The Impact of Patient Delay Upon Stage at Presentation in Head and Neck Cancer

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Abstract

Objective: Poor outcomes for head and neck cancer have been associated with presentation at advanced stage of disease. Despite many advances in the treatment of head and neck cancer over the last 30 years, survival rates for head and neck cancer are largely unchanged with the exception of HPV-related oropharyngeal cancers.1 Early detection of disease and timeliness of care are current areas of interest in head and neck cancer.2

Hypothesis: Patient delay is associated with advanced stage at presentation and is pervasive across racial and demographic groups.

Study Design: Retrospective series with chart review

Methods: 100 consecutive patients treated for squamous cell carcinoma of the head and neck between 2011 and 2014 were analyzed by chart review. Patient delay was defined and compared with stage at presentation, age, gender, and race.

Results: Ninety-three patients met inclusion criteria. Seventy-five patients (75%) presented with advanced disease. The mean patient delay was 117 days. Length of patient delay was not significantly associated with advanced disease stage (p = 0.30). Patient delay was comparable for AA and non-AA, 114 days vs. 118 days (p = 0.95), and along age (p = 0.30), insurance status, (p = 0.32) and gender (p = 0.56). Advanced disease stage at presentation was significantly associated with race (p < 0.01). 13 of 13 AA patients presented with advanced disease versus 57 of 75 of their non-AA counterparts (p < 0.01). Advanced stage at presentation was not significantly associated with age, insurance status, or gender (p > 0.05)

Introduction

Head and neck surgeons are often faced with patients who present with advanced stage of disease. Despite many advances in the treatment of head and neck cancer over the last 30 years, survival rates for head and neck cancer are largely unchanged with the exception of HPV-related oropharyngeal cancers.1 Early detection of disease and timeliness of care are current areas of interest in head and neck cancer.2

Patient delay is defined as the time from symptom onset to first contact with the health care system.3 It is influenced by many factors such as access to care, beliefs about personal health, comorbid conditions, and previous experiences within the healthcare system. Current data examining the effect of patient delay upon stage at presentation are conflicting and call for better evidence.3,4,5 We hypothesize that increased patient delay correlates with advanced stage at diagnosis in HNSCC, and that this relationship persists across demographic groups.

Methods and Materials

Institutional review board approval was obtained to conduct a retrospective chart review for the study period from January 2010 through December of 2014. 100 consecutive patients diagnosed with squamous cell carcinoma of the head and neck were identified. Patients were excluded from data analysis if medical records, including date of initial symptoms, and date of first contact with the healthcare system were incomplete, if there was no definitive diagnosis of malignancy, or if non-squamous cell carcinoma was diagnosed. A timeline was constructed for each patient (Fig. 1). Demographic data including age, sex, race, and insurance status were collected along with disease stage. Patients were divided into early-stage (Stage I and Stage II) and advanced-stage (Stage III and Stage IV), and into quartiles of patient delay. t-tests were used to identify the presence or absence of associations between stage at presentation and patient delay, as well as between stage at presentation and race, gender, insurance status, and age. Patient delay was then compared with routine of presentation, race, sex, and age.

Results

Ninety-three patients met inclusion criteria. Seven patients were excluded from the analysis due to incomplete medical records. The average patient age was 63 years, 74 (79.5%) were male, and 13 (14%) of patients were African-American (AA). Seventy patients (75%) presented with advanced disease. The mean patient delay was 117 days. Length of patient delay was not significantly associated with advanced disease stage (p = 0.30) (Chart 1). Patient delay was comparable for AA and non-AA, 114 days vs. 118 days (p = 0.95), and along age (p = 0.30), insurance status, (p = 0.32) and gender (p = 0.56). Advanced disease stage at presentation was significantly associated with race (p < 0.01). 13 of 13 AA patients presented with advanced disease versus 57 of 75 of their non-AA counterparts (p < 0.01). Advanced stage at presentation was not significantly associated with age, insurance status, or gender (p > 0.05)

Abstract

Objective: Poor outcomes for head and neck cancer have been associated with presentation at advanced stage of disease. (Stage III and Stage IV) Patient delay (interval between symptom onset and healthcare system entry) is felt to be contributory; however current data is inconclusive. Understanding the impact of patient delay is necessary to design effective early detection strategies.

Hypothesis: Patient delay is associated with advanced stage at presentation and is pervasive across racial and demographic groups.

Study Design: Retrospective series with chart review

Methods: 100 consecutive patients treated for squamous cell carcinoma of the head and neck between 2011 and 2014 were analyzed by chart review. Patient delay was defined and compared with stage at presentation, age, gender, and race.

Results: Ninety-three patients met inclusion criteria. Seventy-five patients (75%) presented with advanced disease. The mean patient delay was 117 days. Length of patient delay was not significantly associated with advanced disease stage (p = 0.30) (Chart 1). Patient delay was comparable for AA and non-AA, 114 days vs. 118 days (p = 0.95), and along age (p = 0.30), insurance status, (p = 0.32) and gender (p = 0.56). Advanced disease stage at presentation was significantly associated with race (p < 0.01). 13 of 13 AA patients presented with advanced disease versus 57 of 75 of their non-AA counterparts (p < 0.01). Advanced stage at presentation was not significantly associated with age, insurance status, or gender (p > 0.05)

Discussion

In contrast to other types of cancer care, no set standards exist for what constitutes “timely” versus “delayed” treatment in the care of head and neck cancer patients in the United States.5 Meta-analyses examining the prognostic effect of increased interval between symptom onset and treatment initiation are inconclusive.3 Our retrospective data support the theory that factors other than patient delay are responsible for patients presenting with advanced head and neck cancers. Inadequate access to care and low socio-economic status culminating in patient delay has been postulated as a reason underlying increased disease stage at presentation in African-American (AA) patients.6 Our data show no difference in patient delay between AA and non-AA patients, despite significant differences in stage at presentation. Biologic factors, such as tumor growth rate, have also been postulated as etiologic factors;7 further research is needed in this area.

It seems reasonable that increased time between symptom onset and physician consultation would portend worse disease. One explanation for the lack of a consistent association between stage and patient delay is based upon the relatively asymmetric growth of tumors at many subsites in the head and neck.3 Once the tumor causes symptoms (e.g. neck mass, dysphagia), patients may present very quickly for evaluation resulting in a short patient delay, but a high stage at presentation.

This study is limited by its retrospective nature, by the inherent recall bias in patient reporting of date of symptom onset, and by the sample size which was not sufficient for subsite-specific analysis.

Future studies that examine the route of presentation to the head and neck surgeon, group patients by presenting symptom, and include HPV status are needed. More effective “pull systems” should be evaluated for timely delivery of patients with concerning symptoms to the head and neck surgeon for possible earlier detection, diagnosis, and initiation of treatment recommendations.

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References