



## Right colonic diverticulitis: CT predictors of poor outcomes



According to researchers in South Korea, some specific CT findings can be useful predictors of unfavourable clinical outcomes of right colonic diverticulitis (RCD). Their study shows that the spilled faeces sign on CT images was a significant predictor of the need for surgery after failed medical treatment. In addition, the CT finding of more than five diverticula per 10 cm of colon was a significant predictor of recurrence.

The study, published in the *American Journal of Roentgenology*, also indicates that the CT findings of an abscess larger than 4 cm and inflamed diverticulum larger than 2 cm were significant predictors of prolonged hospital stay.

Asian populations have a higher incidence of RCD and a greater likelihood of diverticulosis affecting the right colon than do Western populations, in which diverticulitis occurs much more commonly in the left colon. CT is recommended as the primary imaging modality in the diagnosis of acute colonic diverticulitis and classification of disease severity. In left colonic diverticulitis (LCD), CT is helpful for determining the need for surgery and predicting recurrent disease or failure of medical treatment. Specifically, CT findings of abscess and extraluminal gas are associated with failure of medical treatment and recurrence of LCD. In RCD, however, such predictors of failure of medical treatment have not been widely studied, particularly from a radiologic perspective.

The Korean study was designed to assess CT, demographic, and laboratory predictors of unfavourable outcomes of medical treatment in patients with RCD. Of 394 patients with RCD diagnosed on the basis of CT findings from January 2010 through August 2013, the study included 328 (190 men, 138 women; mean age,  $41.3 \pm 12.6$  years) who had undergone medical treatment as inpatients. Two radiologists retrospectively reviewed the following CT findings associated with diverticulitis: number of diverticula per 10 cm of colon; length and thickness of affected colonic wall; diameter of inflamed diverticulum and abscess; presence of pericolic fluid collection, spilled faeces, and contained air; and extent of fatty infiltration. Logistic regression analysis and the Cox proportional hazards regression model were used to determine significant variables predictive of unfavourable outcomes, including surgery after failed medical treatment, recurrence, and prolonged hospital stay.

Of the 328 patients, nine underwent surgery after failed medical treatment. Of the other 319 patients, 35 had recurrence and 49 had a prolonged hospital stay. The spilled faeces sign (adjusted odds ratio [OR], 111;  $p < 0.001$ ) and serum WBC count (adjusted OR, 1.3;  $p = 0.047$ ) were independent predictors of the need for surgery. More than five multiple diverticula per 10 cm of colon was significantly associated with recurrence (adjusted hazard ratio, 4.1;  $p < 0.001$ ). Abscess larger than 4 cm (adjusted OR, 18.2;  $p = 0.01$ ) and inflamed

diverticulum larger than 2 cm (adjusted OR, 3.7;  $p = 0.001$ ) were independent predictors of prolonged hospital stay.

"Although the pretest probability of not undergoing surgery was extremely high (97% [319/328]), the surgery rate among patients with the spilled faeces sign was clinically meaningful (71% [5/7]). However, because of the small number of cases, our data have limited precision for patients undergoing surgery. Large-scale studies are required," according to the researchers.

They also note that the distinction between spilled faeces and contained air is crucial in therapeutic decision-making when the benefits of surgery are being weighed against medical treatment of a patient with extraluminal gas bubbles visible on CT images.

Source: [American Journal of Roentgenology](#)

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