

Research Article

Diverticulitis Acute Complicated: Prevalence for 5 Years (2011-2016) in a New Second-Level General Hospital

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Submitted: 22 July 2016

Accepted: 07 August 2016

Published: 08 September 2016

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Keywords

- Acute diverticulitis
- Emergency
- Prevalence
- Surgery

Abstract

Background: In the West the incidence of diverticular disease has increased from 2 to 10% since the beginning of last century until today to 50% in individual older than 60 years who have colon diverticula, of these, 10 to 25% develop acute diverticulitis.

Objective: Recognize the prevalence of diverticulitis in our new public hospital Playa del Carmen, Q. Roo, México and surgical management; for a period of five years (July 2011-July 2016) of the patients operated on urgently manner.

Material and methods: An observational, retrospective cross-sectional study of patients with complete file count was performed. The variables of age, sex, duration, laboratory, stage (Hinchey classification), surgery performed, postoperative complications, morbidity and mortality were considered.

Results: Thirteen cases of diverticulitis: eight cases were males and five females cases were collected; oldest patient 77 years old, the youngest 22 years-old. Leukocytosis with a minimum value of 6,900/mm³, up to 19,300/mm³. Time evolution: minimum 6 hours, 72 hours maximum. One case Hinchey I with conservative management rated seven intra operative findings Hinchey II cases, four classifications III and one case with IV Hinchey classification. Ten patients were operated by sigmoid resection, Hartman, and colostomy procedure, one case with primary closure and transversostomy and one with primary closure and ileostomy. There was morbidity in one case and mortality in other case.

Discussion: In our population the prevalence of diverticular disease is unknown and we face it when it comes in the form of acute diverticulitis and operated for acute abdomen with peritonitis, the prevalence found in our population was 1.2 cases per 100,000 inhabitants/year. In this study seven cases of Hinchey grade II that should not be operated on a stage with all current technological resources were found and all them underwent surgery without morbidity and mortality (only one case of stenosis resolved anastomosis) and those patients this category evolved satisfactorily.

INTRODUCTION

In 1878 Chiari examined 800 cases postmortem finding a great variability in the depth of the crypts of Morgagni progressing diverticula and in five of those cases found a fistula which communicated. He considered that such diverticula were due to the pressure within the intestine, similar to the pressure of the pharyngeal diverticula. This report is the first to describe the colon diverticular disease [1].

The incidence of diverticular disease has increased from 2 to 10% early last century to currently 50% in individuals over 60 years of age who have diverticula in the colon and of these, 10 to

25% will develop complicated diverticulitis.

Moreover, diverticular disease has traditionally been thought that only affects older people with such a high prevalence as 65% in individuals 85 years up to 5% in people aged 40 years or less, however, literature it has recently reported an increase in the incidence of diverticular disease in young people under 40 years [2].

Risk factors for diverticular disease include advanced age, genetic predisposition, connective tissue diseases, low-fiber diet, consumption of large quantities of meat, pronounced overweight and abnormal colonic microenvironment [3,4].

Hospitalizations for acute colonic diverticulitis are increasingly frequent in the number of hospital admissions [5]. The natural history of uncomplicated diverticulitis is often benign with low rates of recurrence [6], and surgery must be indicated in selected subjects previously diagnosed cases. An accurate diagnosis is essential to decide the management of this disease, whether conservative, interventional, or surgical treatment at different stages of diverticular disease [7,8].

OBJECTIVE

Recognize the prevalence of acute abdomen for complicated acute diverticulitis in our new public hospital and surgical management for a period of five years (July 2011-July 2016.)

MATERIAL AND METHOD

An observational and retrospective cross-sectional study was conducted over a period of 5 years (July 2011- July 2016) to all patients operated on urgently in our public hospital of Playa del Carmen, Q. RooMéxico which will have complete dossier. The variables of age, sex, duration of clinical, laboratory studies, stadium was considered according to the original classification Hinchey, surgery performed, postoperative complications, and mortality. Descriptive statistics were used for measures of central tendency and dispersion.

RESULTS

During the study period, 13 cases of acute diverticulitis (2.4 cases per year) were collected; eight cases were male (61.5%) and five cases were female (38.5%); our oldest patient was 77, the youngest 22 years and a range of 55 years with a mean of 46, median 44, mode 34, DE \pm 16.6. Leukocytosis was found with a minimum value of 6,900 / mm³, more than 19,300 / mm³ with a range of 12,400 / mm³, average 16, median 16.6, DE \pm 3.7. The time from the onset of symptoms to admission to the emergency department was: at least 6 h, maximum 72 h, 66 h range, average 27 h, 24 h medium, mode 24 h, and DE \pm 16.8. As for the surgical findings rating Hinchey type II seven cases (53.8%) [intra-abdominal abscess, pelvic or retroperitoneal] and four cases with classification III (30.7%) were found [Generalized peritonitis] and

one stage I (7.6%) [abscess or phlegmonpericolc], and one case of stage IV (7.6%) [generalized fecal peritonitis] of the original Hinchey classification. The site was sigmoid diverticulitis in 12 cases (92.4%) and cecal in one case (7.6%). One case of mortality was recorded. Surgical findings, surgeries and complications in 11 cases emergency surgery for acute diverticulitis in a new second level public hospital see (Table 1).

DISCUSSION

Factors predisposing to the development of acute diverticulitis include obesity, smoking, diet, lack of physical activity and medications such as aspirin and NSAIDs, so that the disease can be treated with medical management with a low around 1% mortality, rising to 4% in cases requiring hospitalization and surgical management also up to 85% of patients with colonic diverticulitis recover only with medical management, as recurrence rates in patients with diverticulitis after medical management varies from 13 to 36% [9,10].

In our population the incidence of diverticular disease is unknown and apparently rare and only we face it when it comes on suddenly as acute diverticulitis in the emergency department and are surgically to present acute abdomen with data from peritonitis. For the diagnosis of this entity and other abdominal events are in addition to the clinical data of acute abdomen, supported by laboratory studies in almost all cases present with leukocytosis (except for one case in our series with only 6900 leukocytes and only 6 hours of evolution but with Hinchey II stadium).

With respect to imaging for diagnostic support, ultrasound is only recommended as a diagnostic tool in cases of women of child bearing age and children because it avoids exposure to X-rays hence CT is the study of choice in acute diverticulitis as it allows US an accurate diagnosis and facilitates classification and appropriate medical and / or surgical treatment when the study is available permanently. A colonoscopy is a test that detects diverticular disease in patients undergoing this study for other reasons, however, it is also useful in cases of diverticulitis detected by CT in patients over 50 years

Table 1: Surgical findings, surgeries and complications in 11 cases emergency surgery for acute diverticulitis in a new second level public hospital.

| Case | Hincheyclassification | Findings | Surgeryperformedortreatment | Complications |
|------|-----------------------|-------------------------|---|---------------|
| 1 | II | Diverticulum sealed | Sigmoidectomy / primary closure / transversostomy | None |
| 2 | II | Diverticulum sealed | Sigmoidectomy / primary / ileostomy and handclosure | Stenosis |
| 3 | II | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 4 | III | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 5 | III | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 6 | II | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 7 | II | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 8 | II | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 9 | II | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 10 | III | Perforated diverticulum | Sigmoidectomy / Hartmann procedure / colostomy | None |
| 11 | I | Abscesspericolc | Conservativetreatment | None |
| 12 | III | Perforateddiverticulum | Sigmoidectomy / Hartmann procedure / colostomy | Death |
| 13 | IV | Fecal peritonitis | Sigmoidectomy / Hartmann procedure / colostomy | Fistulae |

to rule out colorectal cancer due to the high incidence of same in this age group, as well as in cases of diverticulitis complicated [11,12] therefore, it would be useful in cases of known patients as carriers of diverticular disease and hemodynamically stable non-emergency situations.

In our series we found only one case of perforated in the right colon (cecum) diverticulitis, however, it has also been reported cases of diverticulitis appendicular where appendectomy is the treatment of choice and also in these cases also CT is of great value to the accuracy diagnosis [13] also a case of cecal mass was found with healthy appendix where the nondiverticular process was confirmed and was not part of casuistry, however, studies like Guven H et al., [14] who report the same situation.

From the original classification of Hinchey and other classification [15-18] the management of diverticulitis underwent a radical change and since this classification has been modified and others have supplemented, such as Ambrosetti [19] which is very useful when it has CT and interventional radiology. In our patients use the original Hinchey classification with good results for the acute presentation of cases, so that we evolve to the Hinchey modified and / or Ambrosetti with the support of the TAC routinely. In our public hospital we do not have computerized axial tomography or ultrasound permanently.

An interesting development in the diagnosis and treatment of perforated diverticulitis occurred following the study Ambrosetti where it was found that in cases of peridiverticular abscesses of at least 3 cm in diameter, percutaneous drainage is useful to avoid resective surgery in selected cases getting good results [20]. In our public hospital radiologists we do not have permanently and none interventionist radiologist. And the decision to operate was merely clinical and abdominal radiographs base. All our cases were operated urgently due to acute presentation, however, in cases where patients with diverticular disease are known, they can be programmed by a good rating and under the actual guidelines [21]. Furthermore, prophylactic surgery it is not recommended for the average risk of patients with diverticulitis, regardless of the number of acute nor in cases of uncomplicated disease episodes.

The decision to colon resection should not be based on the frequency of episodes reported by the patient, but the severity of symptoms [22,23]. In this analysis, nine of our cases were operated by traditional laparotomy with resection of sigmoid colostomy and Hartman procedure, one case with primary closure and transversostomy both cases with primary closure and protective ileostomy. Only one patient was treated conservatively with remission of their symptoms but later required surgical management in Europe. The cases were operated on different shifts and different surgeons and all operated in the same way: resection sigmoid bag Hartmann and protective colostomy, although the Classification II of Hinchey indicated conservative management in most cases or primary closure with protective ileostomy. Holmer et al. [24], recommended in cases of urgency, resection with primary anastomosis and ileostomy for disfunctionalization as Hartman procedure is complicated and should only be done in cases of perforated diverticulitis with severe septic complications. Currently the laparoscopic peritoneal perforated sigmoid diverticulitis washing is an

alternative to resective surgery only in Hinchey III type [25,26] but in our hospital we do not have laparoscopic surgery 24 hours a day.

The best surgery in the best scenario of acute diverticulitis complicated has been debated for decades and a study of Jafferji et al., [27] found that primary anastomosis is performing well and who perform most often this technique are surgeons colon and rectum, but who perform more procedures Hartman are general surgeons (40.9% vs. 68.3% respectively) which is confirmed in our study. However, general surgeons operate more patients than colon and rectal surgeons (65.1% vs. 34.9%), respectively [28,29]. Therefore, a more aggressive approach to primary anastomosis could decrease the rate of complications after surgical treatment of severe acute diverticulitis.

The low prevalence in our study is that our population is rural type and diet is still rich in vegetable fiber.

CONCLUSIONS

The number of cases of complicated acute diverticulitis is scarce perforated and had only one case of classified Hinchey grade IV which favored the results and surgical management in our hospital was traditional; however, the management of this disease has evolved from the early historical cases reported where no resection was recommended, moving to a second period where resection was indicated as the treatment of choice, until now where laparoscopic surgery again not respective is presented as a promising alternative in the treatment of complicated perforated diverticulitis.

In this study seven cases of Hinchey grade II that should not be operated on a stage with all current technological resources were found and all underwent surgery without morbidity and mortality (only one case of stenosis resolved) and all patients in this category evolved satisfactorily.

It is advisable to revalue these patients to offer the best choice treatment and avoid unnecessary resections and postoperative periods prolonged as well as increased cost-benefit to the hospital.

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Cite this article

Arredondo GP (2016) *Diverticulitis Acute Complicated: Prevalence for 5 Years (2011-2016) in a New Second-Level General Hospital*. *JSM Gastroenterol Hepatol* 4(4): 1070.