

**ABSTRACTS**

Lanny Garth Close, MD, Section Editor

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**NEOPLASMS, MALIGNANT**


The authors evaluated the results of supracricoid partial laryngeal surgery (SCPL) on 23 patients with recurrence after primary failed radiation treatment of selected T1 and T2 glottic carcinomas. These patients had a mean treatment dose of 65 Gy delivered in 30 to 35 fractions over 6 to 7 weeks. The mean time between radiation treatment and discovery of recurrence was 15 months (range, 10–210 months). Disease was staged as recurrent rT1b (12 cases) and rT2 (11 cases). None of the patients were eligible for vertical partial laryngectomies, because of local tumor characteristics. The patients underwent eight modified cricothyroidopiglottopexies (modified CHEP), 10 cricothyroidopiglottopexies (CHEP), and five cricothyroidopexies (CHP).

At 3 and 5 years, the global survival rates were 82.9% and 69.04%, respectively. Oncologic control was obtained in 74% of patients, and oncologic control with laryngeal preservation was obtained in 66.6% of the patients. Six patients (26%) had recurrences and underwent total laryngectomies. Three were subsequently controlled.

The authors conclude that SCPL is an appropriate treatment for patients with radiation-failure rT1b and rT2 glottic carcinomas that are not amenable to vertical partial laryngectomy. The rate of disease control is high, and despite a postoperative complication rate of 18%, this surgical option should be considered in selected motivated patients as an alternative to total laryngectomy.

Jason Newman, MD


Cancer of the thyroid represents 1% of all malignancies. Although these tumors are usually very curable, approximately one of five patients will have recurrent disease develop. Postoperative patients are usually followed with clinical examination, serum thyroglobulin levels, radiolabeled iodine scans, and sonography. Occasionally, when tumors become dedifferentiated, they will not concentrate iodine. Therefore, there is a cohort of patients with rising serum thyroglobulin levels with negative iodine scans who are at significant risk for recurrence. The authors found that the patients generally required prolonged nasogastric tube and tracheotomy use compared with nonirradiated patients. They recommend that SCPL after radiation failure only be performed in highly motivated and relatively healthy patients.

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(PET) has emerged as a potential technique used to identify recurrence in these patients.

In this study, 33 patients who were previously treated with thyroidectomy and radioactive iodine and who had a rising thyroglobulin levels and negative radioactive iodine scan were studied with use of PET/CT scans. Before the PET/CT scan was performed, a treatment plan was formulated, and the results of the PET/CT scan were used to decide whether information from the PET/CT scan added additional information that either confirmed or altered the treatment plan.

In 13 (40%) of the 33 patients, additional information was seen that altered the treatment plan. One example of this was the detection of parapharyngeal space disease, which was not seen on clinical examination or on prior imaging studies. In nine (27%) of 33 patients, additional information was seen that confirmed the treatment plan. In 11 (33%) of the 33 patients, no additional information was gleaned from the PET/CT scan. Twenty patients underwent surgery; histologic documentation of disease was compared with the clinical findings. The PET/CT correlated with histologic findings in 25 of 36 specimens (70% accuracy). The specificity was 66%, and the sensitivity was 100%.

PET/CT is a useful method to detect site of recurrence in patients who have increased or rising thyroglobulin levels and negative radiolabeled iodine scans.

John Carew, MD

Population-Based Outcomes for Pediatric Thyroid Carcinoma.

In an effort to determine clinical features and clinical outcome for pediatric thyroid carcinoma, the authors reviewed all pediatric patients in a national cancer database (Surveillance, Epidemiology and End Results database) for the period 1988 to 2000. These included all patients from 0 to 18 years of age with a well-differentiated primary thyroid malignancy (papillary or follicular) presenting during this time period.

Clinical and tumor-specific data were analyzed in a total of 566 cases. The mean age at presentation was 16 years, with a female predominance of 84.8%. Papillary carcinoma was noted in 378 patients (66.8%); papillary with follicular variant was seen in 137 patients (24.2%); and follicular carcinoma was seen in 51 patients (9.0%). The average tumor size at presentation was 2.6 cm, with most (74.2%) having intrathyroidal disease alone. Positive nodal disease was noted in 37.1% of patients at initial diagnosis.

Most patients were treated with total thyroidectomy (72.8%); subtotal thyroidectomy was performed in 13.4% and simple lobectomy in 7.2%. Radioactive iodine treatment was administered in 51.4% of patients. The overall survival of the entire cohort was 153.8 months, limited to 155 months of maximum follow-up; patients with papillary carcinoma fared better than those with follicular carcinoma.

The authors conclude that overall survival for pediatric thyroid carcinoma is excellent. Male sex, increasing primary site extension, and follicular histologic subtype are associated with poorer prognosis, whereas cervical nodal involvement is not.

Joseph Haddad, MD

PATHOLOGY

The Oncogenic Activity of RET Point Mutants for Follicular Thyroid Cells May Account for the Occurrence of Papillary Thyroid Carcinoma in Patients Affected by Familial Medullary Thyroid Carcinoma.

Papillary thyroid (PTC) and medullary thyroid carcinoma (MTC) are both linked to activating mutations in the RET gene. Somatic RET rearrangements are present in 20% to 40% of cases of PTC resulting in chimeric RET/PTC oncoproteins. Germline point mutations in RET are found in nearly all MEN2 families. The gene rearrangements and point mutations both result in ligand-independent constitutively active oncoproteins. There are rare families having both MTC and MPC who have germline point mutations in RET. According to the authors, the oncogenic activity of RET point mutants for epithelial thyroid follicular cells has not been previously investigated.

The authors identified an MEN2 family in which three members had both MTC and PTC and carried a RET point mutation without RET gene rearrangements. The authors performed a series of elegant molecular studies on archival tumor and peripheral blood samples from the affected patients, as well as on a differentiated thyroid epithelial cell culture line. In the thyroid epithelial cell culture studies, the mitogenic activity, levels of kinase activity, and ligand-independent catalytic activity were significantly lower in RET point mutants than in RET/PTC. The authors conclude that a positive selection may exist to activate RET in thyroid follicular cells by gene rearrangement rather than point mutation. However, some RET point mutants can behave as conditional oncoproteins for thyroid follicular cells. The lower transforming activity of RET point mutants on thyroid follicular cells may account for the rare occurrence of PTC in families having germline point mutations in RET.

Mary R. Schwartz, MD
MEDICAL ONCOLOGY


Chemoradiotherapy has become established as a viable treatment modality for patients with advanced head and neck squamous cell carcinoma. The therapeutic effect on local regional control has been well established. The role in preservation of such functions as speech and swallowing is unclear.

The authors of this study performed a retrospective chart review of all patients who received chemoradiation therapy for advanced head and neck squamous cell carcinoma at the Cleveland Clinic Foundation. After initial chemoradiation therapy, patients received swallowing evaluation and interventions when clinically indicated. Routine speech pathology evaluation was not performed. Functional data were recorded at 3, 6, 12, and 24 months after the conclusion of therapy. The presence or absence of feeding tubes was recorded, and the quality of diet was determined on a four-point scale. Patients who died or had persistent/recurrent disease were censored. Therefore, the functional results that are reported reflect only the outcomes achieved in patients who were successfully treated by chemoradiation.

One hundred ninety-six patients were analyzed. Ten percent of patients required tracheotomy at some point during their treatment. Six percent of patients who were followed at 3 months maintained a tracheotomy. At 1 year, none of the surviving patients or patients who did not have a recurrence required tracheotomies.

Feeding tubes were much more prevalent. At the end of treatment, 76% of patients required a feeding tube compared with 66% at 3 months, 31% at 6 months, and 10% at 12 months. Interestingly, the primary tumor site did not affect either initial or long-term outcome in terms of function, diet, or presence of a feeding tube. Tumor stage was highly significant. Stages II and III were considered together and compared with stage IV. Patients with stage IV disease did significantly worse. Age was also a factor on univariate analysis, with older patients recovering less effectively than younger patients.

This study demonstrates that, in patients who survive at 2 years after treatment for oropharyngeal head and neck cancer after being treated with chemoradiation, functional outcomes can be quite good.

Mark K. Wax, MD

MISCELLANEOUS

Shoulder Disability after Different Selective Neck Dissections (Levels II-IV versus Levels II-V): A Comparative Study. J Cappiello, C Piazza, M Giudice, G De Maria, P Nicolai, Laryngoscope 2005;115:259–263. Selective neck dissection has become a standard surgical approach in patients at risk for occult lymph node metastasis or with low-volume regional metastatic disease. A variety of selective neck dissections exist for addressing certain clinical situations. One of the goals of use of selective neck dissection is to decrease operative morbidity. One of the most common sources of operative morbidity is spinal accessory nerve dysfunction with associated symptoms of shoulder dysfunction and pain.

In this study, 40 patients with cancer of the larynx or oropharynx undergoing selective neck dissections encompassing levels II through IV (group A) versus levels II through V (group B) were studied with regard to both subjective and objective measures. Subjective symptoms of shoulder dysfunction were seen in 15% of patients in group A compared with 20% in group B. On clinical examination, 5% of patients in group A had shoulder droop, whereas 30% of patients in group B had shoulder droop. When shoulder and trapezius strength were tested, none of the patients in group A had abnormalities, whereas one half of the patients in group B had abnormalities. Finally, electromyography of the upper trapezius showed dysfunction in 20% of the patients in group A and 85% of the patients in group B. This study demonstrated significant objective differences in shoulder function after selective neck dissections including level V compared with those not including level V. Objective symptoms by patient, however, were not significantly different.

John Carew, MD