recuperación funcional. Conclusión: el número de defecaciones y la incontinencia son menores en el grupo POUCH, hasta que transcurren 6 meses de la operación, pero tras un periode de adaptación de 2 años, los resultados en el grupo POUCH y en el grupo STRAIGHT son semejantes. A pesar de ello la recuperción funcional es más rápida con la bolsa en J de colon (POUCH) y este mayor confort para los enfermos se puede alcanzar con un minimo esfuerzo añadido y sin complicaciones.

Acknowledgments

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