Timing of Esophageal Dilation for Dysphagia in Head and Neck Cancer patients receiving Radiation Therapy

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INTRODUCTION

Dysphagia is a common complaint in HNC patients following treatment with XRT. It can greatly impact quality of life, and can lead to cachexia, depression, anxiety, aspiration, and death. The prevalence of dysphagia is approximately 12-49%.1,2

XRT can cause dysphagia secondary to xerostomia, pharyngeal and esophageal stenosis, and fibrosis of the upper aerodigestive tract. Surgical treatment such as total laryngectomy can lead to disruption of normal swallowing mechanism, hypopharyngeal stenosis, cricopharyngeal dysfunction, and pseudoepiglottis formation.

The success rates of esophageal dilations vary (66-84%), with majority of patients requiring multiple dilations.3,4 Duration of relief usually lasts 14-16 weeks.

There has been no studies showing whether timing of esophageal dilations affect outcome. Our hypothesis is early esophageal dilations after radiation treatment lead to improved dysphagia subjective scores.

METHODS AND MATERIALS

This was a retrospective study of head and neck cancer (HNC) patients who received ED after XRT between 2006-2009. These patients were evaluated for subjective improvement scores of dysphagia.

Inclusion criteria: 1) XRT, 2) NED, 3) complete records to obtain subjective scores. Electronic medical records and modified barium swallow studies were reviewed.

Factors that were evaluated included:
- Patient and tumor factors: age (≤ or >50), sex, primary site, T and N-staging, total laryngectomy (TL), and cricopharyngeal myotomy (CPM), ± chemotherapy, bougie size (< or ≥50), ± TEP at time of dilation, and time from radiation to dilation (<6 months, > or ≥1 year).
- Treatment factors: total laryngectomy (TL), ± cricopharyngeal myotomy (CPM), ± chemotherapy, bougie size (< or ≥50), ± TEP at time of dilation, and time from radiation to dilation (<6 months, > or ≥1 year).

Methods:
- Retrospective
- Electronic medical records of head and neck cancer (HNC) patients who received ED after XRT between 2000-2009 were evaluated for subjective improvement scores of dysphagia.
- Factors that were evaluated included age (< or ≥50), sex, primary site, T and N-staging, total laryngectomy (TL) ± cricopharyngeal myotomy (CPM), ± chemotherapy, bougie size (< or ≥50), ± TEP at time of dilation, and time from radiation to dilation (<6 months, > or ≥1 year).

RESULTS

This was a retrospective study of head and neck cancer (HNC) patients who received ED after XRT between 2006-2009. These patients were evaluated for subjective improvement scores of dysphagia.

Mean follow-up time was 19 months. 57% of patients had relief of dysphagia immediately post-op, 35% continued to have relief at 6 months, and 22% at 1 year.

Patients were asked to evaluate for post-operative improvement of their dysphagia. Rating values from 0-10 with 10 being the best were measured at various intervals (1 week and 3, 6, 9, and 12 months or greater).

Rating Significant Factors p-value
Post-op Chemo ED > 1 yr 0.02
3 months ED > 6 mo, > 1 yr 0.04, <0.01
6 months ED > 6 mo, > 1 yr, CPM 0.03, <0.01, 0.02
9 months ED > 1 yr, CPM <0.01, 0.02
12 months ED > 1 yr, CPM <0.01, 0.03
1 year ED > 1 yr, CPM <0.01, 0.046

DISCUSSION

Rates of esophageal stricture after XRT are low (2.6%), however it increases with concurrent chemotherapy (22-37%).1 It is also still controversial whether CPM improves post-operative dysphagia in TL patients. In this study, only 5 patients had multiple dilations that ranged from 2 months to 2 years. Only one of these patients had improvement in their dysphagia score, and this patient was dilated < 6 months after XRT with repeat dilations every 3 months for a total of 3 dilations. It may be that early intervention dilates the esophagus before significant fibrosis and scarring sets in.

CONCLUSION

Patients with early esophageal dilations performed <1 year after XRT have significantly improved subjective scores for dysphagia. Patients who received chemotherapy or did not have CPM at the time of TL may be at risk for poorer outcomes.

REFERENCES