Is the Intestinal Gas Associated With the Development of Right Colonic Diverticula?

TO THE EDITOR: I read with great interest the paper entitled “Relationship between intestinal gas and the development of right colonic diverticula” by Jang et al,¹ which was published in the October 2010 issue of *Journal of Neurogastroenterology and Motility*. Hydrogen (H₂) and methane (CH₄) are gases produced in the colon by the breakdown of carbohydrates, due to the action of anaerobic methanogenic bacteria.²⁻⁴ The authors hypothesized that intestinal gases including H₂ and CH₄ may contribute in the development of right colonic diverticula. To investigate the relationship between intestinal gas and right colonic diverticula, intestinal gas productions including H₂ and CH₄ were measured by lactulose breath test (LBT). However, the result of LBT and concentrations of intestinal gas were not significantly different between the control and diverticular group.¹ Although the result showed negative data, this study is a meaningful attempt to focus on the association of intestinal gas with right colonic diverticula as the authors have described.

However, there are some limitations regarding this study. First, the validity of LBT for estimating the difference between the control and diverticular group has never been thoroughly elucidated. Previously, Ventrucchi et al⁵ showed that pulmonary H₂ excretion after lactulose ingestion was significantly higher in patients with diverticular disease than in controls. On the contrary, all breath H₂ and CH₄ test could not discriminate patients with right colonic diverticula from healthy subjects in this study.¹ As the criteria used to define the abnormality with LBT have been variously drawn from studies using the measure to assess orocecal transit time as well as small intestinal bacterial overgrowth, patients with right colonic diverticula and controls do not seem to appear differently when applying the proposed criteria for an abnormality of LBT. Also, as the authors described in discussion section, only one time LBT, performed at the study time does not seem to properly show the association between intestinal gas with right colonic diverticula because the diverticular formation is a time-dependent process.

Second, the authors assessed the following symptoms in enrolled patients: abdominal pain, bloating, constipation, diarrhea, flatulence, tenesmus and early satiety. And in this study, there was no difference in severity of these symptoms between the patients with positive LBT and those with negative LBT within the diverticular group.¹ Irritable bowel syndrome or lactose malabsorption may also contributed to the appearance of these clinical symptoms and shows a high prevalence in clinical practice.^{2,6,7} These symptoms are indistinguishable from those of colonic diverticular diseases, and patients affected by colonic diverticular diseases may thus experience symptoms related to both pathological conditions.^{2,6,7} And previous studies showed that both irritable bowel syndrome and lactose malabsorption may provoke bacterial fermentation with production of great amounts of H₂ and CH₄, resulting in abnormal LBT.^{2,6,7} But the authors did not discuss these points in this paper. I think that discussion of these points would make this study more informative to the readers.

Further studies with a larger number of cases are needed to solve the limitations of the present study and to clarify the role of intestinal gas in the formation of right colonic diverticula.

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Conflicts of interest: None.