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UPPER ESOPHAGEAL STRICTURE POST CHEMOIRRADIATION IN PATIENTS WITH CARCINOMA HYPHARYNX

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ABSTRACT: BACKGROUND: Concurrent chemo irradiation is the standard treatment for patients with head & neck cancer (HNC). Dysphagia is a common late toxicity of treatment. 7-21% of these patients have treatment induced stricture of the upper esophagus causing dysphagia, with a high incidence of the same in cases of carcinoma hypopharynx. The objective of the present study was to identify the incidence of treatment related stricture of the upper esophagus in patients with hypopharyngeal cancer in our institution. **METHODS:** A retrospective analysis on patients treated for carcinoma hypopharynx, in the department of Radiotherapy at our Institute, between 2008-12 was conducted. All patients who had received chemo irradiation were included Patients who had developed upper esophageal stricture post treatment diagnosed by upper GI endoscopy and required periodic dilatation were analyzed using Fisher's exact test. **RESULTS:** 377 patients of H&N cancers were evaluated, out of which 15.38 % (58/377) had a hypopharyngeal primary. 51 patients were evaluable for the current analysis (15 females, 36 males; mean age 57yrs); out of which 10 patients developed treatment related stricture in the proximal esophagus (20%) (4 females, 6 males). Post cricoid primary had a higher incidence of stricture (7/10) (p=0.0012** two-tailed), followed by primary of the pyriform sinus (3/10). Posterior pharyngeal wall malignancies did not have treatment induced strictures. The mean interval between completion of treatment and endoscopic diagnosis of stricture was 4 months. 5 out of 10 patients underwent periodic dilatations up to an average of 13mm. **CONCLUSIONS:** Upper esophageal stricture is an important late effect of chemo irradiation in patients with carcinoma hypopharynx. Post cricoid cancers have a higher incidence of treatment induced strictures.

KEYWORDS: incidence, stricture, chemo irradiation, hypopharyngeal cancer.

INTRODUCTION: Head and neck cancer (HNC) account for 600,000 patients worldwide, with 60% presenting with Locally advanced HNC (LAHNC).⁽¹⁾ Concurrent chemo irradiation (CRT) is the current standard of management for patients with locally advanced head and neck cancers.⁽²⁾ Dysphagia is an important debilitating long term adverse effect experienced by 40-64% of patients post CRT.⁽³⁾⁽⁴⁾

Pharyngo esophageal stricture accounts for 7-21% of the etiology for treatment related dysphagia, with the hypopharyngeal primary being an important risk factor for stricture formation.⁽³⁾⁽⁵⁾ Here we present the incidence of CRT induced upper esophageal stricture in patients treated for hypopharyngeal malignancy at our institute.

MATERIALS AND METHODS: 377 patients of head and neck cancers presented in the department of Radiotherapy, Victoria Hospital Bangalore between 2008-2012 (Table1). 58 patients had hypopharyngeal primary (15.38 %).

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All patients were biopsy proven squamous cell carcinoma involving hypopharyngeal sub-sites i.e. pyriform sinus (PFS), posterior pharyngeal wall (PPW) and post cricoids area. 51 patient's records were reviewed 3 – no treatment, 3- Died during treatment with toxicities & 1 post treatment due to lower respiratory tract infection

TREATMENT DETAILS: Informed consent & counseling regarding diet was done, Nasogastric tube was inserted wherever indicated. All patients were treated on Telecobalt to a total dose of 66-70Gy over 6-7 weeks by shrinking field technique 5 days a week with conventional fraction and weekly cisplatin chemotherapy (40mg/m²)

FOLLOW UP: Patients were advised regular monthly follow up post treatment. At 6 weeks, an endoscopic evaluation was performed to assess response. On endoscopy, any suspicious looking lesion was subjected to biopsy. The need for dilatation was also noted. Patients' history was correlated with onset of dysphagia.

STATISTICAL ANALYSIS: Statistical analysis was performed using the Fischer exact test (two tailed)

RESULTS: 51 patients were evaluable for the current analysis (15 females, 36 males; mean age 57yrs); out of which 10 patients developed treatment related stricture in the proximal esophagus (20%) (4 females, 6 males), Figure1). Post cricoid primary had a higher incidence of stricture (7/10) (p=0.0012** two-tailed), followed by primary of the pyriform sinus (3/10). Posterior pharyngeal wall malignancies did not have treatment induced strictures. The mean interval between completion of treatment and endoscopic diagnosis of stricture was 4 months. 5 out of 10 patients underwent periodic dilatations up to an average of 13mm.

DISCUSSION: Dysphagia is an important late toxicity post chemo irradiation which results in poor quality of life for the patient. The stricture of the proximal esophagus has been recorded as a cause of dysphagia in as high as 21% of patients post CCRT,⁽²⁾⁽³⁾ which occurs after 6-7 months post treatment. In our institute we observed 20% incidence of strictures at a mean time of 4 months post CCRT.

Mucosal injury (mucositis) initiates the stricture formation, which may progress into sustained submucosal injury followed by complete stricture.⁽⁶⁾ It has been hypothesized that the closely apposed mucosal surfaces of the hypopharynx, especially in the post cricoid area, is responsible for the increased rate of strictures in this area,⁽⁷⁾ which probably further extends into the proximal segment of the esophagus. Prolonged apposition of ulcerated mucosa favours circumferential scarring.⁽⁸⁾ Long duration of non-intake of oral feeds during the course of treatment along with ryle's tube dependence has been implicated in inducing disuse atrophy of the pharyngeal muscles.

Post cricoid primaries have recorded a higher incidence of post CRT pharyngoesophageal stricture, in comparison with primaries of pyriform sinus & posterior pharyngeal wall. Inclusion of the proximal esophagus in the extended T shaped field for irradiation of post cricoid primaries could be the contributory cause for a higher incidence of strictures among post cricoids cases. The area of esophagus receiving 60Gy or higher has also been considered an important risk factor for development of stricture.⁽⁹⁾

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Five out of ten patients with treatment related strictures underwent periodic dilatation, while the others were unable to get dilatation owing to financial constrains. Dilatation was done to a maximum of 15 mm. Periodic dilatations offer symptomatic relief to improve the oral intake and thus, quality of life of the patients.

CONCLUSION: Upper esophageal stricture is a significant late toxicity, observed in 20% of patients with hypopharyngeal malignancy treated with concurrent chemo irradiation. In hypopharyngeal cancers the post cricoid subsite is associated with a higher incidence of treatment induced stricture

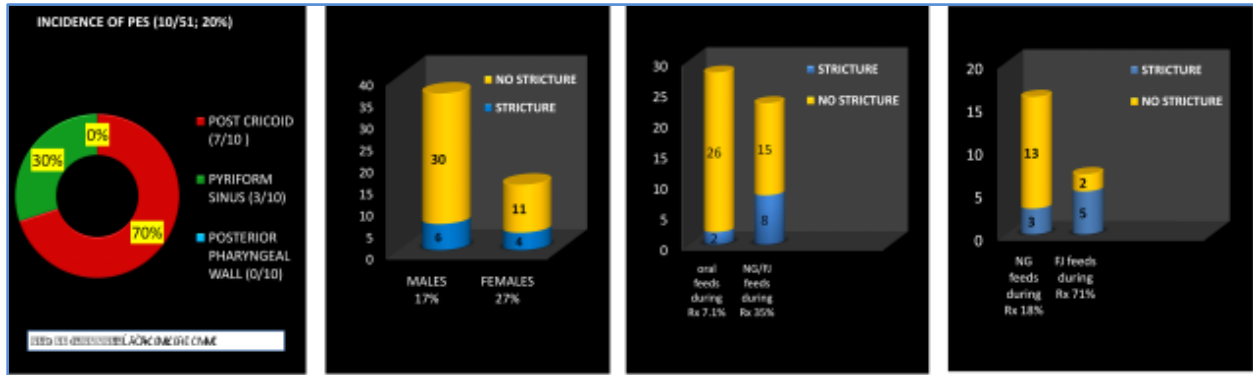


Figure 1

YEAR	No. of Head & Neck cases	No. of Hypopharyngeal primary
2012	69	14
2011	82	8
2010	75	9
2009	72	13
2008	79	14
Total	377	58

Table 1: Year -wise account of number of cases of Ca. Hypopharynx evaluated between 2008-2012

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