ABSTRACT

Squamous cell carcinoma of the head and neck (SCCHN) has traditionally been treated with a combination of surgery, chemotherapy, and external beam radiotherapy. While cure is generally the goal of these therapeutic modalities, recurrence is an unfortunately common outcome. Salvage surgery often results in close or positive surgical margins and the patient is at high risk for recurrence. Cyberknife stereotactic radiosurgery is a novel treatment that may benefit this subset of patients. This targeted treatment has shown promise in improving local control rates of tumors at multiple sites; however, the data for recurrent SCCHN is limited. In this case series, we present our experience with Cyberknife therapy in SCCHN patients who have undergone salvage surgery with close or positive margins.

INTRODUCTION

The traditional foundation for the treatment of squamous cell carcinoma of the head and neck (SCCHN) is a combination of three modalities: surgery, chemotherapy, and external beam radiation. While cure is, generally, the goal of these combined modalities, locally persistent or recurrent disease is a common outcome. Approximately 50-60% of patients with locally recurrent SCCHN after curative-intent radiation therapy will ultimately die as a direct result of their disease1,2. Salvage therapy for locally recurrent disease is a notoriously difficult and perilous pursuit. SCCHN often recurs at a surgically inaccessible site, near a functionally critical structure that would be placed at risk by surgery or repeat radiation therapy, or in patients who have received high doses of radiation during initial therapy. The most consistently used palliative modality, chemotherapy, has proven to yield modest response rates and survival benefit in this patient population3,4.

Stereotactic radiosurgery represents a novel therapeutic option for patients with recurrent SCCHN. This therapeutic modality has shown promise in the treatment of tumors of the liver, pancreas, prostate, central nervous system and malignant skull base lesions5-8. Some reports have also suggested an application for this technology as salvage treatment for skull base and intracranial recurrences of nasopharyngeal carcinoma5-8. A retrospective study recently published in the radiation oncology literature suggests that stereotactic radiosurgery provides good short-term local control of recurrent SCCHN with few long-term complications5. In this case series, we present our experience with stereotactic radiosurgery (Cyberknife image-guided fractionated frameless stereotactic radiosurgery system) in patients with recurrent SCCHN who have undergone salvage surgery with close or positive resection margins.

METHODS AND MATERIALS

Retrospective chart review of 6 patients status post definitive chemoradiation therapy and salvage surgery for SCCHN. All patients were found to have close or positive resection margins and underwent CyberKnife stereotactic radiosurgery with the goal of optimizing locoregional tumor control.

RESULTS

Six patients underwent CyberKnife stereotactic radiosurgery following salvage surgery for SCCHN. 5 patients underwent re-irradiation of the cervical lymph nodes and one of the peristomal neck. The average dose of radiation was 23 Gy (Range 18-30 Gy). All radiation was administered in 5 fractions.

Morbidity of treatment was minimal with 1/6 patients complaining of mild mucositis following treatment. One patient was treated with CyberKnife in a palliative setting due to spinal metastases. He succumbed to his disease approximately 5 months after completion of Cyberknife therapy but was noted to tolerate CyberKnife therapy without difficulty.

Locoregional control was noted to be heightened by CyberKnife therapy with 5/6 patients alive after an average time of 8.5 months after treatment. 3/6 patients were noted to have resolving or stable cervical disease on 4-month post-treatment PET/CT. Despite this apparent radiographic evidence, these patients were clinically free of disease.

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REFERENCES