Editorial

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What is the Difference Between Right- and Left-Sided Colonic Diverticulitis?

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A colonic diverticulum represents a sac-like protrusion of the colonic wall while diverticulosis is defined as the presence of diverticula. When an inflammation occurs in a diverticulum, it is called diverticulitis [1]. Nowadays, Westernized and developed nations have a high incidence of left-sided diverticulosis. For example, in the United States, the diverticulosis rate among the population above the age of 80 is as high as 70%. Fortunately, most colonic diverticula are asymptomatic; only 20% of patients with diverticulosis exhibit associated symptoms [2]. In Asian countries such as Korea, colonic diverticular disease is relatively rare, with a prevalence of 25%, and it is predominantly right-sided. However, due to the adoption of Westernized diets, the aging society, and advances in diagnostic tools, the frequency of diverticular disease, especially left-sided diverticular disease, is on the rise [3]. Two types of diverticula are recognized: true and false. A true diverticulum is defined as a saclike herniation of the entire bowel wall while a false diverticulum involves only a protrusion of the mucosa and submucosa through the muscularis propria of the colon. Left-colonic diverticula, which increase with age, are primarily false diverticula. On the other hand, right-colonic diverticula, which are more common in Asians, have been reported to be true and to have no association with aging [2, 4]

The pathogenesis of a diverticulum is still poorly understood. However, recent studies now suggest that it is more complex and multifactorial, including factors such as structural abnormalities, low-fiber diets, disorders in intestinal motility, and chronic low-grade inflammation [1, 2]. Diverticula occur at points where vasa recti penetrate through the muscularis propria, resulting in a weakness of the colonic wall. Low-fiber diets lead to high-fat-content stools and alter colonic motility, increasing intraluminal pressure. The combination of high-pressure contractions and constipating, high-fat-containing stools within the narrow lumen in an area of weakness, especially in the sigmoid lumen, results in the formation of these diverticula. Consequently, this leads to the compression of vasa recti and eventually to perforation or bleeding [1, 2].

Even though most colonic diverticulosis is asymptomatic, it is clinically significant due to its serious complications, such as abscess, perforation and bleeding. However, the management of patients with colonic diverticulitis is still controversial. Until today, very little has been studied about the differences between left-sided and right-sided colonic diverticulitis. In that respect, identifying the dependences of various factors related to complications on the location of the disease and thus evaluating the optimal management for patients with diverticulitis based on the location and the severity of the disease would allow a deeper understanding of the diverticular disease [5].

Previous studies [4, 6] have shown that the percentage of complications requiring surgery was higher in patients with left-sided colonic diverticulitis than it was in patients with right-sided diverticulitis, and another study [5] presented similar results. According to a study reported by Kim et al. [4], this is due to the fact that the right diverticulum, frequently being true, allows a protrusion of a layer of the colon. Conversely, in left-sided colonic diverticula, because the lumen of the left colon is relatively narrow and degenerative change weakens muscle layers, false diverticula protrusions are abundant. Therefore, left diverticula are related with comparatively more perforations [6].

According to a research by Jeong et al. [7], the diverticulitis group with complications showed a higher ratio of visceral fat area to subcutaneous fat area (0.997 vs. 0.799, P = 0.014) and significantly higher visceral fat area (128.57 cm^2 vs. 102.80 cm^2, P = 0.032). From previous studies, visceral obesity is significantly associated with complications of diverticulitis, which is quite opposite what was shown in the present study [5]. Similarly, in another study by Strate et al. [8], obesity increased the incidence of diver-

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ticulitis and diverticular bleeding. Based on the article, male patients with a body mass index (BMI) ≥ 30 kg/m^2 had a relative risk of 3.19 (95% confidence interval [CI], 1.45–7.00) for diverticular bleeding and 1.78 (95% CI, 1.08–2.94) for diverticulitis, compared to male patients with a BMI of <21 kg/m^2. Unlike previous studies, Chung et al. [5] showed that patients with complicated left-sided diverticulitis had significantly lower BMI (21.9 kg/m^2 vs. 25.8 kg/m^2, P = 0.021) than those with uncomplicated diverticulitis. Because a low-fiber diet is a known risk factor for diverticulosis, many would assume that higher BMI would be a complicating factor for diverticulitis.

Besides the result mentioned above, Chung et al. [5] demonstrated another interesting result. Many researchers would generally assume that smoking would equally affect the complication rate of both sides of colonic diverticulitis. In addition, according to previous research by Turunen et al. [9], smoking increases the risk of complications in diverticulosis and allows more rapid development of complicated disease. Therefore, that the finding in the present study that smoking is a complicating factor only in patients with right-sided diverticulitis (P = 0.027), but not in patients with left-sided diverticulitis (P = 0.999), is surprising.

Although this study [5] makes a number of contributions to the extant literature, it has some limitations that must be acknowledged to properly interpret its results. The primary limitation of the present study is a relatively small sample size of patients with left-sided colonic diverticulitis. Of 202 patients included in the study, 167 patients (82.7%) were diagnosed with right-sided colonic diverticulitis while only 35 patients (17.3%) were diagnosed with left-sided colonic diverticulitis. This limitation might have been predictable from the beginning because the study was done in Korea where almost all patients are Asian. The small sample size of left-colonic diverticulitis led to limited assessment in choosing an effective treatment modality. Evaluating the optimal management for patients with left-sided colonic diverticulitis would be difficult unless the study included patients from different countries. Overall, the result demonstrated that conservative management may be effective in treating both patients with uncomplicated left-sided diverticulitis and patients with right-sided colonic diverticulitis, either complicated or uncomplicated.

The overriding goals of this study [5] were to examine both (1) the difference between right- and left-sided colonic diverticulitis and (2) the factors associated with complications and (3) to suggest an appropriate management scheme for patients with both right- and left-sided colonic diverticulitis. With the objectives accomplished, this research not only contributes to an understanding of the differences in the management between patients with left- and patients with right-sided colonic diverticulitis, but also suggests a general concept of the need for different diverticulitis management depending on location, which would allow clinicians to differentiate more easily between patients who can be managed conservatively and those who require surgical care.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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