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values have been found to be low. Low vitamin D may be a risk factor for thyroid cancer. Decreased MPV values may be used as a predictor of thyroid cancer.

DOI: 10.1530/endoabs.49.EP1380

EP1381

BRAFV600E status and Stimulated Thyroglobulin at ablation time increase prognostic value of American Thyroid Association (ATA) classification systems for persistent disease in Differentiated Thyroid Carcinoma (DTC)

Andrea Repaci¹, Valentina Vicennati¹, Alexandro Paccapelo¹, Nicola Salituro¹, Ottavio Cavicchi², Fabio Monari³, Giovanni Tallini⁵, Elisa Gruppioni⁴, Annalisa Altamari⁴, Michelangelo Fiorentino⁴ & Uberto Pagotto¹

¹Endocrinology Unit, Department of Medical and Surgical Sciences, S. Orsola-Malpighi Hospital, Alma Mater University of Bologna, Bologna, Italy; ²Otolaryngology Unit, S. Orsola-Malpighi Hospital, Bologna, Italy; ³Radiation Oncology Center, Department of Experimental, Diagnostic and Specialty Medicine-DIMES, S. Orsola-Malpighi Hospital, Alma Mater University of Bologna, S. Orsola-Malpighi, Bologna, Italy; ⁴Laboratory of Oncologic Molecular Pathology, S. Orsola-Malpighi Hospital, Bologna, Italy; ⁵Anatomic Pathology-Molecular Diagnostic Unit AUSL of Bologna, Department of Medicine (DIMES), Bologna, Italy.

Background

Stimulated Thyroglobulin levels measured at the time of remnant ablation (Htg-A) and BRAFV600E mutation were shown to have prognostic value in predicting persistent disease in DTC. The aim of this study was to evaluate the prognostic role of Htg-A combined with BRAFV600E status in association with revised American Thyroid Association (ATA) risk stratification.

Patients and methods

620 patients treated for a DTC were included in this study with median follow-up duration of 6.1 year. All patients were submitted to a total thyroidectomy, followed by radioiodine ablation. Patients with positive antibodies anti-Tg were excluded. The predictive value of Htg-A was calculated by receiver operating characteristic curve analysis. Cox proportional hazard regression modeling, including BRAF status, Htg-A and ATA classification system, was assessed to evaluate existing persistent disease risk.

Results

BRAF status and Htg-A levels together improve ATA risk classification in all categories. In particular in Low risk ATA only BRAFV600E + Htg-A > 8.9 ng/ml was associated with persistent disease ($P=0.001$ HR 60.2 CI 95% 5.28–687). In Intermediate ATA risk BRAFwt + Htg-A > 8.9 ng/ml was associated with persistent disease ($P=0.029$ HR 2.71 CI 95% 1.106–6.670) and BRAFV600E + Htg > 8.9 ng/ml was associated with persistent disease ($P=0.000$ HR 5.001 CI 95% 2.318–10.790). In High risk ATA BRAFV600E + Htg-A < 8.9 ng/ml was associated with persistent disease ($P=0.042$ HR 5.963 CI 95% 1.069–33.255) and BRAFV600E + Htg-A > 8.9 ng/ml was associated with persistent disease ($P=0.002$ HR 11.564 CI 95% 2.543–52.576).

Conclusion

BRAF status and Stimulated Thyroglobulin levels at ablation time improve the ATA risk stratification, so also Htg-A could be included in ATA risk classification.

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EP1382

High sensitivity of BRAF detection method does not alter response to therapy of papillary thyroid cancer of known BRAF status

Agnieszka Walczyk¹, Aldona Kowalska^{1,2}, Artur Kowalik¹, Janusz Kopczyński¹, Iwona Palyga¹, Danuta Gasior-Periczak¹, Estera Mikina¹, Katarzyna Lizis-Kolus¹, Dorota Szyska-Skrobot¹, Monika Szymonek¹, Stefan Hurej¹, Maciej Kajor³, Magdalena Chrapek² & Stanislaw Gozdz^{1,2}

¹Holycross Cancer Centre, Kielce, Poland; ²Jan Kochanowski University, Kielce, Poland; ³Medical University of Silesia, Katowice, Poland.

Background

A dynamic risk stratification with modified initial estimated risk based on response to therapy and disease course is one of the crucial changes adopted recently by the American Thyroid Association (ATA). The analysis of BRAF status is not routinely recommended by ATA, although this finding may be advantageous to individualized risk-adapted approach in papillary thyroid cancer (PTC). The methods used to detect the BRAF V600E are known of variation in the sensitivities, variable susceptibilities for DNA degradation, and possible equivocal results with direct DNA Sanger sequencing (Seq), particularly. The aim of this study was to examine the relation between the BRAF status of PTC detected applying three methods and ATA response-to-therapy categories (excellent, indeterminate, biochemical/structural incomplete), and recurrence identified after no evidence of disease (NED) or persistence disease.

Methods

Unselected 723 PTC cases with known BRAF status diagnosed 2000–2013, actively monitored at single institution, and reviewed retrospectively up to December 31, 2015. Genotyping of BRAF was implemented using the algorithm: Seq, followed by more sensitive allele-specific polymerase chain reaction (PCR), and real-time PCR (quantitative PCR; qPCR). Considering various limitations of particular methods 639 specimens were available for the analysis by Seq, 638 by ASA-PCR, and 705 by qPCR.

Results

BRAF V600E was found in 51.6%, 67.7%, and 67% PTCs detected by Seq, PCR, and qPCR, respectively. The indeterminate response was significantly more frequent in BRAF-positive PTCs identified by SDefault ($P=0.03$), but not by ASA-PCR ($P=0.07$), and qPCR ($P=0.06$). There was no significant relation between BRAF-positive cases and other not-excellent response-to-therapy categories, recurrences and persistent disease regardless of the method used.

Conclusions

The BRAF V600E mutation identified by high sensitive methods (ASA-PCR, qPCR) did not significantly alter a response-to-therapy category and out-come of PTC. However, an indeterminate response was more frequent in BRAF-mutated PTC detected by direct sequencing.

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EP1383

Thyroid nodules ultrasound classification and the importance of the endocrinologist clinical feeling

Bruno Madeo^{1,2}, Giulia Brigante^{1,2}, Anna Ansaloni^{1,2}, Erica Taliani^{1,2}, Manuela Simoni^{1,2} & Vincenzo Rochira^{1,2}

¹Unit of Endocrinology, Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Modena, Italy;

²Azienda Ospedaliero-Universitaria di Modena, Modena, Italy.

Background and aim of the study

Several ultrasound (US) classifications for estimating thyroid nodules risk have been proposed. Since most of them are hardly applicable in clinical practice, we created a local tool, named Modena classification (MC), considering US characteristics and clinician subjective impression. The aim is to verify the diagnostic accuracy of MC and to compare it to US classifications of American Thyroid Association (ATA) (1) and British Thyroid Association (BTA) (2).

Methods

We prospectively enrolled 111 patients (33M, 78F; age 19–75; total 457 nodules) with an indeterminate, suspicious for malignancy or malignant cytology. All the patients underwent neck US before surgery and a score risk was assigned, according to MC: low (not certainly nodular or not suspect); intermediate (indeterminate); high (suspect or very suspect). Then, we retrospectively classified nodules according to ATA and BTA. The US pattern was related to histology.

Results

All the classifications had low sensitivity and positive predictive value (PPV), and high specificity and negative predictive value (NPV) for low risk categories. For the intermediate risk category, BTA had the highest accuracy (68%). For higher risk categories, MC had good sensitivity (62%), high specificity (89%) and accuracy (81%); ATA had high sensitivity (83%), low specificity (48%), accuracy 58%; BTA had high sensitivity (88%), low specificity (44%), accuracy 57%.

Conclusions

A classification that considers the subjective impression of the clinician, in addition to the known US characteristics, has highest accuracy and specificity compared to guidelines classifications, particularly if the nodule has suspect US features.

References

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 DOI: 10.1530/endoabs.49.EP1383

EP1384

Five-year follow-up of thyroid cold nodules with somatic oncogene mutations in Hungarian patients

Bálint Tobiás^{1,4}, Bernadett Balla^{1,4}, Petra Soltész¹, János P Kósa^{1,4}, János Horányi², Balázs Járny³, Eszter Székely³, Roland Istók³, Tamás Székely³ & Péter Lakatos¹

¹1st Department of Internal Medicine, Semmelweis University, Budapest, Hungary; ²1st Department of Surgery, Semmelweis University, Budapest, Hungary; ³2nd Department of Pathology, Semmelweis University, Budapest, Hungary; ⁴PentaCore Lab Ltd, Budapest, Hungary.

Cold nodules are one of the most common findings on scintiscans and ultrasound examinations of the thyroid gland. About 5–10% of these nodules turn out to be histologically malignant. Our aim was to examine the predictive value of somatogenetic alterations associated with thyroid cancer in FNA samples of thyroid cold nodules being cytologically benign at the beginning of the study. These alterations included single nucleotide mutations (BRAF, HRAS, NRAS, KRAS) and genetic translocations (RET/PTC1, RET/PTC3, PAX8ex7/PPARgamma, PAX8ex9/PPARgamma). The SNPs were tested by real-time PCR with fluorescence melting curve analysis and the rearrangements were detected by Taqman probe-based quantitative real-time PCR. We have analyzed 779 consecutive FNA samples and followed the patients up for 5 years. We identified 39 BRAF, 23 NRAS, 9 HRAS, 1 KRAS mutations and 1 RET/PTC3 rearrangement. No PAX8/PPARgamma rearrangements were demonstrated in the nodules. During the five-year follow-up, 57 cases (7.3%) were classified as malignant by histology, from which we identified genetic alterations in 27 (47.4%). The statistical performance of our genetic panel showed a specificity of 93.6%, sensitivity of 47.4%, a negative predictive value of 95.8% and a positive predictive value of 37.0%. In summary, our test approach may be used for the prediction of malignant transformation of thyroid cold nodules, however, its sensitivity requires improvement.

DOI: 10.1530/endoabs.49.EP1384

EP1385

Usefulness of preoperative ultrasonography and computed tomography for evaluation of recurrent laryngeal nerve invasion by Papillary Thyroid microcarcinoma

Keiko Ohkuwa, Tadatoshi Osaku, Tetsuyo Maeda, Yuna Ogimi, Chie Masaki, Junko Akaishi, Kiyomi Y Hames, Chisato Tomoda, Akifumi Suzuki, Kenichi Matsuzo, Takashi Uruno, Wataru Kitagawa, Mitsuji Nagahama, Kiminori Sugino & Koichi Ito
 Ito Hospital, Tokyo, Japan.

Background

Papillary thyroid microcarcinoma (PTMC) has low malignant potential and an extremely good prognosis. However, surgical findings of asymptomatic PTC, can occasionally reveal tumor invasion into the recurrent laryngeal nerve (RLN).

The present study assessed the feasibility of evaluating tumor invasion into the RLN using ultrasonography (US) and computed tomography(CT).

Materials and methods

Of 7,916 patients with a PTC who underwent surgery at our hospital, 35 with preoperative tumors that were ≤ 10 mm, without distal metastasis or lymph node metastasis, and with surgical findings of RLN invasion were included. The location of the tumor and the degree of contact with the thyroid capsule (DCTC) were examined by US and CT.

Results

Ten of the 35 patients were treated by combined resection of the RLN, and 25 patients were treated by shaving the RLN. US revealed that the tumor was located at the dorsal side of the thyroid in 31 patients (88.5%). In all patients who were treated by combined resection of the RLN, the tumor was located at the dorsal side of the thyroid. Among these patients, the DCTC determined by US was $\geq 25\%$ in nine patients and $<25\%$ in one. Among those who were treated by RLN shaving, the DCTC was $\geq 25\%$ and $<25\%$ in nine and 16 patients, respectively ($P=0.003$). The DCTC was $\geq 25\%$ in all patients who were treated combined resection and in 15 of the 25 patients who treated by RLN shaving (≥ 0.018) according to CT imaging. The tumor was located 1–1.5 cm from the cricoid cartilage in most patients who were treated by combined resection.

Conclusions

When a PTC is located at the dorsal side of the thyroid with $\geq 25\%$ DCTC, surgery should be selected for RLN invasion. Our results showed that the accuracy of predicting recurrent laryngeal nerve invasion can be improved by combining US with neck CT.

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EP1386

Solitary metastasis of papillary thyroid cancer in the sellar region and cavernous sinus

Lila Brakni, Lounes Haffaf, Yamina Aribi, F Hameg & Samia Ouldakblia
 Army Hospital, Algiers, Algeria.

The commonest site of metastasis from papillary carcinoma is regional lymph nodes. Distant metastases are rare, most presenting synchronously. Brain metastases in papillary carcinoma are rare, reported with a frequency of 0.1–5% and cavernous sinus metastasis is extremely rare.

Case report

A 62-year-old woman presented with a history of non-secretory pituitary macroadenoma present with symptoms of hypopituitarism. MRI of the brain revealed a $4.5 \times 3.1 \times 3$ cm, extension into the cavernous sinus. The tumor was not resectable, she underwent a simple biopsy in view of the haemorrhagic nature of the tumor. Histopathology revealed a tumor with diffuse papillary architecture. On immunohistochemistry: positive for TTF1, PAX8, thyroglobulin, TPO; Ki67 (10–15%) and negative for GH, LH, FSH, ACTH, TSH. A diagnosis of metastatic papillary carcinoma was made. Thyroid ultrasound revealed two hypochoic nodules. After thyroidectomy the histopathology was papillary micro- carcinoma thyroid-follicular variant of 05 mm. She received radioiodine therapy.

Discussion

The incidence of distant metastases from papillary carcinomas is reported to be 6–23%, the majority occurring within 5 years of the initial diagnosis. There have been case reports of papillary carcinoma with metastasis at unusual sites like the breast and cavernous sinus. All these cases were associated with a missed diagnosis of thyroid carcinoma, like our case, should be considered exceptional. There have been five reports of papillary carcinoma with metastasis to the skull base.

Conclusion

There is no consensus for the treatment of papillary thyroid carcinoma with cavernous sinus metastasis. Thus, that solitary distant metastasis from thyroid carcinoma though rare, is a possibility, a difficult diagnosis to be made on radiology.

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