Gastroesophageal Reflux and Atypical Symptoms: The Role of Impedance-pH Monitoring

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Gastroesophageal reflux disease (GERD) is a condition which develops when reflux of stomach contents causes troublesome symptoms and/or complications [1]. GERD manifestations include esophageal and extra-esophageal syndromes, with the latter also known as GERD with atypical symptoms. Associations between this category of symptoms and GERD have been established for chronic cough, asthma, chronic laryngitis and dental erosions. The diagnostic approach often used to identify these associations include ambulatory esophageal pH monitoring, laryngoscopy, and empiric therapy with proton pump inhibitors (PPIs) [2–5]. However, the yield of these techniques to identify GERD as a potential cause of atypical symptoms remains controversial [6–8]. For example, a recent meta-analysis concluded that proximal pH monitoring gives accurate and consistent information about GERD in patients with laryngopharyngeal reflux [9]. In contrast, a well-designed study with combined dual esophageal pH and distal Bilitec monitoring failed to support the routine application of proximal pH monitoring in patients with atypical GERD symptoms [10].

Esophageal impedance-pH monitoring is now considered the most sensitive tool for characterization of GERD. This technique is able to detect not only acid reflux but also weakly acidic episodes either in the esophagus or pharynx [11, 12]. Several studies have assessed the diagnostic yield of impedance-pH monitoring in the evalua-

tion of patients with GERD symptoms, including typical symptoms in patients off PPIs, chronic cough and symptoms refractory to PPIs [13–15]. However, few studies have formerly assessed the benefit of impedance-pH monitoring in patients with laryngeal symptoms.

Chronic cough related to GERD has been generally attributed to acid reflux. However, acid suppression therapy is not as good as for heartburn. Interestingly, cough improvement with antireflux surgery has been repeatedly reported, suggesting a possible involvement of other gastric contents in the triggering of cough. Recent studies investigated the association between weakly acidic reflux and cough using 24 h ambulatory pressure-impedance-pH monitoring. Manometry and symptom association probability analysis were used for precise recognition of reflux-related cough. These studies allowed the identification of a subgroup of patients in which chronic cough was clearly associated with weakly acidic reflux [14, 16]. Furthermore, impedance-pH manometry identified patients with reflux-related cough that would have been disregarded using the standard diagnostic criteria for acid reflux.

Laryngeal symptoms possibly related with GERD have been assessed with impedance-pH monitoring [17, 18]. These studies have shown that weakly acidic gaseous reflux might be more frequent among patients with reflux-attributed laryngitis than in controls. In addition, patients with globus sensation refractory to PPIs seem to

have higher frequency of proximal reflux, with weakly acidic reflux approaching significance in predicting globus. Nevertheless, a clear association between laryngopharyngeal reflux and laryngeal symptoms, seen at impedance-pH monitoring, has not yet been established.

In this issue, Bajbouj et al. describe the diagnostic yield of impedance-pH monitoring in patients with atypical symptoms potentially related with GERD [19]. The authors compared the yield of impedance-pH monitoring with impedance only, distal or proximal pH only and endoscopy in patients with atypical GERD symptoms, including chronic cough, hoarseness or globus sensation. Impedance-pH monitoring showed the highest diagnostic yield in the detection of GERD compared to other techniques. The authors claim that impedance-pH monitoring increases the diagnostic yield for objective detection of atypical manifestations of GERD. Patients were selected based on report of atypical symptoms, but un-

fortunately few of them registered symptoms during impedance-pH monitoring. Additionally, proximal impedance and pH sensors were kept in a permanent position, irrespective of the location of the upper esophageal sphincter and hypopharynx. Such approach limits the assessment of atypical symptoms possibly associated with GERD reaching the proximal esophagus or the pharynx.

In conclusion, based on the study of Bajbouj et al., it seems correct to claim that impedance-pH monitoring is superior to other techniques in the detection of gastroesophageal reflux. It is also accepted in other studies that impedance-pH monitoring combined with objective methods for detection of atypical symptoms improves the capability of patients' selection. However, the affirmation that impedance-pH monitoring per se increases the diagnostic yield for objective detection of atypical GERD symptoms still deserves further investigation.

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