Oncologic outcomes following laryngectomy with staple-line pharyngeal closure

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ABSTRACT

Although the first total laryngectomy was performed in the 1870s, it was not until 1971 that a linear stapling device was used for the procedure. Advantages of the mechanical total laryngectomy (TL) include decreased operative time, technical simplicity, and decreased field contamination. With these advantages comes the caution to restrict staple line closure to elective patients. Previous studies have examined fistula rates in manual and mechanical TL as well as salvage therapy. Detailed studies of oncologic outcomes of patients undergoing a mechanical pharyngeal closure total laryngectomy are lacking in the literature.

A reported limitation of staple line closure is the inability to visualize the tumor, raising the question of this technique's effect on oncologic outcomes if cases are not carefully selected. The purpose of this study was to evaluate the oncologic outcomes of patients following a total laryngectomy with a staple-line pharyngeal closure.

METHODS AND MATERIALS

- Retrospective review between August 2008 and November 2009, single surgeon experience.
- The median follow-up period was 15.2 months (range, 9 to 20 months).
- Staple-line closure total laryngectomy was indicated in patients with endolaryngeal squamous cell carcinoma T3 and T4 tumors without metastatic disease, and posterior extension.
- A TX-805 reinsertible linear stapler was used for all of the surgeries (Teleflex Smith-surgeon inc, Denville, NJ).
- Bilateral neck dissections were completed on all patients.
- One patient underwent total thyroidec tomy and three received a unilateral thyroidec tomy.

RESULTS

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Local-Regional Recurrence Patient 1: 12 months after TL, base of tongue and anterior neopharynx near the superior aspect of the closure line. Salvage Therapy: Neopharyngectomy, radical forearms flap. Status: Alive with no evidence of disease 16 months following TL.

Local-Regional Recurrence Patient 2: 6 months after TL, left neck defect adjacent to the stapled pharyngeal mucosa. Salvage Therapy: Subtotal laryngectomy and bilateral neck dissection. Status: Alive with no evidence of disease 18 months following TL.

Distant Metastasis Patient 1: 13 months following the staple TL. A wedge resection of the lung was performed. Status: Alive with distant metastatic disease 18 months following TL.

Distant Metastasis Patient 2: 13 months following staple TL. Treatment consisted of palliative chemotherapy. Status: Alive with distant metastatic disease 20 months following TL.

CONCLUSIONS

The aim of the staple TL is to achieve the same local control as found in a manual TL while minimizing field contamination. Mechanical TL is a feasible treatment option, especially when choosing mechanical closure in TL, with detailed analysis of tumor extension and pathology. The Staple Laryngectomy is a new technique in the field of laryngectomy which warrants a special challenge, as these patients’ prior irradiation tends to lead to advanced disease.

REFERENCES