



## Laparoscopic Restorative Proctocolectomy Without Diverting Loop Ileostomy in Patients With Familial Adenomatous Polyposis

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### ABSTRACT

**Background:** Familial adenomatous polyposis (FAP) is a well-known entity for specialist and it has near 100% chance of malignant changes if does not managed surgically. In order to reduce the disadvantages of laparotomy and diverting ileostomy we present our results of laparoscopic total proctocolectomy without diverting ileostomy.

**Objectives:** The aim of this study was to present the results of laparoscopic total proctocolectomy and J pouch ileoanal anastomosis without diverting ileostomy in managing patients with familial adenomatous polyposis (FAP).

**Patients and Methods:** Hospital records of 19 patients who were diagnosed with FAP and underwent laparoscopic restorative proctocolectomy without ileostomy were retrospectively evaluated in this study. Early complications and demographic data were considered.

**Results:** The mean age of patients was 34 years, with a standard deviation of 4.3 years. The most common presenting symptom was rectal bleeding. Two weeks after the operation, no leakage was detected at the site of anastomosis, but some patients experienced temporary diarrhea and fecal incontinence.

**Conclusions:** Laparoscopic total proctocolectomy and J Pouch ileoanal anastomosis without diverting loop ileostomy seems to be a safe procedure in the management of FAP.

### ► Implication for health policy/practice/research/medical education:

This study would be beneficial for all group of medicine, specialty for gastroenterologists and surgeons in their practice and research program.

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## 1. Background

Familial adenomatous polyposis (FAP) is an autosomal-dominant disease induced by a mutation in the APC gene. The disease includes hundreds of polyps throughout the colon and rectum and can progress to malignancies in the colon and rectum. Without surgical intervention, most of the patients will develop colorectal cancer be-

fore the age of 40 (1, 2). So far, the best surgical procedure in the management of FAP is restorative proctocolectomy. All parts of the colon and rectum are removed, and continuity of the gastrointestinal tract is maintained by J pouch ileoanal anastomosis (2-4). To decrease the risk of leakage at the pouch and related morbidity, one study has suggested supplementing the distal anastomosis with proximal diverting ileostomy (5). Temporary ileostomy has some disadvantages, including massive fluid and electrolyte loss, retraction, skin irritation, parastomal hernia, and the need for a second operation to close the ileostomy (6, 7). In addition to these disadvantages,

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tension of the short meso of ilium leads to more tension in the anastomotic site and ileostomy (6, 7). Given the abovementioned complications, some surgeons prefer to perform a total proctocolectomy and J pouch ileoanal anastomosis without diverting ileostomy. In this paper, we present our experience with laparoscopic total proctocolectomy and J pouch ileoanal anastomosis without diverting ileostomy.

## 2. Objectives

The aim of this study was to present the results of laparoscopic total proctocolectomy and J pouch ileoanal anastomosis without diverting ileostomy in the management of FAP patients.

## 3. Patients and Methods

In this cross-sectional study, records of all patients who were diagnosed with FAP and underwent Laparoscopic Restorative Proctocolectomy without ileostomy from October 2008 to May 2011 were evaluated retrospectively. A total of 19 patients were involved in this study. No patients were excluded from the study. Demographic data such as age and sex and disease data such as symptoms, duration, procedure, and early complications were retrieved from the patients' records. The aim was to evaluate early complications related to the anastomotic site. All surgeries were performed by a single surgeon, and the duration of early complications was considered from the time of the hospital stay up to 2 weeks after surgery. Version 16 of SPSS was used to conduct the descriptive statistics for the data analysis.

## 4. Results

A total of 19 patients with a diagnosis of FAP who underwent laparoscopic restorative proctocolectomy without ileostomy were evaluated. The mean age of subjects was 34 years with a standard deviation of 4.3 years and a range of 22 to 40 years. Eight patients (42%) were male and 11 (58%) were female. The most common presenting symptom was rectal bleeding (Table 1), and five patients were diagnosed in a family screening program. All patients were diagnosed by colonoscopic evaluation. In the pathologic report of specimens, which were obtained by colonoscopy, 16 patients had adenomatous polyps and 3 had moderate dysplasia (Table 1). All procedures were conducted laparoscopically, and the specimen was removed by making a small Pfannenstiel incision of up to 5 cm. A J pouch was created by two 75-mm linear cutting staplers, (Ethicon company). Then the J pouch ileoanal anastomosis was performed intracorporally using a 31-mm circular stapler, (Tyco company). The patients did not receive corticosteroids before the operation. The duration of the postsurgery hospitalization ranged from 4 to 7 days. The average time for return to work was 14 days. There were no clinical signs or symptoms of anastomotic leakage in these patients. However, 6 patients (31%) devel-

**Table 1.** Summary of Results

	Patients, No. (%)	P value
Gender		0.11
Male	8 (42)	
Female	11 (58)	
Rectal Bleeding		0.003 <sup>a</sup>
Yes	16 (85)	
No	3 (15)	
Early complications		0.04 <sup>a</sup>
Leakage	0 (0)	
Diarrhea	6 (31)	
Fecal incontinence	2 (10)	
Others	11 (59)	
Diagnosis in family screening		0.039 <sup>a</sup>
Yes	5 (19)	
No	14 (81)	
Pre-operation pathologic results		0.003 <sup>a</sup>
Adenomatous polyps	16 (85)	
Moderate dysplasia	3 (15)	

<sup>a</sup> Significant at 0.05 level in chi-square test

oped copious diarrhea, and 2 patients (10%) experienced fecal incontinence. These complications subsided after 2 weeks.

## 5. Discussion

The most accepted procedure for managing FAP is total proctocolectomy and J pouch ileoanal anastomosis with or without ileostomy. However, total colectomy and iliorectal anastomosis with annual rectal evaluations are also suggested (2-4). One benefit of total proctocolectomy is that all risk of cancer is removed. If ileostomy is used to protect anastomosis, it should be closed after 3 months in a second operation. Creation and closure of an ileostomy has some complications, such as loss of fluids and electrolytes, skin excoriation, retraction of ostomy, and the need for a second operation (6, 7). There are a limited number of studies on open total proctocolectomy and J pouch ileoanal anastomosis without ileostomy. Tjandra *et al.* reported this procedure for patients who had ulcerative colitis but not in patients with FAP. In their report more leakage was detected at the anastomotic site in patients who had received more than 20 mg of prednisolone per day before the operation (8). Gorfine *et al.* showed that open total proctocolectomy and J pouch ileoanal anastomosis without diverting ileostomy was safe in FAP patients (9). Because laparoscopic surgery for colorectal disease has increased significantly in the past decade, the present study evaluated patients who underwent laparoscopy. Our results showed no leakage at the anastomotic site. A significant number of patients (30%) experienced diarrhea and about 10% developed temporary fecal incontinence, but these complications subsided after 2 weeks.

In conclusion, despite the small number of subjects,

which is due to the rarity of this disease in our community, a total proctocolectomy and J pouch ileoanal anastomosis without ileostomy was a safe procedure for FAP patients. However, to increase confidence in this finding, studies with larger sample sizes are needed.

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### Authors' contribution

Ali Mohammad Bananzadeh: Cooperation in surgery and follow-up of patients. Abbas Rezaianzadeh: Analysis of data and writing the manuscript. Leila Ghahramani: Cooperation in surgery and followup of patients. Seyed Vahid Hosseini: Design of the study and coordination the programme.

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