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Original article ■

Functional Outcome and Quality of Life After Restorative Proctocolectomy and Ileal Pouch-Anal Anastomosis in Elderly Patients

Gjorgji Jota, Zoran Karadžov, Milčo Panovski, Nenad Joksimović, Andrijan Kartalov, Radomir Gelevski, Vladimir Joksimović

Digestive Surgery Clinic, Faculty of Medicine, Ss. Cyril and Methodius University, Skopje, Macedonia

SUMMARY

Restorative proctocolectomy with ileal pouch-anal anastomosis is the surgical treatment of choice for patients with medically refractory ulcerative colitis, ulcerative colitis with dysplasia or cancer, or familial adenomatous polyposis (FAP), regardless of their age.

The aim of the paper was to report our 6-year experience of restorative proctocolectomy and ileal pouch-anal anastomosis in elderly population at the tertiary referral centre.

Chart review was performed for four patients undergoing ileal pouch-anal anastomosis from 2006 to 2010. Preoperative histopathologic diagnosis was ulcerative colitis. We collected data regarding patients' demographics, type and duration of disease, previous operations and indications for surgery. We analyzed the operative protocols and postoperative pathologic diagnosis. Early (within 30 days after surgery) and late complications were noted. Follow-up was conducted upon annual function and quality of life questionnaire, physical examination and endoscopic evaluation of the pouch.

Postoperative histopathologic diagnoses were: ulcerative colitis (n=2) and indeterminate colitis (n=2). The average age of the operated patients was 59 years. The mean duration of the follow-up was four years. We report two cases of steroid use prior to operation as well as two cases of extraintestinal manifestations. We report no septic complications and two cases of pouchitis. Functional results and quality of life were good to excellent in all four cases of ileal pouch-anal anastomosis.

Restorative proctocolectomy with ileal pouch-anal anastomosis in elderly people is a safe procedure with low morbidity rate. Functional results are generally good and patient satisfaction is high.

Key words: **ulcerative colitis, indeterminate colitis, elderly people, IPAA, hand sewn J-pouch, functional results, quality of life**

Corresponding author:

Gjorgji Jota •

e-mail: jotamak@hotmail.com •

INTRODUCTION

Since the first reports by Sir Alan Parks and John Nicholls in 1978 (1), several modifications of restorative proctocolectomy with ileal pouch-anal anastomosis have been made, becoming surgical treatment of choice for patients with medically refractory ulcerative colitis, ulcerative colitis with dysplasia or cancer, or familial adenomatous polyposis (FAP) (2, 3). Only few large series providing the opportunity to examine the operation in detail with meaningful outcome analysis are available (2). The initial functional results are marred by a high evacuation frequency with gross imperfection of anal continence, and the overall functional results improve gradually during the first 3-6 months with further improvement over the next couple of years. The frequency decreases and stabilizes to 4-5 evacuations per day (4). A few patients may need to evacuate during night, others may suffer minor incontinence problems, particularly at night, and most patients need to use the constipating drugs. The vast majority of patients consider that the overall general satisfaction with their sexual life had normalized considerably after surgery (5). It is regarded that the mean maximum resting anal pressure and maximum squeeze pressure significantly lowers in elderly people, but in patients with longstanding ulcerative colitis any tendency for the anal sphincter to weaken with age may be counterbalanced by the effect of work hypertrophy on the anal sphincter. For that reason, it should not be assumed that elderly patients with ulcerative colitis have weaker sphincter than younger patients (6). Occult obstetric sphincter injuries in women are likely to play an important role (7). For many years, the restorative proctocolectomy with ileal pouch - anal anastomosis was reserved for patients younger than 50 years and although a “second peak” in incidence was recognized there was no consensus whether elderly patients should undergo ileal pouch - anal anastomosis (8). Several large series are published, advocating that there is no significant difference in manometry, incontinence, frequency and overall satisfaction between younger and elderly patients (9, 10). On the other hand, there are authors that report slightly poorer results in the elderly group (11, 12). Quality of life is not just a new measure; in fact, it is now a key measure of surgical outcomes. We now witness on routine basis how patients trade a modest degree of additional surgical risk for a modest degree of improved quality of life (13).

PATIENTS AND METHODS

Our group of analyzed patients consisted of four patients that underwent restorative proctocolectomy in the University Clinic for Digestive Surgery at the Faculty of Medicine in Skopje, in the period between 2006 and 2010. Indication for surgery was medically refractory ulcerative colitis. The age of the patients varied from 52 to 65 years. All of the patients were operated on an elective basis. They underwent a two-stage procedure: the first stage included proctocolectomy with ileal pouch construction, pouch anal anastomosis and loop ileostomy, whereas the second stage consisted of occlusion of loop ileostomy.

The pouch-anal anastomosis was performed by means of a double stapled suture with CEEA 31 stapler about 1 cm above the dentate line. In all operated patients the ileal J-shaped pouch was constructed. The average pouch length was about 15-20 cm resulting in an optimal pouch capacity of 150-200 ml. In all four cases the pouch was hand-sutured and the pouch-anal anastomosis was protected by loop ileostomy. The loop ileostomy was closed after 2-4 months.

Before occlusion of the ileostomy, each patient underwent rectoscopy with assessment of pouch-anal anastomosis and X-ray study of ileal pouch with barium introduced via Foley catheter placed in the efferent loop of the ileostomy. The collected material was analysed in relation to early and late postoperative complications as well as final functional results. Data regarding the clinical course of the ulcerative colitis before the surgery were obtained directly from the patient or his/her gastroenterologist. Patients were included in a long-term follow up programme with standard follow-up intervals after ileal pouch-anal anastomosis of 3, 6 and 12 months in the first year and then once per year in the following years, with the aim of detecting pouch-related septic complications. In addition, patents were asked to present at our Clinic if any pouch-related symptoms developed, independently of the scheduled appointments. We defined the pouch-related septic complications as well as the presence of fistulas or abscesses near the pouch (in the small pelvis), in the upper, middle or lower part of the pouch, in the area of the ileal pouch-anal anastomosis, or in the area of the anal sphincter. Diagnostic study for the detection of pouch-related septic complications routinely involved obtaining the patient’s history and pouchoscopy at each follow-up. Digital examination included palpation of the complete circumference of the anal canal and the pouch-anal anastomosis. This examination has a high sensitivity in detecting pouch-related septic complications because of the localized pain that is provoked. With respect to the extent of the disease, we distinguished between pancolitis with backwash ileitis, pancolitis without backwash colitis and left sided colitis with inflammatory manifestations only distal to the hepatic flexure. We diagnosed backwash ileitis when inflammation of the terminal ileal mucosa was present over at least 5 cm. The disease activity of the ulcerative colitis was measured using Colitis Activity Index introduced by Rachmilewitz (14). We distinguished between three grades of severity (scores 0-7, 8-15, 16-31).

RESULTS

All of the patients in our review underwent a proctocolectomy with formation of a J-pouch reservoir for the IPAA. We report a group of four patients diagnosed with ulcerative colitis. The colectomy specimen revealed two cases of indeterminate colitis.

The mean and median age of the patients included in our study was 59 years (standard deviation 5.2; range 52-65). All of our patients were women and all of them had two children delivered vaginally. None of them had recorded obstetric sphincter injury. According to Colitis Activity Index introduced by Rachmilewitz, three of the patients belonged to group 0-7 and one belonged to group 8-15. Regarding the extent of the disease, three patients had pancolitis without backwash ileitis and only one had inflammatory manifestations distal to the hepatic flexure.

Other clinical data are shown in Table 1.

Table 1. *Clinical data*

Duration of UC, yr (±SD)	7±9.5
Duration of IPAA, yr (±SD)	4±2.1
Refractory UC as an indication for IPAA cases (%)	4 (100%)
Excessive alcohol use (%)	0%
Excessive tobacco use (%)	0%
Steroid use, cases (%)	2 (50%)
Family history of inflammatory bowel disease (%)	0%
Extraintestinal manifestations (%)	2 (50%)

Table 2. *Postoperative complications (divided as early and late complications)*

	Complications		
Type	**Early, n(%)**	**Late, n(%)**	**Total, n(%)**
Anastomotic leak or separation	0 (0%)	0 (0%)	0 (0%)
Bleeding pouch	0 (0%)	0 (0%)	0 (0%)
Pouch infarction	0 (0%)	0 (0%)	0 (0%)
Parapouch abscess or peritonitis	0 (0%)	0 (0%)	0 (0%)
Pouch-/anastomotic-cutaneous fistula	0 (0%)	0 (0%)	0 (0%)
Pouch-vaginal fistula[†]	0 (0%)	0 (0%)	0 (0%)
Ileostomy retraction or prolapse	0 (0%)	0 (0%)	0 (0%)
Anal stricture	0 (0%)	0 (0%)	0 (0%)
Incontinence	0 (0%)	0 (0%)	0 (0%)
Small bowel obstruction	1 (25%)	0 (0%)	1 (25%)
Pouchitis	2 (50%)	0 (0%)	2 (50%)
Incisional hernia	0 (0%)	0 (0%)	0 (0%)
Wound infection	1 (25%)	0 (0%)	1 (25%)
[†]out of the total number of female patients			
Total number of patients with complications	4	0	4

Table 3. *Functional results and quality of life in patients that underwent restorative proctocolectomy and ileal pouch-anal anastomosis*

Variable	Ulcerative colitis (n=2)	Indeterminate colitis (n=2)	Total (n=4)
Bowel movement per 24hrs	3 (2-5)	5 (4-10)	3 (2-10)
Median (range)			
Urgency			
Always, n(%)	0 (0%)	0 (0%)	0 (0%)
Sometimes, n(%)	0 (0%)	1 (50%)	1 (25%)
Seepage			
Night, n(%)	1 (50%)	2 (100%)	3 (75%)
Day and night, n(%)	0 (0%)	0 (0%)	0 (0%)
Dietary restriction, n(%)	0 (0%)	1 (50%)	1 (25%)
Antidiarrheal medications			
Always, n(%)	1 (50%)	2 (100%)	3 (75%)
Sometimes, n(%)	0 (0%)	0 (0%)	0 (0%)
Sexual function limitation	0 (0%)	0 (0%)	0 (0%)
Quality of life			
Good/excellent, n(%)	2 (100%)	1 (50%)	3 (75%)
Fair, n(%)	0 (0%)	1 (50%)	1 (25%)
Poor, n(%)	0 (0%)	0 (0%)	0 (0%)

DISCUSSION

Many studies have discussed whether the indication for ileal pouch-anal anastomosis depends on patient's age, pointing out the reservations of different centres in recommending this surgical therapy for elderly people. In the course of time, consensus has been reached that the pouch surgery should be advocated in patients with normal anal and pelvic floor musculature. Regarding the general population of elderly people, it is considered that resting anal pressure and maximal squeeze pressure decrease with age. On the other hand, we have to take into perspective the work hypertrophy of the anal sphincter in patients with ulcerative colitis and its role of counterbalance to the decrease of the resting anal pressure and maximal squeeze pressure in elderly patients with ulcerative colitis. Another issue that has to be addressed is the difference between male and female patients. It is accepted that occult sphincter injuries occur in one third of patients with vaginal delivery. Here we identify the weakness of our study, because we refer only to female patients. That is why it was impossible to make this comparison in functional results between the two groups. All of our patients delivered two children each, vaginally and no medical record was available to testify that there was sphincter injury. This absence of medical records does not rule out occult injury. It is important to understand that the elderly population is connected with serious comorbidity before the pouch surgery. Also, Pinto et al. denote that elderly patients have higher re-admission rate (70% vs 40%), mainly due to dehydration caused by high output ileostomy (13). There is a strong evidence indicating that complications, in particular septic complications and pouchitis, may develop several years after the operation and that the probability of a complication occurring increases as the follow up time progresses, often due to erroneous original diagnosis (4). An originally erroneous diagnosis may influence the outcome. Large series of patients show that 15-20% of all colecto-

my specimens removed for ulcerative colitis are described as indeterminate colitis. In our group, two of the colectomy specimens were labelled as indeterminate colitis. We have to underline that our group is very small and we believe that percentage of 50% of patients in the indeterminate group is due to a small number of patients included in the study, and therefore it should not be compared with the small percentage reported by large series. The cumulative risk of complications after ileal pouch-anal anastomosis is greater in the indeterminate colitis group compared to ulcerative colitis group, and become more evident as time elapses (15). Cumulative risk of developing septic complications is almost 25% at 5 years (16). We report two cases of pouchitis occurring in the first year after the operation and both of them were in the indeterminable group. Our percentage of 50% pouchitis should be regarded in the light of very small number of patients in total that are included in the study. Another factor that should be taken into consideration is the fact that it was a case of mild pouchitis occurring only once in the early stage of the postoperative period. Analyzing the demographics shown in Table 1, we have to pay attention to one important parameter: the duration of the ulcerative colitis before the operation. In our study, the mean value was 7 years, however, with very high standard deviation of almost 9.5 years. The range of duration was 2-20 years. We regard the duration of the disease prior to the operation of 20 years as extreme case. In this aspect our results are in the vicinity of the results referred by Fazio et al (2). According to a meta-analysis of 4.183 patients by Lovegrove et al. anastomotic leak occurred in 6.9% and 8.8% in the hand sewn group like ours, pelvic sepsis occurred in 7.2% of patients, pouch related fistulae occurred in 4.7% of patients, and 5.9% in the hand sewn group. 16.8% of patients developed pouchitis following closure of the ileostomy, while structure of the pouch-anal anastomosis occurred in 12.5% of stapled anastomosis like ours. Pouch failure occurred in 5.3% of patients (17). We report only two cases of pouchitis and at the same time neither anastomotic leak nor pelvic sepsis is described. Patients with ulcerative colitis are often taking steroids prior to undergoing proctocolectomy with IPAA. Because steroid use has been associated with a substantially increased risk of anastomotic leakage following large bowel resection (18) several studies have advocated the use of diverting ileostomy with IPAA in patients on steroids (19, 20). Our experience shows that there is no difference between groups of patients who were on steroid therapy and who were not on steroid therapy prior to the pouch formation. We also have to emphasize the fact that it is a very small group of patients that we refer to. Regarding the functional outcomes, Lovegrove et al. meta-analysis showed (17) incontinence to liquid stool in 29.4% of cases. Seepage during daytime was reported in 25.6% and during night-time in 29.8%. A daytime pad usage was reported in 15.5% of patients and a night-time usage in 26.7%, correlating to the higher incidence of nocturnal seepage. Our analysis showed 75% nocturnal seepage, and it is by far higher than the percentage of the meta-analysis. It is important to note that the nocturnal seepage occurred only in the first six months after the closure of the ileostomy and that it significantly improved in the course of time. Many of the studies assessing the quality of life of patients suffer from weaknesses in defining quality of life or in the use of quality of life instruments. Another issue that has to be considered is the cultural inhibition of the patients when referring to their sexual function limitations. We have to take into perspective that elderly population is not very open-minded when talking about sexual issues. According to the data we have gathered there were no limitations in the sexual function.

CONCLUSION

Restorative proctocolectomy with ileal pouch-anal anastomosis in elderly people is a safe procedure with low morbidity rate. Functional results are generally good and patient satisfaction is high.

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FUNKCIONALNI ISHOD I KVALITET ŽIVOTA NAKON RESTORATIVNE PROKTOKOLEKTOMIJE I ANASTOMOZE ILEALNOG PAUČA SA ANUSOM KOD STARIJE POPULACIJE

Gjorgji Jota, Zoran Karadžov, Milčo Panovski, Nenad Joksimović, Andrijan Kartalov, Radomir Gelevski, Vladimir Joksimović

Klinika za digestivnu hirurgiju, Univerzitet Sv Ćirilo i Metodije, Medicinski fakultet, Skoplje, Makedonija

Sažetak

Restorativna proktokolektomija sa anastomozom ilealnog pauča sa anusom je hirurška metoda izbora koja se primenjuje kod bolesnika sa medicinski refraktornim ulcerativnim kolitisom, ulcerativnim kolitisom sa displazijom ili kancerom, ili familijarnom adenomatoznom polipozom (FAP), bez obzira na starosno doba.

Cilj rada bio je da se prikaže naše šestogodišnje iskustvo u izvođenju restorativne proktokolektomije i anastomoze ilealnog pauča sa anusom kod starije populacije u tercijalnom referentnom centru.

Urađen je grafički prikaz za četiri bolesnika koji su podvrgnuti anastomozi ilealnog pauča sa anusom u periodu 2006-2010. Preoperativna histopatološka dijagnoza je bila ulcerativni kolitis. Sakupljeni su podaci koji se tiču demografije bolesnika, vrste i trajanja bolesti, prethodnih operacija i indikacija za hirurgiju. Analizirali smo operativne protokole i postoperativne patološke dijagnoze. Zabeležene su rane (trideset dana nakon operacije) i kasne komplikacije. Bolesnike smo pratili nakon popunjavanja upitnika o godišnjoj funkciji i kvalitetu života, fizičkom pregledu i endoskopskoj evaluaciji pauča.

Postoperativne histopatološke dijagnoze bile su: ulcerativni kolitis (n=2) i neodređeni kolitis (n=2). Prosečna starost operisanih pacijenata iznosila je 59 godina. Prosečna dužina praćenja bolesnika bila je četiri godine. U radu u dva slučaja opisujemo upotrebu steroida pre operacije, kao i dva slučaja sa ekstraintestinalnim manifestacijama. Nije bilo komplikacija sa sepsom; u dva slučaja je zabeležen paučitis. Funkcionalni rezultati i kvalitet života kretali su se od dobrih do odličnih u sva četiri slučaja sa anastomozom ilealnog pauča sa anusom.

Resorativna proktokolektomija sa anastomozom ilealnog pauča sa anusom kod starije populacije je bezbedna procedura praćena niskom stopom morbiditeta. Funkcionalni rezultati su generalno dobri a bolesnici veoma zadovoljni.

Ključne reči: **ulcerativni kolitis, neodređeni kolitis, IPAA, šiveni j-pauč, funkcionalni rezultati, kvalitet života**