Pharyngeal Horizontal Closure in Total Laryngectomies

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ABSTRACT

Objective. To determine the viability of horizontal pharyngeal closure during total laryngectomies, as an alternative to vertical and T-closure methods, by evaluating the rates of pharyngocutaneous fistulas (PCFs) and dysphagia post-operatively.

Methods. Retrospective analysis of the post-operative complications associated with horizontal pharyngeal closure during total laryngectomies at a tertiary institution from 2007 to 2011. Chart reviews were performed on 15 total laryngectomy patients with horizontal pharyngeal closure, evaluating for PCF formation and dysphagia compared to reported rates cited in literature.

Results. Twenty percent (3/15) of patients developed post-operative PCFs, and 25% percent (3/12) with dysphagia. Patients that had not been tried on oral feeds due to wound complications, persistent disease, or those with ambiguous documentation were excluded. Literature reported ranges of PCFs are 13 to 25 percent, with dysphagia 17 to 70 percent.

Discussion. This is the first study to show horizontal pharyngeal closure. Several articles did compare various techniques (running, staples, various muscle layer closure, and non-traditional techniques) to those interrupted direct closure, however, only vertical and T/Y-closures were mentioned. Associated complications with patient characteristics was not evaluated due to small sample size. Of note, neck disease was found in all 3 patients with PCF, (Tables 1 & 2).

INTRODUCTION

After a total laryngectomy a defect in the pharynx is created, requiring surgical closure. If minimal to no pharynx is removed during the operation, the pharynx can be closed in a primary fashion. Otolaryngology text describe typically three primary ways to close the pharynx, creating a "neopharynx": vertical, horizontal, and T-closure (or some derivation). The horizontal method of closure has not been specifically mentioned in the literature.

Pharyngeal horizontal closure, when resulting tissue permits, provides a closure that can result in equal or less tension, preservation of mucosa, and wider swallowing passage way (Figure 1). Thus, it would be expected that horizontal closure should result in complication rates within literature standards. Success of laryngectomy surgery is typically evaluated primarily by wound complications (PCF), swallowing (dysphagia), and speech (tracheosophageal puncture). We specifically focused on PCF and dysphagia rates.

METHODS AND MATERIALS

Design: retrospective analysis of the post-operative horizontal pharyngeal closure for total laryngectomies at a tertiary institution from 2007 to 2011.

Patients: 15 total laryngectomy patients with horizontal pharyngeal closure.

Factors evaluated: PCF formation and dysphagia.

Literature Review: PCF and dysphagia complication rates reported for total laryngectomies closed in a primary fashion.

RESULTS

Twenty percent (3/15) of patients developed post-operative PCFs, and 25 percent (3/12) with dysphagia. Patients that had not been tried on oral feeds due to wound complications, persistent disease, or those with ambiguous documentation were excluded. Literature reported ranges of PCFs are 13 to 25 percent, with dysphagia 17 to 70 percent. Patient characteristics were evaluated, however no analysis was done due to small sample size (Tables 1 & 2).

CONCLUSION

A literature search revealed no studies evaluating horizontal pharyngeal closure. Literature reported ranges for PCFs and dysphagia are 13 to 25 percent and 17 to 70 percent, respectively. This study shows complications of PCFs and dysphagia rates of 20 and 25 percent respectively, within the literature reported ranges. Thus, this is the first study to show horizontal pharyngeal closure appears to be a viable alternative to T- and vertical closures.

REFERENCES