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Editorial

Which Provocation Test Will Be Added to Routine High-resolution Manometry Protocol in Unexplained Dysphagia?

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Article: 200 mL rapid drink challenge during high-resolution manometry best predicts objective esophagogastric junction obstruction and correlates with symptom severity
Woodland P, Gabieta-Sonmez S, Arguero J, et al
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High-resolution manometry (HRM) is the gold standard to diagnose esophageal motility disorders. The Chicago classification of HRM findings is not complete. It sometimes does not cover all esophageal abnormalities, or explain dysphagia symptoms.[1] Esophageal peristaltic defect, esophagogastric junction (EGJ) obstruction, or esophageal bolus transit abnormalities which cause dysphagia may not be detected in routine HRM protocols.[2] In such cases, combining with other tests, such as timed barium esophagogram, esophageal impedance testing, or functional luminal imaging probe with HRM can be helpful to detect anatomical and functional abnormalities.

To improve the diagnostic yield of HRM without adding other esophageal motility tests, HRM provocation tests have been suggested. Provocative maneuvers are usually added on the routine HRM protocol, easy to perform in clinical practice and do not require advanced technology. Those maneuvers allows stress or load to augment abnormal esophageal response during esophageal peristalsis or transit through EGJ.[3] Multiple rapid swallows (MRS), rapid drink challenge test (RDC), viscous or solid swallows, different test meals, or abdominal compression are used to provoke esophageal responses.[3-6] Some tests are usually intended to measure contractile reserve, other tests are specially used to detect EGJ obstruction. Solid swallows using bread, viscous swallows, and test meals can be used to detect peristaltic disorders or EGJ obstruction. MRS is useful to evaluate contractile reserve in patients with gastroesophageal reflux disease before antireflux surgery.[6,7] Abdominal compression which uses a flexible belt around the upper abdomen is useful to detect peristaltic abnormalities, especially in patients with gastroesophageal reflux disease.[8]

RDC test and MRS are similar provocation tests. The RDC test involves rapid drinking of 200 mL of liquid after the standard HRM protocol. MRS administers 5 swallows of 2-5 mL liquid at 2-3 second intervals. A similar physiologic responses are expected after RDC or MRS; profound deglutitive inhibition of the lower esophageal sphincter, deglutitive inhibition of esophageal body contractions, and then after rapid swallows or multiple swallows,

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the augmented contractile response follows.[9,10] The theory of these responses requires intact neural mechanisms to regulate motility and muscular integrity to respond to the MRS or RDS stimulation.[3] The absence of contractility and profound inhibition of the lower esophageal sphincter during the MRS or RDS reflects intact deglutitive inhibition. Contractile augmentation, or contractile reserve, is observed by the relative increase in distal contractile integral following MRS and defined by a ratio of post MRS contractile distal contractile integral on HRM. MRS is specially useful to assess the contractile reserve and deglutitive inhibition.[6-8] As opposed to measuring contractile reserve like MRS, the best utility of RDC appears related to assessment of EGJ function.[3,9-11]

Woodland et al[12] evaluated the clinical role of 200 mL RDC in patients with dysphagia and achalasia. RDC parameters of esophagogastric pressure gradient, integrated relaxation pressure (IRP), and RDC duration were evaluated and compared with single swallow HRM parameters or timed barium esophagogram. Mean IRP during RDC was predictable marker of EGJ outflow obstruction on time barium esophagogram, especially in untreated dysphagia patients. In patients with achalasia, mean IRP during RDC correlated with symptom scores. They concluded the parameters of RDC test predict objective EGJ obstruction and correlate with symptom severity.[12]

The RDC test will provide a complementary role in the evaluation of esophageal motility in dysphagia patients. However, to use it in clinical practice, it is required to define normal value and validate RDC parameters. The clinical significance of abnormal findings observed in RDC should be interpreted considering patients' symptoms in clinical practice.

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