disease; however, it is unclear how many of their patients initially showed ^{131}I localization in neoplasm outside the thyroid bed or if any showed ^{131}I uptake in the recurrent lesions. In the series of Flynn et al. (*4*), three of four patients with insular carcinoma received postoperative ^{131}I ablative therapy. Two (one with a prior diagnosis of metastatic follicular thyroid cancer and one with papillary carcinoma containing foci of insular carcinoma metastatic to bone) received more than one therapeutic ^{131}I dose. The percent of ^{131}I uptake was not given in either case.

Both reports documented the propensity of insular thyroid carcinoma to recur locally and as distant metastases (*1,4*). In addition, total thyroidectomy, nodal resection, and prophylactic radioactive iodide therapy "failed to control disease" in several patients. Currently, the percent of insular carcinomas that have sufficient ^{131}I concentration to allow postoperative ^{131}I therapy is unknown. Nevertheless, postoperative ^{131}I ablation of residual functioning thyroid tissue usually allows ^{131}I uptake in remaining neoplastic deposits or metastases that may not be identified on pre-therapy images (*10*). Furthermore, ^{131}I localization in residual thyroid bed tissue and/or in differentiated cell components of metastatic lesions may allow ablation of adjacent neoplastic cells that have poor ^{131}I uptake (*11*).

Although additional documentation is needed, it is likely that early detection of metastases will enhance ^{131}I therapeutic intervention and subsequently improve survival and/or palliation in patients with insular thyroid carcinoma. For this reason, postoperative ^{131}I imaging is recommended for all patients with insular carcinoma of the thyroid.

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EDITORIAL

Differentiating Anaplastic Thyroid Carcinomas

Differentiated thyroid carcinomas of follicular cell origin (pure papillary, papillary-follicular, and follicular carcinomas) are amenable to treatment with the combination of surgery, thyroxine suppression, and radioiodine ablation of thyroidal remnants and metastases, with excellent results relative to morbidity, recurrence, and survival in the overwhelming majority of patients. Medullary thyroidal carcinoma of C-cell origin tends to be a more aggressive tumor with unremitting progression and metastases to cervical lymph nodes, liver, bone, lungs, and adrenals unless early surgical intervention results in total removal and cure. Ten-year survival rates are about 50%.

On the other hand, undifferentiated, anaplastic carcinomas, until recent years, have been considered to be extremely aggressive and rapidly and almost universally fatal. The few survivors of these cancers were considered to result from removal, sometimes fortuitously, of small anaplastic carcinomas at a very early stage. In the last dozen or so years, electron microscopic and immunohistochemical techniques have been developed, permitting the recognition of a number of tumors of differing origin that have been included under the rubric of anaplastic thyroid carcinoma. Correctly categorizing and specifically treating these tumor types have a salubrious effect in a number of circumstances. Whereas the majority of anaplastic large-cell carcinomas (of follicular cell origin) still carry an extraordinarily grave prognosis, most of the anaplastic small-cell thyroid carcinomas are of the diffuse type and really represent primary malignant lymphoma (*1–3*); these primary thyroidal non-Hodgkins extranodal lymphomas are often confounded with

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other anaplastic thyroidal carcinomas. Advances in radiation therapy and chemotherapy for lymphoma in recent decades have resulted in a significant increase in longevity for patients suffering from anaplastic small-cell thyroid carcinomas.

In this issue of *The Journal of Nuclear Medicine*, Justin et al. report on another recently recognized category of anaplastic carcinoma: five patients with insular carcinoma were culled from a group of 35 cases of poorly differentiated carcinoma of the thyroid. This insular carcinoma was reclassified as a distinct histologic entity in 1984, has a follicular cell origin, appears to concentrate radioiodine, is potentially treatable with radioiodine, and demonstrates a less aggressive course than poorly differentiated large-cell thyroid carcinoma. Indeed, in the five cases reported, survival ranged from at least 6 mo to 5 yr with the patients still alive at the time of the report. Contrast this with large-cell anaplastic thyroid carcinoma where only a small percentage of patients survive beyond one year despite aggressive surgery, chemotherapy, and external radiation therapy.

Whereas radioiodine treatment has been recommended only for differentiated thyroid carcinomas of the papillary and follicular types in general, it is apparent that such treatment also may be useful in insular carcinoma where there is potential radioiodine localization. In addition, as the authors and others have indicated, ^{131}I localization in residual non-cancerous thyroid tissue or in differentiated components of metastatic lesions may allow for sufficient irradiation of adjacent neoplastic cells with therapeutic benefit (*4*). Radioiodine treatment even has been advocated in anaplastic large-cell carcinoma to attack the more differentiated follicular tumor components from which the poorly differentiated tumor arises (*5*). Parenthetically, even medullary thyroid carcinoma of C-cell, not follicular, origin may concentrate radioiodine with positive clinical results; irradiation of medullary carcinoma from radioiodine localization in residual normal thyroid tissue also has been suggested to be useful (*4,6*).

Given the generally invasive nature and poor prognosis of anaplastic or poorly differentiated thyroid carcinomas, it is important to aggressively undertake diagnostic measures to determine the histologic type, enabling the application of specific therapeutic measures, including surgery, external radiation and radioiodine therapy, and chemotherapy. This particularly applies to anaplastic small-cell carcinomas, medullary thyroid carcinomas and, now, insular carcinomas. With current knowledge of the latter two conditions, the conventional wisdom must be modified: evaluation for radioiodine uptake and localization with a view towards therapy is not futile in medullary and anaplastic carcinoma.

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