Introduction

Achalasia should be suspected in patients with dysphagia to solids and liquids. Esophageal manometry is required to establish the diagnosis of achalasia. If the results of manometry is equivocal, barium esophagogram should be performed to assess esophageal emptying and esophagogastric junction morphology. Endoscopic evaluation should be performed to exclude secondary causes of achalasia. Additional evaluation with endoscopic ultrasound and fine-needle aspiration should be performed when pseudoachalasia due to a malignancy is suspected.

Conventional esophageal manometry has been used as a diagnostic tool of achalasia. Recently, high resolution manometry was introduced to get more comprehensive information of esophageal motility compared with conventional esophageal manometry. HRM may have increased sensitivity in diagnosing achalasia as compared with conventional manometry.\(^1,2\) Although esophageal manometry is the gold standard for the diagnosis of primary achalasia, its lack of catheter-contact pressure may limit detection of esophageal contractility. The functional lumen imaging probe (FLIP) topography can detect esophageal contractility not observed with manometry.\(^3\) Esophageal longitudinal muscle contraction was examined by using a combined high-resolution impedance manometry and high-frequency intraluminal ultrasound in achalasia patients.\(^4\) While HRM has been used widely in evaluating patients with suspected achalasia, FLIP topography is an emerging technique to evaluate esophageal contractility in achalasia. Advanced techniques including HRM, FLIP in evaluating achalasia will be discussed.

High resolution esophageal manometry

1. Usefulness of HRM for evaluating achalasia

Evaluation with HRM have allowed further subclassification of achalasia based on the pressurization pattern observed in the esophageal body.\(^5\) Type I achalasia is characterized by absent contractility, type II achalasia is characterized by panesophageal pressurization, and type III achalasia is characterized by spastic contractions. Subclassification of achalasia by HRM has enabled us to predict symptomatic response to treatment.
2. Limitations of HRM for evaluating achalasia

Esophageal dilatation in achalasia may not make manometry catheter detect esophageal contractions and peristalsis. Panesophageal pressurization may obscure manometric detection of esophageal contractions.

The functional lumen imaging probe

1. Usefulness of FLIP for evaluating achalasia

The FLIP may offer a unique method to evaluate esophageal contractility in achalasia, and it utilizes impedance planimetry channels in a distensible bag to measure lumenial cross-sectional areas and distensibility during controlled volumetric distension. The FILP has been used to evaluate esophagogastric junction distensibility to guide treatment of achalasia.\(^6,7\) Recently, a novel methodology, FILP topography, to assess contractility in the esophageal body has been introduced.\(^8\) The generation of color-coded FLIP topography plots with corresponding plots of volume distension and intrabag pressure over time has additionally enabled visualization of esophageal body contractility.\(^8\) A recent study reports that FLIP topography can provide novel information about esophageal contractility in achalasia, which may be a prognostic marker of post treatment peristaltic recovery.\(^3\)

2. Limitations of FLIP for evaluating achalasia

Further controlled studies are needed to show the clinical significance of FLIP topography in the assessment of esophageal contractility.

Conclusions

New emerging techniques have been used in evaluating achalasia. Although HRM may increase sensitivity in diagnosing achalasia compared with conventional manometry, it cannot detect esophageal contractions and peristalsis in dilated esophagus. The FLIP can detect esophageal contractions which is not detected with HRM. In achalasia, FLIP topography may be an additional useful tool in evaluating esophageal body contractility.

References

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