



Is There a Way to Differentiate Esophageal Motility Disorders in Patients With Heartburn?

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Article: Clinical characteristics of esophageal motility disorders in patients with heartburn

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Gastroesophageal reflux disease (GERD) is one of the most common gastrointestinal disorders. The global pooled prevalence of GERD, determined by at least weekly GERD symptoms, such as heartburn and/or regurgitation, is almost 15.0% in adults from population-based studies.¹ Additionally, the global burden of GERD has increased due to aging and population growth.² According to the Global Burden of Diseases, Injuries, and Risk Factors Study of 2017 GERD collaborators, the global age-standardized prevalence of GERD was reportedly stable from 1990 to 2017 (percentage change 0.3% [−0.3 to 0.9]).² However, the all-age prevalence increased by 18.1% from 1990 to 2017, while years lived with disability increased by 67.1% from 1990 to 2017.² Thus, GERD has always been a focus of attention both for physicians and for public health.

The pathogenesis of GERD is affected by multiple factors, including alterations in reflux exposure, epithelial resistance, and visceral sensitivity.³ Additionally, impaired lower esophageal sphincter, ineffective esophageal motility (IEM), and impaired gastric motility reportedly caused GERD.⁴ As with the complicated pathogenesis of GERD, patients with GERD exhibit various clinical presentations, including heartburn, regurgitation, dysphagia, odynophagia, belching, chest pain, and coughing.⁴ These symptoms resembled

those of esophageal motility disorders. Some patients, who visited the hospital for gastroesophageal reflux symptoms, were diagnosed with esophageal motility disorders, rather than GERD. The treatment for esophageal motility disorders differs from that for GERD. Thus, physicians should differentiate the 2 diseases.

In this issue of the *Journal of Neurogastroenterology and Motility*, Takahashi et al⁵ identified patients with esophageal motility disorders among patients, who underwent high-resolution manometry (HRM) for heartburn symptoms, and investigated the clinical characteristics related to various types of esophageal motility disorders. Further, they used 3 questionnaires, such as the Frequency Scale for Symptoms of GERD, the Gastrointestinal Symptom Rating Scale (GSRS), and the Short Form-8. The symptoms, that predicted esophageal motility disorders, were evaluated among the questionnaire variables. A total of 394 patients were analyzed. Among them, 201 (51.0%) had normal esophageal motility, while 193 (48.9%) were diagnosed with esophageal motility disorders. Among the patients with esophageal motility disorders, there were 71 (36.7%) with esophagogastric junction outflow obstruction, 107 (55.4%) with esophageal hypomotility, and 15 (7.7%) with esophageal hypermotility. Each group was compared to a group with normal esophageal motility. The mean dysphagia symptom score

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was higher ($P = 0.047$), but the scores of the mean acid reflux symptom ($P = 0.001$) and mean dyspepsia symptom ($P = 0.030$) were lower in the esophagogastric junction outflow obstruction disorders group. The esophageal hypomotility group had a higher score for the mean dysphagia symptom than the normal motility group ($P = 0.022$). However, the mean diarrhea and constipation symptoms scores were lower ($P = 0.030$). Additionally, the mean dysphagia symptom score ($P = 0.030$), mean body mass index ($P = 0.001$), and median Brinkman index ($P = 0.018$) of the esophageal hypermotility group were higher than those of the control group. Therefore, the esophageal motility disorder groups had a higher mean dysphagia symptom score than the normal esophageal motility group. The sensitivity, specificity, positive predictive value, and negative predictive value of dysphagia score ≥ 3 were 63.5%, 57.7%, 34.8%, and 82.6%, respectively.

Several studies have investigated the relationship between certain esophageal motility disorders and GERD. However, there are few studies that have classified esophageal motility disorders into 4 groups as in the current study. Kasamatsu et al,⁶ one of the large-scale retrospective studies, reported that 49 patients (40.5%) were esophageal motility disorders and 72 patients (59.5%) were normal esophageal motility in 121 patients with GERD. When comparing IEM and normal esophageal motility groups, most of the GSRS scores were higher in the normal motility group ($P < 0.05$). However, there were no significant differences in patient characteristics or test results between the 2 groups. In another large-scale Dutch study of 104 patients with refractory GERD, 24 patients (22.6%) were minor esophageal motility disorders, the most common being IEM.⁷ In addition, 7 patients (6.6%) had critical esophageal motility disorders, such as 2 with achalasia, 2 with absent contractility, 2 with distal esophageal spasm, and 1 with a jackhammer esophagus.⁷ However, they did not evaluate the clinical characteristics associated with esophageal motility disorders. That means it is difficult to perform these studies in the clinical field. In the same vein, the strength of this study is that it confirmed the association between various types of esophageal motility disorders and clinical characteristics for almost 400 patients.

This study had several limitations. First, the patients' supplemental manometric measures, such as multiple rapid swallows (MRS) and rapid drink challenge (RDC), were not performed. MRS and RDC are provocative tests for the evaluation of esophageal contraction reserve. The Chicago classification version 3.0 identified MRS as a supportive test for the diagnosis of IEM.⁸ The Chicago classification version 4.0 included MRS and/or RDC as diagnosing modalities for esophageal peristaltic disorders.⁹ Fornari

et al¹⁰ reported that approximately 70.0% of esophageal symptomatic patients with normal esophageal manometry had an abnormal MRS. Second, the ambulatory pH monitoring was not conducted in all patients. Therefore, patients with pathologic GERD, functional heartburn, or reflux hypersensitivity may have been included in the normal esophageal motility group. The differences between pathologic GERD and non-pathologic GERD in each esophageal motility disorders group remain unclear.

Nonetheless, in a large-scale retrospective study by Takahashi et al,⁵ the demographic factors and esophageal symptoms were comprehensively examined using 3 questionnaires, HRM variables, and endoscopic findings between 2013 and 2019. In addition, the authors demonstrated the clinical utility of the dysphagia symptom score for excluding esophageal motility disorders. This study serves as an academic foundation for future studies on esophageal motility disorders or GERD. Further basic studies are required to understand the association between esophageal motility disorders and GERD.

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