ABSTRACT

Objective: We describe herein the results of 2 laparoscopic operations to treat patients with familial adenomatous polyposis (FAP).

Methods: Two female FAP patients, aged 32 and 29 years old, were treated with restorative proctocolectomy and total colectomy with ileorectal anastomosis (hand-assisted laparoscopic surgery), respectively.

Results: The operative time was 360 minutes for the restorative proctocolectomy and 150 minutes for the total colectomy with ileorectal anastomosis. The blood loss was 500 cc for the restorative proctocolectomy and minimal for the total colectomy patient. The return of bowel movements took 3 days for each patient, and no complication occurred. Patients were discharged on the 15th and 7th postoperative days.

Conclusion: A laparoscopic approach for restorative proctocolectomy or total colectomy with ileorectal anastomosis is safe and technically feasible, and provides good cosmesis.

Key Words: Laparoscopy, Restorative proctocolectomy, Laparoscopic colectomy, Familial adenomatous polyposis.

INTRODUCTION

Familial adenomatous polyposis (FAP) is an inheritable disease in which the colon is involved with innumerable adenomatous polyps. If left untreated, 1 or more of these polyps will progress to colorectal cancer. Handford described the association with cancer in 1890. Surgical intervention is required for patients with polyps, and the procedure is purely prophylactic. Restorative proctocolectomy and total abdominal colectomy with ileorectal anastomosis are the main surgical options for these patients. Recently, the application of minimally invasive surgical techniques has expanded to large bowel resections. Several studies have demonstrated the advantages of laparoscopic colectomy, including the earlier return of intestinal function, less wound pain, and good cosmetic results. The laparoscopic approach for FAP patients has been reported, confirming these findings.

We report our limited experience with laparoscopic restorative proctocolectomy with ileal pouch-anal anastomosis and hand-assisted laparoscopic surgery (HALS) total colectomy with ileorectal anastomosis.

METHODS

Two female patients, aged 32 and 29 years, suffered with FAP and were advised to undergo prophylactic surgery. The 32-year-old patient underwent a laparoscopic restorative proctocolectomy with ileal pouch-anal anastomosis. The 29-year-old patient received a hand-assisted laparoscopic surgery (HALS) total colectomy with ileorectal anastomosis. The indication for this procedure is fewer rectal polyps, no colon cancer, and being compliant with follow-up.

The technique used for laparoscopic restorative proctocolectomy with ileal pouch-anal anastomosis is as follows:

1. the patient was in the lithotomy position;
2. pneumoperitoneum was created using the open method through the umbilical hole;
3. another 3 ports were set over the left midclavicle line near the umbilicus level, right midclavicle line near the McBurney point, and low midline 2 fingers breadth (FB) above the pubic bone;
4. the inferior mesenteric vessels were ligated and divided; the sigmoid colon and rectum were mobilized;
5. the middle colic vessels were divided;
6. the mesentery was mobilized away from the retroperitoneum by using a medial to lateral approach. The omentum was dissected free from the transverse colon;
7. the rectum was mobilized down to the pelvic floor laparoscopically;
8. a larger Pfannenstiel incision with muscle splitting was performed. The ileal pouch was then created, and the anastomosis was performed with the hand sutured method;
9. a diverting loop ileostomy was placed at the right lower quadrant through the right-side port.

The HALS technique used is the following:

1. a 4 finger breadth (FB) Pfannenstiel incision along the skin crease and 4 FB incision above the pubic bone were made;
2. the LAP DISC was placed;
3. the umbilical port was set for optic view, and another working port was made at the left midclavicle line at the umbilicus level;
4. the pneumoperitoneum was set;
5. mobilization of the colon was begun from the hepatic flexure area, then middle colic vessels were divided, and the omentum was dissected free from the transverse colon;
6. the right side colon was mobilized;
7. the left colic vessels were divided, and the splenic flexure, sigmoid colon, and rectum were mobilized;
8. division of the rectum and terminal ileum was made through the Pfannenstiel incision;
9. the ileorectal anastomosis was performed with the double stapling technique.

RESULTS
We have been performing laparoscopic operations for colorectal disease since July 1998. The restorative proctocolectomy operation was the 77th of those procedures. It took 6 hours to complete with estimated blood loss of 500 cc, no postoperative complications, and the patient was discharged on the 15th postoperative day. The HALS total colectomy with ileorectal anastomosis operation is the most recent one with a 2-hour 30-minute operative time and minimal blood loss. The patient was discharged on the 7th postoperative day. The passage of flatus occurred on the 3rd postoperative day for the 2 patients.

DISCUSSION
Three prophylactic treatment options are widely accepted for FAP, which are total proctocolectomy with end ileostomy, restorative proctocolectomy, and total colectomy with ileorectal anastomosis. For patients who are younger, have good compliance to further follow-up, and require less rectal sparing, total colectomy with ileorectal anastomosis is the treatment of choice. Of those patients, most will be candidates for the laparoscopic approach. Milsom et al reported a series of 16 patients receiving laparoscopic total abdominal colectomy with ileorectal anastomosis for familial adenomatous polyposis with a mean 232-minute operative time and minimal blood loss. Only 1 operation-related complication was found, so Milsom et al emphasized that such an operation is an appealing option for managing patients with FAP. We used the hand-assisted laparoscopic surgery technique for the same option. HALS was first described to perform splenectomy, then vertical band gastroplasty and colectomy for colonic diverticular disease were also reported. The main advantage of HALS rather than the entire laparoscopic procedure is for more difficult cases, and it may offer an optional procedure in laparoscopic surgery. The incision for the hand port is very important. A transverse incision over the lower abdomen is an ideal site for total colectomy or proctocolectomy, which is what we used for our patient. Good cosmetic results are still achieved.

Laparoscopic restorative proctocolectomy has been reported for ulcerative colitis patients with a median 7 day in-hospital stay. Marcello et al described a case-matched study comparing laparoscopic restorative proctocolectomy with the open method. They noted no intraoperative complication in either group and no conversions in the laparoscopic group. The operative times were significantly longer in laparoscopic cases, but return of bowel function was quicker and the length of hospital stay was shorter in laparoscopic cases. The complication rate was similar in both groups. So Marcello et
al concluded that a laparoscopic approach to restorative proctocolectomy has the potential of becoming an appealing alternative to conventional restorative proctocolectomy surgery.

In the present study, the laparoscopic restorative proctocolectomy was successfully completed in this case with acceptable blood loss 500 cc and no complications. When comparing the techniques in performing other laparoscopic colorectal operations, this laparoscopic restorative proctocolectomy needs further advanced methods, such as division of the middle colic vessels and mobilization of the transverse colon.

CONCLUSION

Laparoscopic operations for FAP patients, either restorative proctocolectomy or total colectomy with ileorectal anastomosis, are technically feasible, safe, and offer good cosmesis.

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