LifeVac: A Novel Apparatus to Resuscitate a Choking Victim


Introduction: Patients with oropharyngeal dysphagia are at increased risk for choking which can be a leading cause of death in this population. Currently there are no measures to rescue an intubated object if the traditional Heimlich maneuver fails. We have developed an apparatus which is simple to use in order to remove an object lodged in the upper esophagus of the Heimlich maneuver fails.

Methods: The Lumbarflex Chest Stretch device designed specifically for the Lumbarflex abdominal thrust maneuver was used in order to simulate a choking victim. A Lumbarflex ball had been placed into the thoracic cavity in order to cause obstructive airway. The Lumbarflex ball was then utilized for the patient instruction manual’s setting to dislodge the object and the frequency of dislodging the object was recorded.

Results: Using Lumbarflex Chest Stretch a hot dog piece inserted into the airway the esophageal successfully removed the object 72% out of 100 attempts in one sausage, 69 out of 100 attempts with two sausages, and was accomplished 100% out of 100 attempts in three sausages. The 95% confidence intervals for the probability of success (95% confidence intervals are reported in parentheses) were 79.8% (69.7 - 93.1) in the method of inserting the sausage as normal in two or three sausages (95%).

Conclusion: Lumbarflex is a promising apparatus that is simple to use and appear to be an extremely effective method in dislodging an object lodged in the esophagus of a choking victim. Further studies with cadavers and subsequent pilot studies in humans are warranted in the hopes of saving lives when the Heimlich maneuver fails.

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Lower Oropharyngeal Acid Exposure and Higher Psychological Distress Edema Amongst Subjects WITH Laryngeal Symptoms and Response to PPI Therapy


Introduction: Predicting therapeutic response in patients with laryngopharyngeal reflux (LPR) symptoms is challenging. Conversely, patients with suspected LPR often require expensive proton pump inhibitor (PPI) therapy and up to 50% may not respond. The Rome III PPI probe is a minimally invasive that allows assessment of esophageal pH. We hypothesized that higher oropharyngeal acid loaders are associated with a greater PPI response. The aim of this study was to (1) evaluate oropharyngeal pH probe parameters with PPI response and (2) evaluate if alternative clinical correlates predict PPI response.

Methods: This was a physician blinded prospective cohort study conducted at a tertiary care teaching institution between 1/2015 and 6/2015. Adult subjects with laryngeal symptoms and a reflux symptom index (RSI) ≥ 13 at PPI therapy 2-weeks prior to study were recruited from an endoscopy clinic. Laryngoscopy and esophageal pH assessment with the Rome III pH system were first performed, followed by acid to 12-week trials of proton pump inhibitor (Rome III PPI therapy). Patients completed various symptom questionnaires (Table 1). PPI response was defined as a more than 50% difference between pre- and post-PPI therapy RSI.

Results: Of 24 subjects, 15 (62.5%) had a PPI response. Percent time of oropharyngeal pH below 3.0 did not correlate with change in RSI (Spearman’s rho 0.01; p = 0.72), similar trends were seen for pH < 4.0, 5.3, and 6.0. Acid exposure ≤ 1% was significantly associated with PPI response when compared to high acid exposure (11.1% (p = 0.01)). PPI responders had higher psychological distress scores prior to treatment and a significantly greater reduction in post-treatment Brief Symptom Inventory (BSI) subscale scores, which were significantly greater than the BSI subscale scores. Baseline BGI2 scores were significantly higher in the PPI responder group.

Conclusion: Contrary to our hypothesis, low oropharyngeal acid loaders were associated with PPI response, suggesting a non-acid mechanism of laryngeal symptoms in this group. PPI responders had higher psychological distress, indicating a potential association between cognitive affective symptoms and laryngeal complaints and supporting the placebo effect of PPI therapy. The etiology of laryngeal symptoms is multifactorial and the role of oropharyngeal pH testing in predicting PPI response remains unclear.

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Interference With Daily Activities and Major Adverse Events During Esophageal pH Monitoring With Bravo® Wireless Capsule Versus Conventional Intraluminal Catheter: A Systematic Review of Randomized Controlled Trials


Introduction: Three decades, ambulatory 24-hour intraluminal pH monitoring has been the established gold standard for detecting acid reflux in patients with reflux-related gastroesophageal reflux disease. However, device-associated adverse events and unpleasant experiences reported by patients...