Introduction

Cricopharyngeal achalasia and Zenker’s diverticulum are conditions that are commonly related in etiology as both are due to a dysfunction of the cricopharyngeus muscle. In Zenker’s diverticulum, cricopharyngeal dysphagia leads to the formation of a cricopharyngeal pouch from denuded cricopharyngeal slings. In both cases, treatment involves cricopharyngeal myotomy. Myotomy can be performed either via an open transcervical or an endoscopic approach. With the endoscopic stapler approach, myotomy has been shown to be incomplete on postoperative barium studies, whereas with an open approach, a complete myotomy is obtained. 1 This has been cited as the main reason for the high rate of cricopharyngeal pouch disease with the endoscopic approach compared to the open approach.4

Gastroesophageal reflux disease is hypothesized to contribute to the etiology of cricopharyngeal dysfunction. 5 Cricopharyngeal myotomy can cause increased gastroesophageal sphincter tone and could potentially allow for regurgitation of refluxate into the hypopharynx and larynx and the passage of cricopharyngeal reflux (LPR). Similarly, patients who undergo a partial myotomy may have hypopharyngeal reflux symptoms that are not present in patients who undergo a complete myotomy.

In this paradigm, we hypothesize that following cricopharyngeal myotomy, symptoms of LPR are worse than the pre-operative symptoms and that these symptoms are less severe in the endoscopic partial myotomy approach than in the open complete myotomy approach.

Methods

A retrospective chart review was performed. Inclusion criteria included all patients who underwent endoscopic or open cricopharyngeal myotomy, with or without Zenker’s diverticulectomy. Patients were excluded if they underwent revision surgery. The preoperative and postoperative reflux symptom index (RSI), voice handicap index (VHI-10), and eating assessment tool scores (EAT-10) were compared.

Results

A total of 30 patients were included in the study. Seventeen (57%) were male patients and 13 (43%) were female patients. The average age was 75 years old (range 49-93 years). Fourteen patients underwent an endoscopic procedure and 16 patients underwent an open procedure. The average follow up time was 212 days. The overall average pre- and postoperative RSI were 22.1 and 9.0, respectively (p < 0.001). The average pre- and postoperative RSI for the endoscopic group were 21.3 and 8.3, respectively (p < 0.001). The average pre- and postoperative RSI for the open group were 22.8 and 9.6 (p = 0.001). There was no significant difference in VHI-10 scores pre- and postoperatively. The average RSI score was 13.2 (range 8.3 to 22.8). The average pre- and postoperative RSI were then compared for the open group and the endoscopic group. In the open group, the average pre- and postoperative RSI were 22.8 and 4.5 (p = 0.001), which was significantly different. The average pre- and postoperative RSI for the endoscopic group were 21.3 and 8.3, respectively (p < 0.001), which were also significantly different.

Discussion (con’t)

It is speculated that cricopharyngeal myotomy can worsen symptoms of gastroesophageal reflux disease. It has been hypothesized that cricopharyngeal myotomy can lead to a decrease in esophageal sphincter tone, which may facilitate refluxate into the hypopharynx. It is speculated that the decrease in sphincter tone may exacerbate symptoms of reflux disease.

Conclusions

There is a significant improvement in RSI scores after cricopharyngeal myotomy, with or without Zenker’s diverticulectomy. This is seen in cases of both partial myotomy (endoscopic approach) and complete myotomy (open approach). Therefore, incontinence of the upper esophageal sphincter after myotomy does not worsen symptoms of LPR and does not warrant post-operative counselling.

References