Journal of Crohn's and Colitis (2014) 8, 582–589

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Ileorectal anastomosis in comparison with ileal pouch anal anastomosis in reconstructive surgery for ulcerative colitis — a single institution experience ☆

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Received 1 October 2013; received in revised form 12 November 2013; accepted 13 November 2013

KEYWORDS
Ulcerative colitis;
IRA;
IPAA;
Complications;
Failure

Abstract

Introduction: Ileal pouch anal anastomosis (IPAA) is the standard procedure for reconstruction after colectomy for ulcerative colitis (UC). However, ileorectal anastomosis (IRA) as an alternative has, recently experienced a revival. This study from a single center compares the clinical outcomes of these procedures.
Methods: From 1992 to 2006, 253 patients consecutively underwent either IRA (n=105) or IPAA (n=148). Selection to either procedure was determined on the basis of rectal inflammation, presence of dysplasia/cancer or patient preferences. Patient-records were retrospectively evaluated. Mean follow-up time was 5.4 and 6.3 years respectively.
Results: Major postoperative complications occurred in 12.4% of patients after IRA and in 12.8% after IPAA (ns). Complications of any kind after IRA or IPAA, even including subsequent stoma-closure, occurred in 23.8% and 39.9% respectively ($p<0.01$). Estimated cumulative failure rates after 5 and 10 years were 10.1% and 24.1% for IRA and 6.1% and 18.6% for IPAA respectively (ns). The most common cause for failure was intractable proctitis (4.8%) and unspecified dysfunction (4.8%) respectively. At follow-up 76.9% of patients with IRA had proctitis and 34.1% with IPAA had pouchitis. Estimated cumulative cancer-risk after 10, 20 and 25 year duration of disease was 0.0%, 2.1% and 8.7% for IRA. Figures for IPAA were 0.7%, 1.8% and 1.8% (ns).

☆ Conference presentations: Swedish surgical society; Gothenburg, 2010. ECCO annual meeting; Vienna, 2013.

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1873-9946/$ - see front matter
http://dx.doi.org/10.1016/j.crohns.2013.11.014

Conclusion: Failure-rates did not significantly differ between patients operated with IRA or IPAA. Patients operated with IPAA had a higher cumulative number of postoperative complications. The high long-term cancer-risk after IRA indicates that this procedure should be an interim solution in younger patients.

1. Introduction

Reconstructive surgery after colectomy for ulcerative colitis (UC) was launched by Aylett and colleagues around 1950 by introduction of ileorectal anastomosis (IRA).[1] Concerns about the method were raised, however, after reports on a substantial risk for the development of cancer in the remaining rectum.[2] Due to the advent of the ileal pouch anal anastomosis (IPAA) in the 1970s, the use of IRA was abandoned in most cases of UC.[3] Since then IPAA has become the standard method of reconstruction after surgery for UC.[4,5] Long-term experience with IPAA has, however, revealed some morbidity associated with the procedure as regards impaired continence and sexual function including fecundability as well as pouchitis.[6–9] This together with the knowledge that topical anti-inflammatory treatment and meticulous surveillance of the rectum might reduce the risk for cancer has led to the advocacy of IRA in selected cases.[10–12] Surgeons in Scandinavia have been particularly willing to adopt this approach. We report the failure rates, cancer risks, functional outcome and need for medication in patients operated on with IRA at our institution in comparison with those operated on with IPAA during the same time period.

2. Patients and Methods

Linköping University Hospital is a tertiary referral hospital serving a population of 1.1 million. From 1992 to 2006, 253 consecutive patients with ulcerative colitis (UC) were operated at the surgical department with either ileorectal anastomosis (IRA) or ileal pouch anal anastomosis (IPAA) as the primary reconstructive procedure after colectomy. The diagnosis of UC was based on clinical history, endoscopy and microscopic examination of the colectomy specimen according to criteria of Lennard-Jones.[13] Patient selection to either procedure was determined by the degree of inflammation in the rectal mucosa, presence of dysplasia/cancer or patient preferences. Inflammatory activity at rectoscopy confined to a modified Baron–Ginsburg (BG) 0-1 after topical treatment with 5-aminosalicylic acid (5-ASA) and absence of dysplasia or cancer made patients eligible for IRA.[14] Some patients were accepted for IRA, however, in spite of the presence of dysplasia or even cancer according to their personal preferences. With the exception of these patients, patients not suitable for IRA due to medical reasons or personal preferences were chosen for IPAA. IRA was performed in 105 patients (age 10–75, 34 women) and IPAA in 148 (age 13–65, 52 women). Background data on the patients are presented in Table 1. Patients were regularly seen at least once at the out-patient clinic during the follow-up period until the end of 2008, the return to their county hospital or death. Follow-up, which was recorded in our quality control program, consisted of a clinical examination including an evaluation of function and, when symptoms demanded or the duration of disease was longer than ten years in patients with IRA, endoscopy with biopsies. Follow-up after IRA was scheduled yearly and after IPAA at least every second year. All records have been reviewed retrospectively to collect peri- and postoperative data including 30-day complication rate as well as failure rates, development of dysplasia or cancer, functional outcome, presence of proctitis or pouchitis and medication at follow-up. Complications after surgery were graded according to Clavien–Dindo where complications graded three or more were considered major.[15] Patients were classified on the basis of the most serious complication in the case of more than one complication. Failure was defined as either one of the following events – proctectomy, excision of the ileal pouch, and permanent defunctioning with an ileostomy – or the occurrence of cancer where linkage to the previous surgical procedure could not be excluded. The study was approved by the regional ethics committee in Linköping, Sweden.

2.1. Statistical Methods

Values are given as mean and standard-deviations (SD) unless otherwise stated. The Mann–Whitney-U test and Chi-square test were used when appropriate. Survival

Table 1 Background data on 253 patients undergoing colectomy for ulcerative colitis followed by reconstruction with either ileorectal anastomosis (IRA) or ileal pouch anal anastomosis (IPAA).

	IRA	IPAA	p-Value
	n = 105	n = 148	
Sex			0.64
Male	71 (68)	96 (65)	
Female	34 (32)	52 (35)	
Age at diagnosis (years)	26.9 ± 11.4	26.8 ± 10.3	0.93
Age at colectomy (years)	33.3 ± 14.7	34.2 ± 11.4	0.23
Age at reconstructive surgery (years)	34.2 ± 14.7	35.4 ± 11.3	0.16
Duration of disease at reconstruction (years)	7.2 ± 7.5	8.6 ± 7.7	0.06
Age at follow-up (years)	39.5 ± 15.1	41.7 ± 12.2	0.07
Follow-up time (years)	5.4 ± 3.8	6.3 ± 4.8	0.25

Data are given as mean values ± SD or as numbers (%).