Comparison of long-term quality of life in patients with diverticular disease. Are there any benefits to surgery?

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Abstract: Background: This study focused on the quality of life in patients who were treated in the past for complicated diverticulitis. We compared the effectiveness of conservative and surgical therapy. Methods: Between January 2000 and December 2005, 123 patients were treated for complicated diverticulitis in our ward. Five to ten years later these patients filled in the Gastrointestinal Quality of Life Index questionnaire. The results were evaluated with the Mann Whitney U test and Pearson chi square test. Result: We compared conservatively treated patients (49) with patients after sigma resection (27). On average, 7 years after the stay in hospital there were practically no differences in quality of life - 107 in the conservatively treated group versus 109 in the operated group. We counted the number of readmissions, which were higher in the conservatively treated group (34% vs 19%), but not statistically significant (p = 0.7). Notable adverse effects of resections were incisional hernias that were a reason for another surgery in 30% of cases. Conclusion: The kind of treatment does not appear to influence the long term quality of life in patients with diverticulitis. We can conclude that long term quality of life should not be a reason for surgery.

Keywords: Diverticulitis • Quality of life • Elective sigma resections

1. Introduction

Diverticulosis of the colon is an acquired condition that results from herniation of the mucosa through sites of low resistance in areas of vascular passage defects of the colonic wall. Colonic diverticula are pseudodiverticula, because the mucosal herniation involves only the mucosal and submucosal layers.

Epidemiological studies have revealed that diverticular formation of the colon is primarily a disease that occurs in industrialized countries. Diverticula can occur anywhere, and the segment of the colon involved varies with geography [1]. In western countries, diverticula occur mainly in the left side of the colon, with up to 90% of patients having involvement of the sigmoid colon. The right-sided form is predominant in Asia. Approximately 60 percent of humans more than 60 years of age living in developed countries will develop colonic diverticula. The condition became prevalent after the 1920s, possibly associated with a decrease in fiber intake. Postmortem studies reveal that it is rare prior to age 40 years, but increases with age so that one can estimate that by age 80 years approximately 65 percent of adults have diverticula of the colon. Most patients with diverticulosis remain asymptomatic throughout their lifetime, and only 25% to 30% develop symptoms at some stage [2].

Diverticular disease produces a wide range of clinical presentations, varying from minimal clinical discomfort to life-threatening complications. The complications of diverticular diseases could be categorized as either inflammatory conditions (diverticulitis with associated abscess, perforation, fistulization) or non-inflammatory conditions (lower gastrointestinal bleeding, benign stricture). The most frequently used classification is the Hinchey score, or in German-speaking countries, the Hansen-Stock
classification. Hinchey stage I means acute phlegmonous diverticulitis without complications; Hinchey stage II, diverticulitis with paracolic abscess without perforation; Hinchey stage III, diffuse purulent peritonitis; and Hinchey stage IV, diffuse fecal peritonitis [3].

Uncomplicated diverticulitis is in the domain of conservative therapy, consisting of bowel rest and antibiotics [4]: 60% of patients treated for a first episode of acute diverticulitis will recover and have no further clinical problems. Hinchey I could be handled exclusively in a conservative manner. Bleeding usually ceases spontaneously. Hinchey II may be drained under computed tomography (CT) control, and then the patient does not need immediate surgery [5,6]. Complicated diverticulitis, mainly Hinchey III and IV, is the domain of surgical treatment [7]. The goal of elective surgical therapy is to achieve long-term cure, defined as normalized bowel habits and absence of abdominal symptoms. Elective colectomy should prevent recurrent diverticulitis, which may be associated with a high mortality rate. The timing of elective surgery is controversial, but it is usually recommended after the second episode [8]. However, we should proceed more rapidly with immunocompromised patients, patients with diabetes mellitus, and those in whom cancer cannot be ruled out [9].

The aim of this study is to evaluate the impact of colonic resection on the long-term quality of life of patients with diverticular disease.

2. Patients and methods

2.1. Patients

This study enrolled all patients who were treated for complicated diverticulitis in the surgery ward at Hospital Vsetín from January 2000 to December 2005, younger than 90 years at the time of hospitalization. The diagnosis of diverticular disease was based on barium enema or colonoscopy. Complicated diverticulitis was estimated by computed tomography (CT) or ultrasound (US), laboratory results and perioperative findings.

Patients with other bowel diseases such as Crohn’s disease, ulcerative colitis or colon cancer were excluded. Patients with Hinchey stage I were treated conservatively. For Hinchey II, we tended to drain the abscesses, but two of the patients underwent surgery. Some of the patients at this stage were later indicated to have elective surgery. The patients with diffuse purulent and stercoral peritonitis were operated on immediately. Patients with recurrent attacks of diverticulitis or with severe defecation problems, sigma stenosis, chronic abdominal pain or recurrent bleeding underwent elective sigma resection.

2.2. Conservative treatment

Medical therapy included fasting, parenteral nutrition, usually combined with antibiotics (combination of these antibiotics: amoxicillin + clavulanate, gentamicin, metronidazole, sometimes later changed to rifaximin). US-guided or CT-guided percutaneous drainage was attempted in the event of an isolated abdominal abscess. Endoscopic hemostasis was attempted when there was rectal bleeding. After the patients’ discharge, a fiber-enriched diet was recommended.

2.3. Operative technique

The patients who were admitted for elective surgery were treated with primary anastomosis. In the acute state, we performed a one-stage procedure as well, but we also performed a few months later a Hartman operation or just diversion of the stoma and resection.

We performed the surgery through a midline incision, followed by mobilization of the colon, the abortion of the vascular pedicle. The extension of the resection was decided intraoperatively depending on the involved tract (sigmoidectomy or left hemicolectomy). A colorectal end-to-end anastomosis was then carried out.

Hartmann’s operation, the resection of affected sigmoid colon, with closure of the rectal stump and formation of an end colostomy, was used in urgent cases.

Once the transversostomy was accomplished, the sigma resection followed 3 months later.

2.4. Quality of life evaluation

Quality of life was assessed by the Gastrointestinal Quality of Life Index (GLQI). We chose the GLQI questionnaire for its comprehensiveness and orientation to gastrointestinal symptoms, but at the same time, it seeks to evaluate all dimensions of human life quality. The GLQI was developed by a board of experts to measure quality of life in patients with gastrointestinal diseases, particularly those undergoing an operation. It quantifies 36 items within 5 main categories: gastrointestinal symptoms (19 questions), physical condition (7 questions), emotions (5 questions), social function (4 questions), and effect of medical treatment (1 question). Each question requires a response between 0 (least desirable option) and 4 (most desirable option); the total maximum score attainable by summation of all the responses is 144 points (the maximum score in each domain is: 76 - symptomatic, 28 - physical function, 20 - emotions, 16 - social function, 4 - medical treatment). It has previously been proposed that a change in score of 20% is clinically relevant [10,11]. In the original report, a healthy control population scored 125.8 points. The French version of the questionnaire similarly resulted in 126 points [12].