

Quality of life, continence and frequency of pouchitis following laparoscopic versus open colectomy and ileal pouch-anal anastomosis: an Irish perspective

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Abstract

Background This study aims to assess quality of life outcomes, continence, rates of pouchitis and predictors of pouchitis for patients undergoing laparoscopic versus open three-stage ileal pouch-anal anastomosis (IPAA) surgery in our institution.

Methods Forty-two patients having had three-stage (IPAA) surgery were identified. One was excluded as they had undergone pouchectomy. A postal questionnaire followed by telephone contact was undertaken. The questionnaire was based on The Gastrointestinal Quality of Life Index (GIQLI) and Wexner/Cleveland Clinic Faecal Incontinence Symptom Severity Scoring Systems.

Aims Our aim was to assess morbidity, quality of life, incidence of pouchitis and continence following restorative panproctocolectomy and IPAA.

Results Thirty-five patients completed the response. The median age at colectomy of our patient population was 32 years. 57 % were male and 43 % were female. 54.3 % of cases were carried out laparoscopically. 8/19 patients who had laparoscopic surgery had pouchitis (42.1 %) versus 9/16 patients who had open surgery (56.3 %). The median Wexner score was 0. Nine patients (25.7 %) had a GIQLI score that was within or above the range reported for healthy controls. The rate of complications was 31.7 % for emergency cases and 25.7 % for elective cases. The rate of pouchitis in this group was 48.5 %. Overall pelvic sepsis rate was 12.8 %.

Conclusions Ileal pouch-anal anastomosis is a successful and well-tolerated procedure with 94 % of patients opting to have the surgery again. Preliminary results do not show any significant difference in the incidence of pouchitis following laparoscopic surgery.

Keywords Ulcerative colitis · Ileal pouch-anal anastomosis · Pouchitis · Quality of life

Introduction

Curative surgery for ulcerative colitis involves panproctocolectomy and formation of ileostomy, with an option of proceeding to ileal pouch-anal anastomosis (IPAA) in suitable patients. In our institution, this is done as a three-stage procedure. The first stage involves subtotal colectomy and end ileostomy. The second stage involves restorative proctectomy, J pouch formation, ileal pouch-anal anastomosis and loop ileostomy. The third stage involves reversal of loop ileostomy. The literature suggests an early morbidity rate of 30 % and a 3–12 % risk of long-term pouch failure [1, 2]. One of the most problematic complications associated with this procedure is pouchitis. The literature has suggested several different factors as predictors in the development of pouchitis. Gender, pre-operative albumin, pre-operative platelet count, fulminant ulcerative colitis, disease proximal to splenic flexure, presence of backwash ileitis, duration of diversion ileostomy and post-operative complications have all been suggested as predictors of pouchitis [3–11]. Our aim was to assess morbidity, quality of life, incidence of pouchitis and continence following restorative panproctocolectomy and IPAA. The quality of life indicators used were the Gastrointestinal Quality of Life Index [12] and Wexner/

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Cleveland Clinic Faecal Incontinence Symptom Severity Scoring System [2].

Materials and methods

A review of the operative database in our institution revealed 42 completed restorative proctectomy and ileal pouch-anal anastomosis procedures from 2000 to 2011. One patient was excluded at this stage as they underwent pouchectomy at a later date. A questionnaire was devised using the Gastrointestinal Quality of Life Index [12] and Wexner/Cleveland Clinic Faecal Incontinence Symptom Severity Scoring System [2]. The GIQLI score was developed in 1995. It is specific to gastrointestinal disease and assigns a score based on symptom frequency and impact on lifestyle. The range of scores for healthy controls during validation was 84.3–88.5 %. The Wexner score ranges from zero to twenty, with zero indicating perfect continence and 20 indicating full incontinence (Table 1). Patients were also asked if they would opt to have this surgery again if given the option.

Thirty-five completed questionnaires were collated and responses were assigned scores based on GIQLI and Wexner score. A chart review of eligible patients was carried out to identify pouchitis predictors and post-operative complications. Statistical analysis was carried out using STATA. All subjects in the study gave informed consent to the work.

Results

Twenty-two patients had elective surgery (52.3 %). 45.2 % of stage 1 procedures were carried out laparoscopically overall, with 85 % of stage 1 procedures carried out laparoscopically since 2007. 54.5 % of elective and 35 % of emergency cases had laparoscopic surgery.

Morbidity

Fourteen patients had complications following stage I. Three patients had abdominal/pelvic collections, three had wound sepsis, four had stoma-related complications, two had bowel obstruction/ileus and two had lower respiratory tract infections. Ten patients had complications following stage II. There were two cases of wound sepsis, one pelvic collection, one peroneal nerve compression, one lower respiratory tract infection, two stoma complications, one bowel obstruction, one fistula and one post-operative leak. Eleven patients had complications following stage III. Three developed ileus, two had wound problems, one developed a pelvic collection, two were readmitted with

Table 1 Wexner/Cleveland Clinic Faecal Incontinence Symptom Severity Scoring System

Type of incontinence	Never	Rarely	Sometimes	Usually	Always
Solid	0	1	2	3	4
Liquid	0	1	2	3	4
Gas	0	1	2	3	4
Wears pad	0	1	2	3	4
Lifestyle alteration	0	1	2	3	4

dehydration, two developed pouch fistulae and one developed a post-operative leak requiring pouchectomy (2 % cases). Pouchectomy rate of 2 % compares favourably with rates in the literature, which describe a pouch failure rate ranging from 5 to 20 % [1, 13–15].

38.6 % of laparoscopic procedures and 20.3 % of open procedures had some degree of post-operative complication. The rate of complications was 31.7 % for emergency cases and 25.7 % for elective cases. Overall pelvic sepsis rate was 12.8 %, compared to rates of 7.5 % described in the literature [15].

Quality of life and continence

The median Wexner score was 0 in 18/35 patients (51.4 %). 4/35 had a Wexner score greater than five. Twelve patients had a Wexner score of between one and five. The mean GIQLI score was 85/116. Nine patients (25.7 %) had a GIQLI score that was within or above the range reported for healthy controls. The median daily frequency of bowel movements was 5.5 (range 1–12). The median frequency of nightly bowel movements was 1.5 ranging from once weekly to six times per night.

Pouchitis

8/19 patients who had laparoscopic surgery had pouchitis (42.1 %). 9/16 patients who had open surgery had pouchitis (56.3 %). Laparoscopic emergency procedures had a pouchitis frequency of 4/7 while open emergency procedures had a pouchitis frequency of 6/9. Laparoscopic elective procedures had a pouchitis frequency of 4/12 while open elective procedures had a pouchitis frequency of 3/7 ($p = 0.42$).

Discussion

Laparoscopic versus open surgery, complications, low pre-operative albumin, low pre-operative platelets, duration of ileostomy, presence of fulminant colitis, gender,

Table 2 Predictors of pouchitis

Predictor	<i>p</i> value
Lap/open	0.42
Complications	0.59
Albumin	0.63
Platelets	0.89
Duration of ileostomy	0.37
Presence of fulminant colitis	0.77
Gender	0.14
Backwash ileitis	0.26
Smoking	0.35

backwash ileitis and smoking have all been suggested as predictors of the development of pouchitis post-operatively. We assessed these predictors using our data and did not find any of them to be statistically significant (Table 2).

The advent of laparoscopic surgery has reduced post-operative recovery time, post-operative pain and improved cosmetic outcomes. It is generally felt to be favourable to open techniques in the surgical management of ulcerative colitis. Patients generally have better post-operative outcomes with laparoscopic versus open surgery. One of our main aims with this study was to assess if laparoscopic surgery, although reducing post-operative stays, improving pain and cosmetic outcomes, might be a positive predictor for the development of pouchitis, which remains one of the most problematic long-term complications of ulcerative colitis surgery. In our study group, rates of pouchitis showed no statistically significant difference between the laparoscopic and open groups. The majority of patients are satisfied with their post-operative outcomes and prefer the pouch to managing an ileostomy.

Post-operative outcomes in our institution compare favourably with the available literature. The majority of patients had a Wexner Score of 0, indicating no problems with continence after their pouch surgery. Ileal pouch-anal anastomosis is a successful and well-tolerated procedure with 94 % of our patients reporting that they would opt for surgery rather than managing their colitis medically. The overall response from patients towards pouch surgery has been favourable, confirming ileal pouch-anal anastomosis to be an acceptable option for surgical cure of ulcerative colitis, in terms of patient satisfaction.

One patient out of the 42 proceeded to pouchectomy at a later date. This particular patient had an elective open procedure. They had multiple medical co-morbidities and a stormy post-operative course following all three stages of surgery. The overall pouchectomy rate of 2 % compares favourably with the literature, which quotes a rate of pouch failure ranging from 5 to 20 % depending on the series.

Overall pelvic sepsis rate was 12.8 %, which is considerably higher than the 7.5 % quoted in an international meta-analysis.

This study has a number of limitations. The sample size is quite small, making statistical trends of any significance difficult to elicit. This was a retrospective study involving review of charts to gather data on complications and presence of suggested predictors of pouchitis. As with all research involving quality of life outcomes, patients' response to questionnaires like ours is inherently subjective and many patient factors other than previous surgery affect quality of life. It is clear that the number of patients enrolled in this study needs to be expanded over the coming years and further information on outcomes and pouchitis predictors can be gathered.

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Conflict of interest The authors have no conflict of interest to disclose.

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