Primary Squamous Cell Carcinoma of the Thyroid

Thomas H. Alexander MD, MHS, Robert A. Weisman MD
UCSD Division of Head and Neck Surgery, University of California-San Diego

INTRODUCTION
Primary squamous cell carcinoma of the thyroid (PSCCT) is a rare head and neck malignancy. A case of PSCCT is presented and the relevant literature reviewed.

CASE
A 62 year old man with no history of smoking presented with two months of hoarseness. Examination revealed a rock hard mass in the right thyroid lobe. Fiberoptic laryngoscopy demonstrated an immobile right true vocal fold and no mucosal irregularities or lymphadenopathy were evident on CT. Fine needle aspiration yielded follicular epithelial cells without malignant lymphocytes. The entire right lobe was enlarged, firm, and contained a small calcified cyst. A fibrous lesion with inflammatory cells and no malignancy was reported on frozen section. Permanent sections revealed moderately differentiated squamous cell carcinoma. Full-body PET showed intense hypermetabolic activity in the right thyroid lobe only (Figure 2). The patient next underwent total thyroidectomy (Figure 3), and frozen sections revealed invasion of the recurrent laryngeal nerve, trachea, and the cricoid and thyroid cartilages. Final pathology showed clear margins and no evidence of a laryngeal primary (Figure 4). Postoperatively he received 66 Gy of radiation with concurrent cisplatin. A repeat PET scan 6 months after completion of therapy showed no evidence of disease.

DISCUSSION
PSCCT is extremely rare, with approximately 150 cases described in the English literature. Of all thyroid malignancies, only 0.7% are PSCCT. Metastasis or direct extension of squamous cell carcinoma from adjacent structures such as the larynx, esophagus, or trachea is much more common. Proposed etiologies for the development of PSCCT in a gland that normally does not contain squamous epithelium include squamous metaplasia of follicular epithelial cells in the face of chronic inflammation, squamous differentiation of other thyroid neoplasms, or the presence of embryonic rests in remnants such as the thyroglossal duct or ultimobranchial body. Patients usually present in the 5th to 7th decades of life. Several series have reported a higher incidence in women. Presentation and course are similar to that of anaplastic thyroid carcinoma. A rapidly enlarging neck mass and hoarseness are common presenting complaints. The tumors tend to be advanced at presentation and invasion of the trachea, esophagus, and recurrent laryngeal nerve is common. Reported outcomes have been poor relative to other squamous cell carcinomas of the head and neck with few patients surviving beyond 18 months despite aggressive treatment. The handful of reported long-term survivors underwent complete surgical excision followed by radiotherapy. Although chemoradiation alone has been ineffective in treating PSCCT, adding chemotherapy as a radiosensitizer might improve locoregional control.

CONCLUSION
PSSCT is a rare disorder with few reported cases. It has been associated with poorer outcomes than most other head and neck squamous carcinomas. Aggressive surgery followed by radiation or chemoradiation appears to be the current treatment of choice, with few cures reported for nonsurgical treatment regimens.

REFERENCES