Chapter 6
Which Ulcerative Colitis Patients Should Not Have Ileal Pouch-Anal Anastomosis

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Approximately 10–15 % of patients diagnosed with ulcerative colitis will ultimately require operative management of their disease [1, 2], and proctocolectomy with ileal pouch-anal anastomosis (IPAA) has evolved into the most commonly performed procedure [3, 4]. However, not all patients are best managed by a proctocolectomy and ileal pouch-anal anastomosis, and some are better served by undergoing another operation such as proctocolectomy with end ileostomy. The most appropriate choice of operation is largely predicated upon multiple patient-dependent variables that may impact long-term outcome best measured as health-related quality of life.

PICO table

Patients	Intervention	Comparator	Outcome
Patients with ulcerative colitis requiring operation	Proctocolectomy with ileal pouch-anal anastomosis	Proctocolectomy with end ileostomy	Health-related quality of life (HRQOL)

Search Strategy

A comprehensive literature search of Cochrane Database of Collected Research, EMBASE, MEDLINE, and PubMed was performed to identify all of the English-language publications related to ulcerative colitis, colectomy, and ileal pouch-anal

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anastomosis and quality of life (QOL) outcomes from 1985 to 2015. Key search terms included the following: “colectomy,” “colitis,” “ileal pouch-anal anastomosis,” “inflammatory bowel disease,” “proctocolectomy,” and “ulcerative colitis.” Studies were excluded if they did not directly contrast proctocolectomy with ileal pouch-anal anastomosis to proctocolectomy with ileostomy, failed to measure any component of health-related quality of life, included patients with Crohn’s disease or familial adenomatous polyposis, included only patients with ulcerative colitis plus specific conditions (e.g., primary sclerosing cholangitis), or included pediatric patients. Only the most recent study was included if similar studies from the same institution were encountered. The references of the included studies were reviewed to identify additional studies that were incorporated as appropriate.

Results

Over the past three decades, only a few studies have reported health-related quality of life outcomes in patients with ulcerative colitis undergoing proctocolectomy and ileal pouch-anal anastomosis or ileostomy. Some of the initial studies were plagued by poor methodology using quality of life metrics that had not been validated. However, reports published in past 15 years have tended to use validated global, generic, or disease-specific instruments to measure health-related quality of life [5–12].

Studies that employed global instruments to contrast health-related quality of life between patients who underwent proctocolectomy and ileal pouch-anal anastomosis or ileostomy reported conflicting results. Emblem and associates [5] used a non-validated questionnaire that showed patients managed by an ileostomy were markedly more likely to experience social restrictions. While McLeod et al. [6] found no differences in several global measures, Kuruvilla and colleagues [11] reported the Cleveland Global QOL was significantly better for patients with an ileal pouch-anal anastomosis, particularly related to current energy level and current quality of health.

Of the studies using a generic measure, no difference in scores was found between the two patient groups regardless whether the non-validated “lifestyle satisfaction score,” [7] validated EuroQol Group’s EQ-5D-3 L questionnaire [11], or validated Short Form (SF)-36 Health Survey [9, 10] was used. However, O’Bichere and associates [8] used a questionnaire developed in-house to specifically measure seven selected items, and they found patients with an ileostomy were significantly less bothered by altered bowel emptying and diet.

A disease-specific instrument, the Inflammatory Bowel Disease Questionnaire (IBDQ), was employed in three studies [9, 10, 12] and an abbreviated version, the short (S) IBDQ, was used in another report [11]. No differences in scores were found between the two groups in any of the studies [9–12], but van der Kalk et al. [12] did report ileal pouch-anal anastomosis patients had higher quality-adjusted life years compared to ileostomy patients.

Health-related quality of life is obviously a different outcome measure than morbidity. But, it is interesting that the morbidity rate of ileostomy patients was higher in three of the four studies that reported this outcome parameter [5, 6, 10, 12].

Study	Patients (N) IPAA *vs* Ileostomy	QOL measure	Results IPAA *vs* Ileostomy	Quality of evidence
Emblem [5]	19 *vs* 35	Social restriction	0 % *vs* 67 % (P < 0.05)	Low
McLeod [6]	37 *vs* 28	Direct questioning of objections Sickness-Impact Profile Time trade-off	Comparable Comparable Comparable	Moderate
Liddell [7]	25 *vs* 10	Lifestyle satisfaction	Comparable	Low
O'Birchere [8]	30 *vs* 30	SF-36 Altered bowel emptying Body image Clothes Diet Noise Odor Sexual relationship	Comparable 8 *vs* 5 (P = 0.01) Comparable Comparable 5.5 *vs* 2 (P = 0.02) Comparable Comparable Comparable	Moderate
Nordin [9]	56 *vs* 42	IBDQ SF-36	Comparable Comparable	Moderate
Camilleri-Brennan [10]	19 *vs* 19	IBDQ SF-36	Comparable Comparable	High
Kuruvilla [11]	35 *vs* 24	EQ-5D-3 L Cleveland QOL FIQL SIBDQ	Comparable 0.9 *vs* 0.8 (P = 0.03) Comparable Comparable	Moderate
van der Valk [12]	81 *vs* 48	IBDQ Quality-adjusted life years	Comparable 0.9 *vs* 0.84 (P < 0.01)	High

Recommendations

Patients requiring an operation for ulcerative colitis can undergo proctocolectomy and ileostomy rather than proctocolectomy and ileal pouch-anal anastomosis without compromising their health-related quality of life. (Evidence: moderate; Recommendation: strong)

Patients needing surgery for ulcerative colitis are typically offered a proctocolectomy and ileal pouch-anal anastomosis in one, two, or three stages with the two-stage approach most often employed in elective scenarios. However, this restorative procedure is occasionally contraindicated because of disease-related complications, unachievable for technical reasons, or ill-advised due to excessive risk for operative morbidity or impaired quality of life. In these selected settings, proctocolectomy and ileostomy may be offered, and the patient can be reassured that her/his health-related quality of life will be comparable to that associated with a sphincter-sparing procedure.

Personal View

Patients with colorectal adenocarcinoma complicating their ulcerative colitis need to undergo a sound oncologic operation. If the tumor encroaches upon the sphincter mechanism, excision of the levators and anal canal is usually required, and a sphincter-sparing procedure such as an ileal pouch-anal anastomosis is contraindicated. Colorectal cancers that have metastasized to distant sites are commonly managed with chemotherapy unless bleeding or obstruction mandates resection or diversion. Regardless, a restorative proctocolectomy and ileal pouch-anal anastomosis would be generally contraindicated because it would potentially delay the more important systemic therapy.

Management of adenocarcinomas of the mid or lower rectum penetrating the muscularis propria or involving one or more mesorectal lymph nodes without distant metastases usually entails a combination of chemotherapy, radiotherapy, and resection. If the tumor is situated above the anorectal ring, a sphincter-sparing operation can be performed. However, patients receiving pre-operative external beam radiotherapy are at increased risk for ileal pouch failure secondary to pouch dysfunction [13] despite no significant increase in operative morbidity [14]. Pouch failure also occurs more frequently in patients receiving post-operative radiotherapy [15]. Accordingly, an ileal pouch-anal anastomosis should be likely avoided in many patients with ulcerative colitis and rectal cancer when management requires external beam radiotherapy.

Successful restoration of bowel continuity after proctocolectomy warrants construction of a tension-free ileal pouch-anal anastomosis. Patients with visceral obesity may have a shortened mesentery that physically precludes reach of the ileal pouch to the anal canal. In those where reach can be achieved, the risk for pouch-related complications (e.g., anastomotic separation, anastomotic/pouch stricture, pouch fistula) is generally increased [16–18].

Proctocolectomy and diverted ileal pouch-anal anastomosis is an operation associated with a relative high risk for operative morbidity. Specifically, stricture, pelvic sepsis, and fistula occur in 10.7 %, 7.5 %, and 4.5 % of patients, respectively [19], and hemorrhage complicates 3.6 % of the operations [20]. Patients with cardiac disease, pulmonary disorder, or renal impairment can expect an even greater likelihood

of experiencing a post-operative complication. These co-morbidities in isolation or combination can introduce prohibitive risk that serves as a relative contraindication to proctocolectomy and ileal pouch-anal anastomosis.

Patients with primary sclerosis cholangitis complicating their ulcerative colitis represent a special group of patients because some are at greater risk for compromised outcomes following proctocolectomy with ileal pouch-anal anastomosis. An ileal pouch operation in a cirrhotic with primary sclerosis cholangitis is associated with a high incidence of early post-operative complications such as bleeding (44 %), worsening liver function (31 %), and pelvic abscess (19 %) [21]. Pelvic sepsis is a particular concern in this population because of its link with patient death [21].

Regardless of the degree of liver dysfunction, patients with primary sclerosis cholangitis and ulcerative colitis are at significantly greater risk for acute pouchitis and tend to have worse ileal pouch function compared to those without primary sclerosis cholangitis [22]. Moreover, patients with large duct primary sclerosis cholangitis experience even worse pouch function and a significantly compromised quality of life [22].

Liver transplantation prior to proctocolectomy and ileal pouch-anal anastomosis can ameliorate some problems, and these patients can expect an acceptable risk for operative morbidity and reasonable pouch function [23].

Another cohort of patients who may experience impaired ileal pouch function and diminished quality of life are those with low (<40 mmHg) pre- and post-operative anal sphincter resting pressures. These reduced pressures are associated with an increased incidence of pad usage, seepage, and incontinence as well as reduced quality of life and satisfaction with surgery that do not improve over time [24]. Similarly, patients with pre-operative fecal incontinence unrelated to urgency are not good candidates for an ileal pouch-anal anastomosis because of the same reasons. However, a patient with pre-operative continence despite an anterior sphincter defect does not usually experience a similar outcome [25].

Selected patients with absent proctitis, adequate rectal compliance, and reasonable sphincter strength are potential candidates for colectomy and ileoproctostomy [26]. In these cases, the benefits of less operative morbidity, preserved female fecundity, and reasonable function must be weighed against the risk of neoplasia and recurrent disease. The likelihood of the patient requiring a proctectomy is 16–26 % at 10 years and 31–54 % at 20 years [4].

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