

## CLINICAL STUDY

# Surgical interventions in patients with chronic constipation refractory to intensive medical treatment

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**Abstract:** *Introduction:* Management of patients with chronic constipation (CC), irresponsive to medical treatment, is very difficult. There are some surgical approaches reported for the treatment. In this study we aimed to assess the results of different surgical procedures in patients with severe CC who were refractory to intensive medical treatments.

*Methods:* Fifteen patients with refractory chronic constipation underwent surgical management between 1998 and 2003 in Ankara University School of Medicine Department of General Surgery.

*Results:* Median age of the patients was 40 years (range, 24–77), female/male ratio was 11/4, median duration of symptoms was 13 years (range, 4–35 years) and median interval of two subsequent bowel movements was 15 (range, 5–30) days. Preoperative evaluation including barium enema, colonoscopy, colonic transit time, and cindefecography and balloon expulsion test were done in all patients. Clinical analysis of constipation with these tests indicated a simple slow transit colon in three patients but more complicated variations of combined anatomical functional disorders in the rest of the cases. Surgical procedures consisted of total colectomy, Frykman-Goldberg procedure, Wells procedure and appendisostomy, laparoscopically in 8 of them. Deep vein thrombosis developed in the postoperative period after rectopexy and pelvic floor repair in one case. The median follow-up time was 5.5 years. Fourteen (93.3 %) patients had an excellent bowel movement and were highly satisfied with the surgical management.

*Conclusion:* Surgical interventions may be beneficial in selected patients with refractory chronic constipation (Tab. 2, Ref. 13). Full Text (Free, PDF) [www.bmj.sk](http://www.bmj.sk).

**Key words:** chronic constipation, surgical management, refractory constipation.

Chronic constipation (CC) is a condition that is commonly associated with symptoms interfering patients' quality of life such as abdominal discomfort (1). Patients with severe symptoms, who are irresponsive to medical management, have been reported to respond to surgical interventions (2, 3). The aim of this study was to assess the results of surgical treatment in patients with severe CC who were refractory to the intensive medical approaches.

## Patients and methods

Chronic constipation was defined in accordance with the Rome II diagnostic criteria for functional bowel disorders (4). All patients with chronic constipation were evaluated using an algorithm starting with medical history, physical examination, barium enema and colonoscopic examination for any obstructive lesions such as tumors. Patients who were refractory to medical treatment including domperidone, supplementary cellulose, stimu-

lant laxatives such as senna, 5-HT<sub>4</sub> agonist (Zelmac<sup>®</sup>), and underwent a surgery for severe CC were included in this study by retrospective evaluation of surgical patient records between 1998 and 2003 at the Ankara University School of Medicine, department of general surgery. All patients provided a written informed consent before the surgical procedure. Due to the retrospective nature of the study, no local ethical committee approval was sought.

The medical history of constipation and a routine physical examination including sphincter tone, failure of puborectalis to relax on straining were performed in all patients. Then, a colonic transit time, defecography (5) and balloon-expulsion test (6) was done for the differential diagnosis of slow transit constipation (STC) and pelvic floor disorder (PFD). The colonic transit time was assessed using Sitz-Mark's gelatin capsules (7). Patients were evaluated every three months for the first year and every six months for a satisfaction degree. We used a scoring system to evaluate the satisfaction degree of the patients ("0" too bad, "1" bad, "2" moderate, "3" good, "4" excellent).

No statistical comparison was done in the study.

## Results

Between 1998 and 2003, fifteen patients who underwent surgical management at our hospital were reviewed. Female/male ratio was 11/4; median age was 40 (range, 24–77) years. The median

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**Tab. 1. Patients Characteristics.**

Median follow-up duration (range)	5.5 years (3–7.5 years)
Median age (range)	40 (24–77) years
Gender (Female/Male)	11/4
Median interval of two subsequent bowel movements before surgery (range)	15 (5–30) days
Median duration of symptoms (range)	13 (4–35) years
Number (%) of patients with different types of constipation	
Pure slow transit constipation (STC)	3 (20)
Internal intusseption	4 (26.7)
Pelvic floor disorder (PFD) + STC	4 (26.7)
Internal intusseption + PFD	2 (13.4)
Enterosel + sigmoidosel	1 (6.6)
Sigmoidosel + PFD	1 (6.6)

duration of symptoms was 13 (range, 4–35) years, and the median interval of two subsequent bowel movements was 15 (range, 5–30) days. Three patients (20 %) had pure STC, 4 patients (26.7 %) had rectal outlet obstruction due to internal intusseption, 4 patients (26.7 %) had STC and PFD, 1 patient (6.6 %) had sigmoidosel and PFD, 1 patient (6.6 %) had enterosel and sigmoidosel, and 2 patients (13.4 %) had internal intusseption and PFD. Patient characteristics are shown in the Table 1.

Three patients with pure STC underwent a total colectomy plus ileorectal anastomosis (two of these were performed by laparoscopy). Surgical procedures of all patients are given in the Table 2.

While in 2 out of 4 patients with internal intusseption, a conventional Frykman Goldberg procedure was performed, one patient underwent a laparoscopic Wells procedure and one patient underwent a laparoscopic Frykman Goldberg procedure (FGP).

While 3 elder patients with STC and PFD and possible psychiatric disorder underwent a laparoscopic appendisostomy, another one had a total colectomy plus ileorectal anastomosis.

Laparoscopic FGP was performed in 2 patients with internal intusseption and PFD.

FGP and levatoroplasty was performed in two patients; in one enterosel plus sigmoidosel and in the other sigmoidosel plus PFD.

The median follow up was 5.5 years (range, 3–7.5 years). Fourteen of the patients (93.3 %) had excellent to good bowel control at their last visit. Excellent bowel control was defined as rounded up to 1 bowel movement per day.

All of the three patients with appendisostomy had an excellent bowel control. A cathartic bowel movement was observed in 5 to 10 minutes following an antegrade enema with 250 to 1500 mL of tap water in room temperature in all three patients. The patients were informed to adjust the amount of water and frequency of enema in regard to their diet. No fluid and electrolyte abnormality was detected during the follow up. Two out of three patients were highly satisfied with the outcome however one patient continued to feel abdominal symptoms despite a perfect evacuation.

**Tab. 2. Surgical procedures in patients with chronic constipation.**

Type of surgical procedures	n	%
Total colectomy + ileorectal anastomosis laparoscopic	2	13.4
open surgery	2	13.4
Frykman-Goldberg procedure laparoscopic	2	13.4
open surgery	5*	33.2
Laparoscopic Wells procedure	1	6.6
Laparoscopic appendisostomy	3	20

\* Two patients underwent the Frykman Goldberg procedure with levatoroplasty.

While 1 out of 2 patients who underwent an open total colectomy and ileorectal anastomosis was satisfied, the other patient – a 67 years old man with STC plus PFD – was not satisfied and eventually underwent a permanent ileostomy. Other two patients who underwent laparoscopical total colectomy and ileorectal anastomosis had an excellent bowel control.

Seven patients who underwent FGP were highly satisfied with the outcome. However, one of them who underwent laparoscopical FGP, (with internal intusseption and PFD) continued to feel abdominal symptoms despite a perfect evacuation.

One patient who underwent laparoscopical Wells procedure (with internal intusseption) continued to feel abdominal discomfort despite a perfect evacuation.

In one patient with sigmoidosel and PFD who underwent FGP plus levatoroplasty, a deep vein thrombosis in the lower extremity and an incisional hernia developed late after the operation. These complications were resolved by anticoagulant treatment and hernia repair surgery. No surgery related mortality was seen.

## Discussion

Planning prospective studies related to surgery in refractory constipation is very difficult due to the small number of patients. In our study, different surgical interventions including total colectomy, appendisostomy, Frykman Goldberg procedure and Wells procedure with or without laparoscopy were performed in 15 patients with a resistant CC. Our patients' satisfaction rate was 93.3 %. The patient, who ended up with a terminal ileostomy, experienced abdominal symptoms and feeling of an incomplete evacuation even after total colectomy and ileostomy.

In the patients with CC, a thorough medical history, physical and laboratory examination, colonoscopy and barium-enema examination should be done to rule out the secondary causes of constipation. For the refractory constipation with a slow transit colon, the total colonic resection and ileorectostomy may be considered only if the patient does not have a defecatory disorder. When the surgical treatment was performed according to results of anorectal physiological diagnostic tests and patient's psychological status, successful clinical outcomes might be achieved (8).

Pluta et al have reported an excellent satisfaction rate of 71 % after surgery and the improvement rate in quality of life of 21 % in the patients with CC (9). In the same study, a dissatisfaction

rate was reported to be 8 %. In another study, Rantis et al have performed different surgical approaches in 12 patients with CC and have reported a success rate of 83 % (10). In addition, FitzHarris et al has reported a satisfaction in 67 % of 112 patients with CC (8), while Christiansen et al have demonstrated a satisfaction rate of 82 % after subtotal colectomy (11). Patient satisfaction rate after colectomy was highly variable between 40 and 100 % according to a recent review of 32 studies (12). In that review, it is emphasized that surgery might be contraindicated in patients who had a high rectal volume tolerability. We included the rectal sensation test in our algorithm for the evaluation of patients' candidate to surgery. Preliminary reports suggest that the laparoscopic subtotal colectomy may be as effective as open surgery (13). In our study, laparoscopic surgical procedures were done in 8 of the patients. And we decided to prefer laparoscopic surgical procedures in suitable cases in the future.

The most common complications after the surgery in patients with CC are known to be obstruction of the small bowel, diarrhea, and incontinence. Generally, it was emphasized that the diarrhea and incontinence improved after the first year (8–12). In our patients, these postoperative complications did not develop. But in one patient a deep venous thrombosis and postoperative hernia developed. One should keep in mind that despite the prophylactic sequential compression stockings and fractioned heparin when needed, a deep vein thrombosis might still be a problem after pelvic surgery.

In conclusion, despite the small number of study population, presented study showed that surgical management might be effective and satisfactory with an acceptable morbidity in patients with refractory chronic constipation, in selected patients. We conclude that multicenter prospective studies are needed in patients with chronic constipation refractory to medical treatments.

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