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Research Article

Colonic diverticulitis in young patients

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Abstract:

Background: No consensus exists regarding elective surgery in young patients with diverticulitis. We hypothesized that most young patients with diverticulitis do not require colectomy after the first event.

DESIGN: We conduct a single-institution retrospective study using the hospital records and a phone survey. Fifty-four patients younger than 40 were treated for acute diverticulitis between years 2000-2013. We measure outcome by mean of subsequent hospitalizations after the first attack, continuing symptoms, and the need for emergency or elective colon surgery.

Results: 17 patients had right and 37 left colon diverticulitis. The mean age was of 33.2 and the mean follow-up was of 6.5 years. Most patients with right-sided disease suffered from solitary cecal diverticulitis (n=14), most of them were discovered intra-operatively for suspected appendicitis. Three patients had ascending colon diverticulitis and were successfully managed with antibiotics. 78% of the patients with left sided diverticulitis (n=29) didn't had recurrence but 2 patients ultimately underwent elective sigmoidectomy because of continuing symptoms. There were 6 patients with one or two recurrences, 2 of them underwent elective colectomy. One of the two patients with three or more recurrences required emergent sigmoidectomy during the 3rd attack. No patient with left sided diverticulitis required an emergent operation during the first episode. The first attack was more severe and hospital stay was longer in the group with recurrent disease than in the group without recurrence.

Conclusions: Colonic diverticulitis in young people is usually a mild disease and few patients suffer recurrent disease. We recommend elective segmental colectomy for patients with continuing symptoms in the ambulatory setting and for the group of patients with a more severe first attack who suffer from recurrent episodes.

Keywords: Diverticular disease

Background:

Diverticular disease is common in Western countries. The prevalence of the disease increases with age. Diverticulosis is founded in 30 percent of population at age 60 and in 65% of those 80 years and older.[1] Diverticulitis occurs in 10-25% of diverticulosis patients but is very unusual in patients younger than age 40. Earlier studies reported a higher risk of severe computerized tomography (CT) graded infection, complications and recurrent or persistent disease in young patients.[2]

In the past, elective colectomy was recommended for patients younger than age 55 after a single attack of acute diverticulitis[3] because of the higher cumulative risk of recurrent diverticulitis (>50%) and serious complications (23%) with advancing age.[4]

Currently, there is no clear consensus regarding the indications for elective colectomy in younger patients with a history of diverticulitis.

The 2011 position statement of The Association of Coloproctology of Great Britain and Ireland recommended making the decision for colectomy on an individual case basis.[5] The 2014 clinical practice guideline for sigmoid diverticulitis prepared by the American Society of Colon and Rectal Surgeons Task Force states that elective resection based on young age (<50 years) is no longer recommended.[6]

We hypothesized that routine colectomy for diverticulitis patients younger than age 40 is unnecessary in the absence of recurrent disease.

Materials and Methods:

We retrospectively searched all computer-based and archived paper-based hospital records for patients 18-40 years old who were hospitalized in years 2000 to 2013 with ICD-9 code 562.11 [Diverticulitis of colon].

Patients with symptoms and signs suggestive of colonic diverticulitis and confirmatory radiological or histological findings were included in the study. The diagnostic radiologic criteria were defined as increased wall thickness of the colon and pericolic fat stranding with or without evidence of diverticula on the abdominal CT exam taken during the first admission. Histopathologic confirmation of inflammation of a diverticulum in the operative specimen was considered to be diagnostic.

The severity of the first attack was assessed by core temperature, leukocyte blood count and by the Hinchey[7] grade based on the radiologic or operative findings (highest score) and the duration of hospitalization.

Recurrent attacks were identified by review of the medical record about new hospitalizations subsequent to the initial episode of diverticulitis. We didn't require new radiologic evidence of inflammation in the context of recurrent symptoms to make the diagnosis. Re-hospitalization within one month of discharge was not considered a recurrent attack.

Colonoscopy findings following the first attack were obtained from the OFEK database – an integrated hospital-community on-line information system, containing computerized medical data from a variety of sources (e.g., laboratories, diagnostic systems and computerized medical records). We also performed a telephone survey to assess continuing symptoms and additional endoscopies, hospitalizations, or operations at other institutions.

The study received approval from our institutional independent ethics committee. No patient consent form was required.

Results:

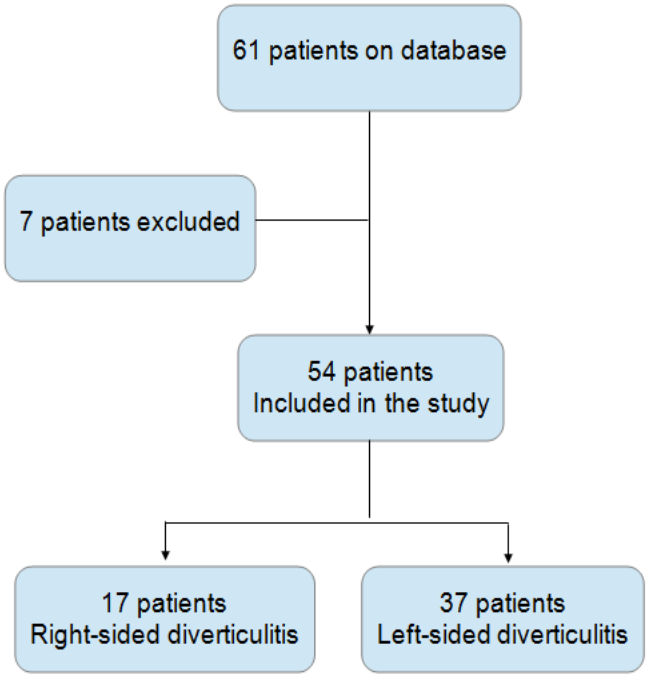

FIGURE 1: Flowchart of the study

61 files were identified with a diagnosis of diverticulitis. 7 patients were excluded from the study because of failure to fulfill the diagnostic criteria. A total of 54 patient records were therefore available for analysis. 17 patients suffered from right-colon diverticulitis and the 37 others from left-sided colonic diverticulitis. We will analyze these two groups separately. No deaths occurred in this study.

Right-sided diverticulitis (Figure 2)

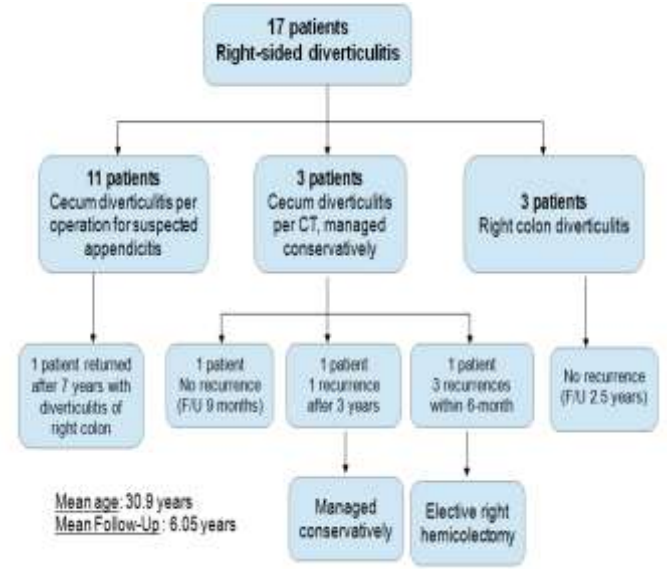

FIGURE 2: Course of the disease in patients with right colon diverticulitis. F/U: follow-up

13 patients were men and 4 patients were women. The mean age at first presentation was 30.9 (range 18-40) years.

Fourteen of the 17 patients with right colonic diverticulitis actually had solitary cecal diverticulitis. Most of these patients (11) had a preoperative diagnosis of appendicitis and the correct diagnosis was made at operation. All patients underwent resection of the inflamed diverticula and the diagnosis was confirmed by pathologic exam of the specimen. With a mean follow-up of 8 years, 90% (n=10) remained asymptomatic. One patient developed ascending colon diverticulitis seven years after his cecectomy. The diagnosis of solitary cecal diverticulitis was made pre-operatively by CT exam in 3 patients; all were treated successfully without surgery during their first hospitalization. One of them had three recurrences of cecal diverticulitis in a six-month period after discharge and subsequently underwent an elective right hemicolectomy.

The three other patients with right-colon diverticulitis have been hospitalized with a CT-based diagnosis of ascending colon diverticulitis (not solitary diverticulitis of the cecum). With a mean follow-up period of 2.5 years, none of them suffered recurrent symptoms.

Left-sided diverticulitis (Figure 3)

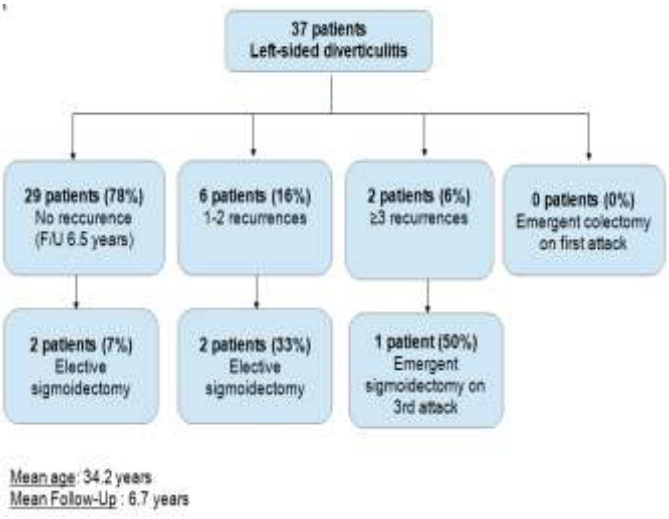

FIGURE 3: Course of the disease in patients with left colon

diverticulitis. F/U: follow-up

32 patients were men and 5 patients were women. The mean age was of 34.2 (range 21-40 years). None of the patients required emergency surgery during the initial admission. The average follow-up of them was of 6.7 years (median: 6.4 years, range: 1 month-13.5 years).

During the period of the study, 29 patients (78%) were hospitalized just once because an attack of acute diverticulitis. According to the phone survey and medical records, 90% of these patients (n=26) remains asymptomatic after discharge. Three patients reported chronic abdominal pain after discharge and two of them (7% of patients with a single hospitalization with acute diverticulitis) required elective sigmoidectomy.

Six patients had one or two other hospitalizations because of new episodes of diverticulitis. Two of them (33%) underwent elective colectomy after the first recurrence. The four other patients remain asymptomatic with a mean follow-up period of 8.6 years.

Two patients (6%) had three or more recurrent hospitalizations because of acute diverticulitis. One patient underwent an emergent sigmoidectomy with primary anastomosis during his 3rd recurrent episode because of failure to improve with conservative therapy. The other patient had 5 recurrences but did not require colectomy.

Overall, the data on colonoscopy findings was found in 21 left-sided diverticulitis patients (57%). 29 patients (78%) had endoscopic or CT evidence of left sided diverticulum. No malignancies were identified in our study.

Severity of Illness

TABLE: Clinical and laboratory characteristics of patients with left colon diverticulitis. T: temperature, WBC: white blood cells

Data on first hospital admission	No recurrence (n=29)	1-2 recurrences (n=6)	≥3 recurrences (n=2)	Overall (n=37)
Mean age (years)	34.7	34.5	25.5	34.2
Male sex (%)	83	100	100	87
Fever (T>37.5°C) (%)	7	17	50	11
Leukocytosis (WBC>11 K) (%)	35	50	50	38
Hinchey grade I-II : III-IV (%)	100:0	100:0	100:0	100:0
Mean hospital stay (days)	3.8	7	5	4.4

The clinical data used to assess the severity of the first attack are summarized in the Table. 83% of the patients without recurrence were men and 17% women. None of the patients requiring hospitalization for recurrence were women. The mean age of the patients with 3 or more recurrent episodes of diverticulitis was 25.5 compared with 34.7 years for patients without recurrence. Leukocytosis and fever were common findings at the first hospitalization in patients with more recurrences: 35% had leukocytosis and 7% presented with fever in the group of patients without recurrence versus 50% with leukocytosis and fever finding in patients with 3 or more recurrences. All of the patients in this study had uncomplicated diverticulitis (Hinchey grade I) when they first presented for care.

The mean hospital stay was highest in patients who suffered one or two recurrences.

Discussion:

The lack of randomized control trials comparing observation and elective colectomy in young patients with diverticulitis complicates the decision making process. Current guidelines suggest each decision about elective colectomy to be made on individual basis.[5,6]

Right colon diverticulitis is rare in young patients. Almost all patients in our study with right-sided pathology had solitary diverticulitis of the cecum. The majority of cases were found at operation because of presumed appendicitis. The three patients with CT findings suggestive of solitary diverticulitis of cecum were successfully treated conservatively but one ultimately required elective colectomy because of recurrent disease. Literature is lacking about the need for interval diverticulectomy. We believe that elective colectomy or diverticulectomy after initial successful conservative management should be reserved for recurrent disease.

The three patients with ascending colon diverticulitis were successfully treated conservatively without the need for right hemicolectomy. Tan et Al.[8] recently studied a series of 126 young Asian patients with right sided diverticulitis. Less than 5% of the patients treated conservatively ultimately required colectomy.

Our study found that 26 of 37 patients (70%) with left-colon diverticulitis remain completely asymptomatic after their first hospitalization. Pisanu[9] had similar results with a 26.6% rate of recurrent disease. The meta-analysis performed by Katz[10] showed a 31.6% recurrence rate and a recent systematic review[11] found a 10-35% rate of recurrence in patients initially treated without surgery. Although the risk of recurrence approximates thirty percent, we believe there is no indication for colectomy in an asymptomatic patient following a single episode of diverticulitis. The question of colonoscopy for young patients with diverticulitis remains controversial. None of the patient in our study or in Pisanu's study was found to have a malignancy after colonoscopy.

Our study show that the need for elective surgery for colonic diverticulitis increases with the number of recurrent attacks. In addition, the patients who subsequently developed recurrences had a more severe first attack as judged by their core temperature, leukocyte count and length of hospital stay.

We therefore recommend elective colectomy to our patients after a second attack. Two recent meta-analyses reached the same conclusion.[10,11]

In our study 87% of patients were males. It is interesting that younger patients with diverticulitis are predominantly male compared with older ones that have an equal distribution between sexes.[8,9,10] The reason for this disparity is unknown.

We studied the natural history of diverticulitis in patients

younger than 40 years and not than 50 years like other studies. For this reason we had a relatively small number of patients with descending or sigmoid colon diverticulitis. Nevertheless, since most recurrences (90%) occur in the first five years[12], we believe our mean follow-up period of 6.9 years was long enough to identify almost all patients who will develop recurrent disease.

None of the patient in our study suffered from complicated diverticulitis. In the Pisanu's study[9] of 23 patients younger that 50 with acute diverticulitis there was a significant percentage of patients (26%) presenting with Hinchey grade 3-4 diverticulitis and 8 patients (34.8%) required emergent surgical treatment during their first attack. Our results can't allow us to make recommendations for severely diseased patients but a systematic review of 63 articles published by Regenbogen[11] encourages elective resection after the first episode of complicated diverticulitis with perforation because of the higher incidence of late complications.

Conclusions:

Our study suggests that colonic diverticulitis under the age of 40 years is usually a mild disease and that most patients will not experience recurrent attacks. Right-sided diverticulitis is usually discovered at operation for suspected appendicitis when an inflamed solitary diverticulum of the cecum is discovered and resected. In young patients with uncomplicated left colon or sigmoid diverticulitis, aggressive surgical treatment is not justified. An elective segmental colectomy should be considered if symptoms persist or diverticulitis recurs.

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References:

1. Murphy T, Hunt RH, Fried M et al. Diverticular Disease. World Gastroenterology Organisation Practice Guidelines. 2007:1-16.
2. Ritz JP, Lehmann KS, Stroux A, et al. Sigmoid diverticulitis in young patients - a more aggressive disease than in older patients? Gastrointest Surg. 2011 Apr;15(4):667-74.
3. Roberts P, Abel M, Rosen L, et al. Practice parameters for sigmoid diverticulitis. The Standards Task Force American Society of Colon and Rectal Surgeons. Dis Colon Rectum. 1995 Feb;38(2):125-32.
4. Ouriel K, Schwartz SI. Diverticular disease in the young patient. Surg Gynecol Obstet. 1983 Jan;156(1):1-5.
5. Fozard JB, Armitage NC, Schofield JB, et al. ACPGBI position statement on elective resection for diverticulitis. Association of Coloproctology of Great Britain and Ireland. Colorectal Dis. 2011 Apr;13 Suppl 3:1-11.
6. Feingold D, Steele SR, Lee S, et al. Practice parameters for the treatment of sigmoid diverticulitis. Dis Colon Rectum. 2014 Mar;57(3):284-94.
7. Hinchey EJ, Schaal PG, Richards GK. Treatment of perforated diverticular disease of the colon. Adv Surg. 1978;12:85-109.
8. Tan KK, Wong J, Yan Z, et al. Colonic diverticulitis in young Asians: a predominantly mild and right-sided disease. ANZ J Surg. 2014 Mar;84(3):181-4.
9. Pisanu A, Vacca V, Reccia I, et al. Acute diverticulitis in the young: the same disease in a different patient. Gastroenterol Res Pract. 2013:867961. doi: 10.1155/2013/867961. Epub 2013 Mar 10.
10. Katz LH, Guy DD, Lahat A, et al. Diverticulitis in the young is not more aggressive than in the elderly, but it tends to recur more often: systematic review and meta-analysis. J Gastroenterol Hepatol. 2013 Aug;28(8):1274-81.
11. Regenbogen SE, Hardiman KM, Hendren S, et al. Surgery for diverticulitis in the 21st century: a systematic review. JAMA Surg. 2014 Mar;149(3):292-303.
12. Faria GR, Almeida AB, Moreira H, et al. Acute diverticulitis in younger patients: any rationale for a different approach? World J Gastroenterol. 2011 Jan 14;17(2):207-12.