Introduction

The cricopharyngeus (CP) muscle is comprised of the transverse fibers at the caudal portion of the inferior pharyngeal constrictor. At rest the CP is tonically contracted and relaxes during swallowing to increase the esophageal opening. Dysfunction in the muscle does not necessarily correlate to neurogenic dysfunction or fibrosis. Symptoms of CP dysfunction include dysphagia, odynophagia, choking sensation, cough, and nasal regurgitation. Diagnosis of CP dysfunction can be made with radiographic swallow study (Figure 3) and esophageal manometry. CP dysfunction causes failure of pharyngeal dilatation associated with development of Zenker’s Diverticulum (2D), and can prevent optimal esophageal dilatation after total laryngectomy (TL).

Methods

87 patients were identified who underwent endoscopic CO2 laser CPM during the study period (Table 1). 22 of these patients had been identified with CP dysfunction improved from an average of 2.8 to 1.6 (Table 1). For all patients, FOSS scores improved from an average of 2.6 to 1.0 (p<0.001). Pre- and post-operative FOSS scores were compared using the ANOVA revealed statistically significant differences in preoperative FOSS scores (p<0.001) vs. postoperative FOSS scores (p<0.001), and change in FOSS is significant (p<0.001). Table 1 shows the CP dysfunction, radiation for head and neck cancer, and dysphagia from cricopharyngeal stricture after laryngectomy. Mean, median, and mode time to feeding postoperatively were 1.4, 1.4, and 1.0 days respectively. Mean, median, and mode hospital stay were 1.8, 1.0, and 1.0 day respectively. Overall, FOSS scores improved from 2.6 to 1.6 (p<0.001). Improvement was noted for patients with Zenker’s Diverticulum (2.4 to 1.0) and cricopharyngeal dysfunction from stroke or nerve injury (3.0 to 1.6) and last for those with prior head and neck radiation (3.9 to 3.2). All patients undergoing CPM for poor tracheoesophageal speech regained speech through transpharyngeal puncture (TEP) postoperatively. No patients developed mediastinitis, abscess or fistula.

Conclusion

Endoscopic CO2 laser CPM is a safe treatment approach for cricopharyngeal dysfunction of various causes, although swallowing outcomes may vary depending on the surgical indication. Early feeding postoperatively after CPM is safe and facilitates early discharge from the hospital.

CONTACT

Jennifer L. Bergeron
David Geffen School of Medicine at UCLA
Email: jbergeron@mednet.ucla.edu

REFERENCES

7. Large variation in postoperative management of patients with CP dysfunction is associated with development of Zenker’s diverticulum. 2D. Indications included Zenker’s Diverticulum (39), DiGeorge syndrome (2), stroke (5), nerve injury (2), and neck cancer (15), idiopathic (16), hyperfunctional tracheoesophageal speech (5) and dysphagia from cricopharyngeal stricture after laryngectomy (3). Mean, median, and mode time to feeding postoperatively were 1.4, 1.4, and 1.0 days respectively. Mean, median, and mode hospital stay were 1.8, 1.0, and 1.0 day respectively. Overall, FOSS scores improved from 2.6 to 1.6 (p<0.001). Improvement was noted for patients with Zenker’s Diverticulum (2.4 to 1.0) and cricopharyngeal dysfunction from stroke or nerve injury (3.0 to 1.6) and last for those with prior head and neck radiation (3.9 to 3.2). All patients undergoing CPM for poor tracheoesophageal speech regained speech through transpharyngeal puncture (TEP) postoperatively. No patients developed mediastinitis, abscess or fistula.

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