

Gastroesophageal Reflux Events Occurring During a Meal Can Still Be Temporally Associated With a Symptom Even When Analysis Settings Are Set to Exclude Meals

TO THE EDITOR: Combined multichannel intraluminal impedance and pH monitoring (MII-pH) is becoming the gold standard for assessing gastroesophageal reflux (GER) and for assessing the temporal relationship between GER and symptoms.¹⁻³ Using MII-pH reflux measuring systems (like Medical Measurements Systems [MMS]; Amsterdam, The Netherlands), 24-hour MII-pH studies are manually scanned for the presence of GER episodes and for various symptoms that have been recorded over the course of the study. Traditionally, “mealtimes” are excluded from the analysis⁴

so that esophageal acidification that may occur during feeding will not be considered when calculating total esophageal acidification (ie, reflux index) and because rapid swallows can occasionally be misinterpreted as reflux events.

During a recent MII-pH study, we discovered that an impedance-detected non-acid GER episode (occurring at the very end of a feeding period), while not counted among the total MII events, was recognized by the software as having been initiated during the 120-second pre-symptom window of a cough event that

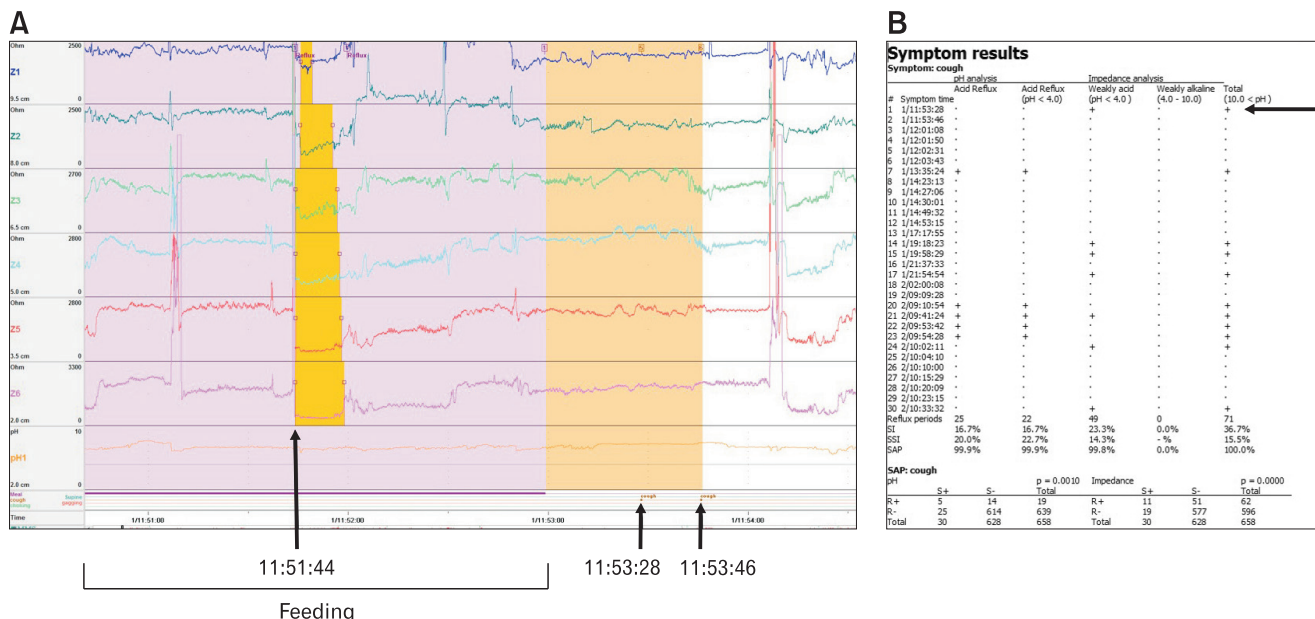


Figure. A symptom–gastroesophageal reflux (GER) association was established involving a GER episode that occurred during a mealtime. The figure above depicts a GER episode (start time 11:51:44) occurring during a feed (Panel A), being tagged and temporally associated with a downstream cough event (11:53:28) (Panel B). The GER (a non-acid event) episode occurred within 2 minutes (96 seconds) just prior to 11:53:28 cough event and 122 seconds (> 2 minutes) prior to a second cough event (11:53:46). Note the black arrow in Panel B, indicating the GER-associated 11:53:28 cough event.

occurred immediately following the meal (Figure). It is important that software users be aware that despite checking the “exclude meal periods” box in the system analysis settings, GER episodes commencing at the end of the feeding period (and within the 120 second pre-symptom window of a symptom⁵) will be tagged and used to calculate a symptom association probability value.⁶ The clinical implication of our observation is likely situation-specific but could hold significance in patients for whom a positive symptom association probability value ($\geq 95\%$)⁶ depends on the additional symptom-GER association.

Frederick W Woodley^{1,2,3}

¹*Motility Center, Nationwide Children's Hospital, Columbus, Ohio, USA;* ²*Department of Gastroenterology, Hepatology and Nutrition, Nationwide Children's Hospital, Columbus, Ohio, USA; and* ³*Department of Pediatrics, The Ohio State University College of Medicine, Columbus, Ohio, USA*

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