Design: Retrospective review of patients treated between 1986 and 1996.

Setting: Tertiary cancer center.

Patients: A total of 215 patients with previously untreated T1 (n=110) or T2 (n=105) cN0 SCCOT were identified. The median age was 59 years (age range, 14-88 years). Elective neck dissection (END) was performed in 51%, while the neck was observed in 49%. The END and surveillance groups differed significantly for the following features: clinical stage T2 (72% vs 28%), depth of invasion greater than 2 mm (68% vs 32%), poorly differentiated grade (75% vs 25%), and postoperative radiation therapy (33% vs 1%).

Main Outcome Measures: 5-year overall survival (OS), disease-specific survival (DSS), and neck recurrence rate (NRR).

Results: With a median follow-up of 93 months (range, 1-236 months), 5-year OS and NRR for the END vs surveillance groups were 73% vs 83% and 23% vs 20% ($P>.05$). The DSS for the END group was 78% vs 92% for the surveillance group ($P=.009$). Tumor size greater than 2 cm, depth of invasion greater than 2 mm, and high histologic grade were significant predictors of pathologically positive nodes in the END group.

Conclusion: Our policy of selective observation in patients with cN0 T1-T2 SCCOT is effective. Selected patients with tumors less than 2 cm in size, less than 2 mm in depth, and well-differentiated grade are suitable for observation of the cN0 neck.

S052 Head and Neck Melanoma in the Sentinel Node Era

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Objective: In the sentinel node (SN) era, do head and neck melanomas (HNM) have a poorer outcome than other melanomas (OMs)?

Design: Prospective database, 1994-2004. Characteristics, outcome of HNM vs OMs analyzed by Fisher exact test, *t* test, and χ^2 test.

Setting: Tertiary referral center.

Patients: A total of 755 melanoma SN biopsy patients.

Main Outcome Measure: Differences between HNMs and OMs.

Results: There were 17.4% HNMs, 82.6% OMs. There was a male HNM preponderance: 68.7% vs 50.3% ($P<.01$). HNM patients were older: 57.1 ± 16.6 years vs 53.3 ± 16.2 years ($P<.01$). There were fewer cases of superficial spreading melanoma in HNM (29.0% vs 53.7%, $P<.01$). There were more diagnoses in HNM of lentigo maligna (26.0% vs 1.9%, $P<.01$). Mean thickness was 2.32 ± 1.9 vs 2.31 ± 2.9, $P=.49$. Fewer HNMs had a Clark level of less than IV (13.3% vs 24.0%, $P<.01$). More SNs were harvested from HNMs (3.72 ± 3.2 vs 2.89 ± 2.6, $P<.01$), but a lower percentage of positive SNs were found (9.2% vs 16.0%, $P<.05$). There was no difference in local, regional, or distant recurrence (5.3%, 6.9%, 5.3% HNMs and 3.4%, 5.5%, 6.7% OMs). The 2/5-year survival for HNM was 95.8%/57.1% vs 94.8%/71.3% (not significant).

Conclusions: HMN patients are older males with more SNs harvested. They do not appear to have poorer outcomes than patients with OMs.

S053 Epidemiology and Prognostic Factors of Cutaneous Head and Neck Melanoma: Population-Based Study

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Objective: Study objective was to describe the epidemiology of cutaneous head and neck melanoma (CHNM), and to identify factors associated with mortality from this disease.

Design: Population-based cohort study.

Setting: Patients treated for CHNM in Ontario between 1994 and 2002 were identified through a provincial cancer registry. A Cox proportional-hazards regression model was used to analyze the data.

Patients: A total of 2218 patients with CHNM were identified, constituting 16% of all melanomas in Ontario. The average age of the cohort was 66 (SD, 16) years; 61% (n=1363) were males.

Main Outcome Measure: Patients' vital status (dead/alive).

Results: The incidence of CHNM increased from 2 in 100 000 in 1996 to 2.7 in 100 000 in 2001, while mortality remained stable. The proportional hazards model showed that increased age (hazard ratio [HR], 1.06; 95% confidence interval [CI], 1.04-1.06) and male gender (HR, 1.31; 95% CI, 1.03-1.66) had significantly higher risk of death. Patients with lesions of the scalp and neck had 53% higher risk of death than those with lesions of the face. Nodular melanoma (HR, 1.61; 95% CI, 1.17-2.24) had the worst prognosis compared with other morphologic types. Increased tumor thickness (HR, 1.05; 95% CI, 1.03-1.07) and a Clark level of V (HR, 1.52; 95% CI, 1.01-2.22) compared with level I/II were significantly associated with increased mortality.

Conclusions: Our study demonstrated an increase in incidence in CHNM. Advanced age, male gender, nodular morphology, tumor thickness, and a Clark level of V carried significant risk of death, whereas facial melanomas had favorable prognosis.

S057 Absorption Spectroscopy Potentially Identifies Carcinoma on Fine-Needle Aspiration Biopsy of Thyroid Nodules

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Objective: Thyroid nodules are a common disorder. Although fine-needle aspiration biopsy (FNAB) is highly

accurate in papillary thyroid tumor diagnosis, discrimination between benign and malignant follicular neoplasms is currently not possible. In this case, there is a lack of biological marker able to identify malignant transformation. The aim of this pilot study is to verify optical absorption differences on FNAB of thyroid carcinomas and goiters.

Design: Diagnostic test development.

Subjects: Samples of FNAB of thyroid nodules and corresponding normal surrounding gland, suspended in 2 mL of dimethyl sulfoxide, were surgically collected and frozen.

Intervention: The absorption spectra of samples were registered in Cary 17D-OLIS, from 200 nm to 1200 nm with 1-nm resolution. The spectra of each sample of thyroid nodule were normalized by the corresponding normal thyroid, as an internal control, determining the absorbance spectra.

Results: We evaluated 36 samples from 9 patients, including 6 adenomatous goiters, 2 carcinomas, and 1 Hashimoto thyroiditis. All samples from carcinoma showed a lower absorbance among 520 nm and 560 nm, compared with that of normal corresponding thyroid, contrasting with those curves from goiters or Hashimoto thyroiditis, which presents many peaks of higher absorbance at this band.

Conclusions: Our preliminary results suggest that absorption spectroscopy may be useful to distinguish thyroid carcinomas from goiters or Hashimoto thyroiditis. A further evaluation deserves to be done on FNAB of follicular thyroid pattern, and sample numbers should be increased.

S060 Serum Protein Profile Analysis in Patients With Papillary Thyroid Carcinoma

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Objective: To determine the sensitivity and specificity of surface-enhanced laser desorption/ionization time-of-flight mass spectrometry (SELDI-TOF-MS) for papillary thyroid cancer (PTC) detection.

Design: SELDI-TOF-MS protein profiles of patients with PTC, benign nodular disease (BND), and healthy controls were analyzed to determine the sensitivity and specificity of SELDI assay for PTC detection. Data analysis was performed using Ciphergen Biomarker Wizards and Biomarker Pattern Software to process the spectral data and classify the disease status of the patients.

Subjects: Serum samples were collected prospectively from 7 PTC patients, 8 BND patients, and 7 healthy control volunteers.

Intervention: All sample patients underwent thyroidectomy between October 2004 and January 2006.

Results: The majority of protein peaks resolved by the SELDI assay were in the range of 1 to 20 kDa. Classification tree analysis based on peak expression distinguished patients with PTC from BND with 85.7% sensitivity and 100% specificity. Serum samples from PTC patients differed most significantly from BND by the underexpression of a protein peak at 11 101 Da.

Conclusions: This pilot study demonstrates that proteomic analysis of serum protein profiles distinguishes patients with PTC from patients with BND with a high degree of sensitivity and specificity. Further investigation into the clinical utility of this technology in PTC biomarker detection and surveillance is warranted.

S062 Nuclear, Cytoplasmic Expression of Galectin-3 Is Associated With β-Catenin/Wnt-Pathway Activation in Thyroid Carcinoma

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Objectives: Cytoplasmic galectin-3 is overexpressed in papillary thyroid carcinoma (PTC) and may activate the β-catenin/Wnt pathway, resulting in altered cyclin-D1 levels. Nuclear galectin-3 has not been well studied in PTC. We sought to characterize the localization of galectin-3 in benign and malignant thyroid neoplasms and correlate this with alterations in β-catenin and cyclin-D1 expression.

Design: Immunohistochemical study of 116 paraffin-embedded archival specimens using tissue-microarray technique.

Methods: Thyroid tissue microarrays of 61 carcinomas (35 papillary, 13 follicular, 11 medullary, and 2 anaplastic), 48 adenomas, and 7 normal thyroids were stained by standard immunohistochemistry with monoclonal antibodies against galectin-3, β-catenin, and cyclin-D1. Nuclear and cytoplasmic expression of galectin-3 was correlated with clinical parameters, β-catenin, and cyclin-D1 expression.

Results: Both cytoplasmic (56%) and nuclear (42%) galectin-3 expression was observed in most malignant neoplasms but absent in benign thyroid specimens ($P<.001$). Among carcinomas, cytoplasmic galectin-3 expression was observed in PTC (82%), follicular (33%), and medullary (9%), but absent in anaplastic carcinomas ($P<.001$). Galectin-3 nuclear expression was observed in PTC (62%) and follicular (33%) carcinomas, but undetectable in medullary, anaplastic carcinomas ($P<.001$). Cytoplasmic but not nuclear galectin-3 was inversely correlated with TNM stage ($P=.02$). There was a strong correlation between cytoplasmic/nuclear β-catenin expression and both nuclear ($P=.04$) and cytoplasmic ($P=.003$) galectin-3 expression. Similarly, there was a strong association between galectin-3 nuclear ($P<.001$) and cytoplasmic ($P<.001$) expression and cyclin-D1 expression.

Conclusion: Cytoplasmic and nuclear galectin-3 expression appears to be associated with activation of the Wnt-signaling pathway in well-differentiated thyroid neoplasms.