Routine Surveillance MRI Following Chemoradiation for Advanced-Stage Oropharyngeal Carcinoma: Better than Clinical Exam?  
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Abstract

OBJECTIVE: To determine the predictive value of patient symptomatology and physical exam findings compared to routine disturbance imaging in detecting locoregional treatment failure following definitive chemoradiation in advanced-stage oropharyngeal carcinoma.

METHODS: We identified patients with Stage III-IV oropharyngeal carcinoma who underwent chemoradiation therapy between April 2000 and September 2004, and underwent longitudinal follow-up at an institution review charts retrospectively reviewed for findings on surveillance imaging, patient symptomatology and physical exam findings. Our outcome measurement was recurrent cancer.

RESULTS: Forty patients received a total of 229 advanced radiographic surveillance studies over an average period of 2.1 years (range, 1-4.5 years). Of these, 169 studies per patient. Six patients experienced false-positive surveillance studies that resulted in intervention. Four patients experienced recurrent disease, two of whom had new symptoms or physical exam findings that prompted re-evaluation and intervention. Surveillance studies were compared to clinical follow-up in detecting locoregional recurrence in two asymptomatic patients who were salvaged, one of whom remains free of disease at follow-up. The overall sensitivity and specificity of the imaging surveillance program was 50 and 83 percent, respectively.

CONCLUSION: In asymptomatic oropharyngeal cancer patients who have been treated with chemoradiation, a routine radiographic surveillance program provides limited opportunity for salvage and contributes to unnecessary morbidity and procedure investigations into disease recurrence. Patient symptomatology and routine physical examination may provide sufficient diagnostic information regarding treatment failure.

Methods

A waiver of informed consent was granted by our institution's committee on human research to conduct this retrospective review. We assembled a database of patients who underwent intensity modulated radiation therapy combined with concurrent platinum-based chemotherapy for stage III-IV oropharyngeal carcinoma between April 2000 and September 2004. Patients who received clinical and radiographic follow-up at outside institutions were excluded. Prior to treatment, all patients underwent complete history and physical examination, and diagnostic imaging included CT, magnetic resonance imaging (MRI), diffusion-weighted MRI, positron emission tomography (PET), and PET-CT. Discussion begins with the relative value of each modality.

It has been the policy of our institution to obtain pre- and post-treatment imaging in addition to periodic surveillance imaging for patients with head and neck cancer treated with chemoradiation. At our institution, MRI is the preferred modality for oropharyngeal cancers. The role of this retrospective cohort study is to determine the utility of routine surveillance imaging in detecting locoregional treatment failure in patients treated with chemoradiation. The goals of this study were to determine the sensitivity and specificity of clinical and radiographic examination in detecting locoregional recurrence and disease progression following chemoradiation therapy.

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