Oropharynx Cancer compliance with NCCN guidelines

October 2010

By Shelly Smits, RHIT, CCS, CTR
Conclusions by William Hall, MD
Placed on website for medical staff: December 2010

Data Source: Cancer registry information on head and neck cancers diagnosed in 2004 through 2009.

Reason for Report: To determine how well providers at St. Joseph Hospital comply with National Comprehensive Cancer Network (NCCN) guidelines in treating mucosal head and neck cancers.

Findings: There were 153 cases of mucosal head and neck cancer diagnosed between 2004 and 2009. The 2009 cases have only been fully abstracted through October when this report was run. Of the 153 cases coded to head and neck, there were 3 cases of lymphoma and one Kaposis’s sarcoma which were excluded from this analysis leaving 149 head and neck cancers of mucosal origin for this study. The study was further defined by anatomical site groups. The following is a distribution of these groups.

For our initial study, we chose to concentrate on the 50 oropharynx cases. The histology for all but one of these cases was a variant of squamous cell carcinoma. The stage distribution for these patients is shown below. It should be noted that the 11 patients with unknown stages had no mention of size of tumor which is needed for collaborative staging. However, 9 of 11 (81.8%) of these patients did have clinical stages reported by physicians as if the tumor size and nodal status
was known. We believe the physician reported staging to be correct, however, the exact AJCC staging could not be abstracted using our current techniques.

**Location of Treatment:**
Most oropharynx cancers diagnosed in Bellingham (n=43) during this period were treated locally. Six (12%) patients were diagnosed in Bellingham but had their entire first course of treatment in the Seattle area. Of these 6 patients the following information was noted:

- One patient was Stage I treated with surgery alone. (UWMC)
- Two patients were Stage III treated with chemotherapy and radiation. (UWMC & VMMC)
- One patient was Stage IVa treated with chemotherapy and radiation. (VA)
- One patient was stage IVc, treated with surgery to primary alone. (UWMC)
- One patient was an unknown stage (size of tumor not mentioned) but treated with chemotherapy and radiation as if Stage III. (Swedish)
- One additional patient received surgery at the University of Washington Medical Center, returned to Bellingham for radiation therapy and is included in the study results.

**NCCN Guidelines:** Per NCCN guidelines, the workup of oropharynx cancer should include chest imaging, CT with contrast, MRI or PET-CT, exam under anesthesia with endoscopy, pre-anesthesia studies, as indicated, and dental as well as speech/swallowing evaluations. Excluding the patients that were treated in Seattle, 43/44 (97.7%) of patients had CT, MRI or PET-CT imaging performed. Only 19/44 (43.2%) of patients had exams under anesthesia (EUA) with endoscopy for evaluation as recommended by NCCN. The majority of patients (32/44 – 72.7%) however, did undergo either indirect or fiberoptic examination with complete head and neck examination and biopsy, which is currently outlined as the standard evaluation for oropharynx cancer by the American Head and Neck Society (AHNS) and endorsed as the standard practice by head and neck surgeons in our community. The AHNS guidelines also recommend
diagnostic laryngoscopy (DL) with biopsy as a standard staging modality. The discrepancy between our practice and NCCN and AHNS guidelines was discussed in detail with the local ENT group in Bellingham. We believe the staging guidelines are evolving and currently lag behind the commonly accepted practice of complete head and neck examination combined with fiberoptic laryngoscopy and CT/PET. We do not believe that lack of staging DL or EUA significantly altered the stage or recommended treatment of patients in Bellingham; however additional study is necessary to clarify this issue.

In reviewing patient treatment (including the 6 patients treated in Seattle) in accordance NCCN guidelines we found that 38/50 (76%) were treated per NCCN guidelines, 3/50 refused all or part of treatment (local), 2/50 had chemoradiotherapy recommended but comorbidity precluded the use of chemotherapy, 2/50 received radiation only (one unknown stage, other was being treated for lung cancer when oropharynx cancer found), 2/50 did not receive treatment (unknown why, possibly treated elsewhere not documented), 1/50 had surgery of primary site for stage 4C disease (Seattle), 1/50 had chemoradiotherapy but was an unknown stage, and 1/50 had surgery followed by chemotherapy but no radiation (treated in Seattle). Excluding patients refusing treatment, those too ill to receive recommended treatment, and patients treated in Seattle, NCCN compliance for patients treated in Bellingham increased to 88%.

**Survival:** Overall survival data for oropharynx cancers diagnosed between 2004 and 2008 by best collaborative (CS)/AJCC stage are shown in figure 1. Forty-three of the 50 patients identified had at least 1 year of follow-up and were available for survival analysis. Five-year overall survival for oropharynx cancers compared with the National Cancer Data Base (NCDB) is shown in figure 2 for comparison.
As in the NCDB data, the majority of patients in our series had stage IV disease. 5-year survival for these patients was excellent at 63%. While this number is encouraging, 5 patients in our series were classified as unknown stage, with 3 deaths in that group. We believe most of these patients had stage IV disease, however are unable to further clarify their exact stage. When the unknown stage patients are included in the Stage IV survival analysis, overall survival declines to 55%, which is identical to that reported in the NCDB. The small numbers of patients with Stage I-III (n=12) cancers preclude any meaningful conclusions about this group and are reflected in the random appearance of the survival curves for these patients. Retrospective review of patient records (Stage I-III) reveals the 4 deaths occurring among this group are clearly attributable to oropharyngeal cancer in 2 patients. Four patients initially presented with Stage I disease, with a single death occurring in a patient with a T1N0 uvula primary and documented disease progression. Three patients had stage II disease with 2 deaths. The first death was in a patient diagnosed concurrently with a T2N0 base of tongue cancer and a T2N0 non small cell lung cancer. Both tumors were poorly differentiated squamous cell carcinomas and TTF-1 staining was not performed on the base of tongue biopsy. Given the radiographic characteristics the lung cancer and the lack of nodal involvement with the base of tongue cancer, the presentation was felt to more consistent with synchronous primary head and neck and lung cancer rather than metastatic head and neck cancer or lung cancer. The patient was subsequently diagnosed with metastatic prostate cancer 6 months after completing radiation treatment and died of sepsis one year after diagnosis with no clear evidence of progression at either the base of
The second death occurred in a patient with a T2N0 base of tongue cancer treated with hyperfractionated re-irradiation after initial treatment for a Stage III tonsillar cancer treated with radiation therapy 7 years earlier. The cause of death was metastatic squamous cell carcinoma 4 years after diagnosis of the second primary oropharynx cancer. Stage III disease was diagnosed in 5 patients. A single death occurred in a patient with T3N0 tonsil cancer treated with re-irradiation and erbitux and history of Stage IVb squamous cell carcinoma of the nasal cavity treated with surgery and radiation 10 years prior. Restaging evaluation 6 months after treatment showed a good response to treatment and there was no evidence of cancer progression or recurrence 10 months after treatment. The cause of death was recorded as sepsis 12 months after diagnosis.

Conclusions:
SJH is partially compliant with the staging and work-up of oropharynx cancer. While most patients undergo the recommended radiographic evaluation less than half undergo EUA and DL. We believe the staging guidelines are evolving and currently lag behind the commonly accepted practice of complete head and neck examination combined with fiberoptic laryngoscopy and CT/PET. We do not believe that lack of staging DL or EUA significantly altered the stage or recommended treatment of patients in Bellingham. Between 2004 and 2008, 88% of patients treated in Bellingham received treatment in accordance with NCCN guidelines with most instances of deviation from NCCN guidelines stemming from patient refusal, comorbid illness precluding recommended therapy and treatment outside of Bellingham. Though our numbers of stage I – III patients are small, our 5 year outcomes for oropharynx cancer compare favorably to NCDB reporting.

References:

2. National Oncology Database. Elekta IMPAC Medical systems website. Restricted access to clients only. Requested February 2010.