

## Follicular Variant of Papillary Thyroid Carcinoma (FVPTC)

Hans J. Biersack<sup>1\*</sup> and Hojjat Ahmadzadehfar<sup>2</sup>

<sup>1</sup>*Emeritus of Nuclear Medicine, University of Bonn, Beta klinik Bonn Joseph-Schumpeter-Allee 15, 53227 Bonn, Germany*

<sup>2</sup>*Department of Nuclear Medicine, University Hospital Bonn, Sigmund-Freud-Str. 25, D-53127 Bonn, Germany*

\***Corresponding author:** Hans J. Biersack, Professor, Emeritus of Nuclear Medicine, University of Bonn, Beta klinik Bonn Joseph-Schumpeter-Allee 15, 53227 Bonn, Germany, Tel: +49-228-287-15181/0, E-mail: [juergen.biersack@ukb.uni-bonn.de](mailto:juergen.biersack@ukb.uni-bonn.de)/[hjbiersack@web.de](mailto:hjbiersack@web.de)

**Received Date:** August 2, 2017; **Accepted Date:** August 3, 2017; **Published Date:** August 6, 2017

**Citation:** Biersack HJ, Ahmadzadehfar H (2017) Follicular Variant of Papillary Thyroid Carcinoma (FVPTC), Rep Thyroid Res 1: e001.

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During the last years, a new entity of differentiated thyroid cancer is being discussed. This topic has been addressed in a paper published by Daniels [1]. Here, it is stated that the distinction between tumour groups in patients with FVPTC is possible by the detection of mutations. Classical papillary thyroid carcinoma (cPTC) is characterized by BRAFV600E. On the other side, follicular adenoma and FTC do not harbour this mutation, but are characterized by RAS mutations. RAS mutations cannot be found in cPTC. Thus, FVPTC is a special tumour entity. Noninvasive encapsulated tumours with RAS-mutant may be considered as benign follicular adenomas. With respect to the somewhat larger size of many FVPTC compared with cPTC, FVPTC seems to be more aggressive. Many of these patients will undergo completion thyroidectomy and radioactive iodine therapy. On the other hand, noninvasive encapsulated FVPTC seems to be more indolent and it is questioned whether this tumour entity is a malignant lesion. This is a reason why the term noninvasive follicular tumours with papillary-like nuclear features NIFTP form a separate tumour entity which is considered as benign tumours. In the latter case completion thyroidectomy and radioactive iodine therapy are spared. The recommendations how to proceed with these patients have to be substantiated by larger cohorts.

In 1983, one of the authors (HJB) published a paper [2] on the treatment of highly differentiated thyroid carcinoma with respect to the aggressiveness of therapy: One patient with occult follicular carcinoma presented with a huge bone metastasis. A second case suffered from papillary carcinoma and presented with extensive lymph node metastases. Neck dissection revealed huge lymph node metastases with follicular as well as papillary structures. This case has

to be classified as FVPTC. In a third patient with papillary carcinoma, a huge highly differentiated PTC with lymph node metastases and infiltration of the organ capsule and adjacent musculature was found. Chest radiology revealed additionally pulmonary metastases, but being iodine negative. From these observations it was concluded that even small clinically occult follicular carcinoma may produce huge haematogenic bone metastases. Papillary carcinoma may produce lymph node metastases with follicular structures and papillary carcinoma though highly differentiated may produce haematogenic lung metastases which do not accumulate radioiodine. From the stand point of the clinician, radioiodine therapy of advanced differentiated thyroid cancer may require radioiodine therapy after dosimetry. This is in accordance with an editorial which was just published by Verburg et al. [3]. The statement by Daniels [1] that FVPTC has lower mortality and less frequent distant metastases than FTC, but higher mortality and more frequent distant metastases than cPTC gives rise to the assumption that studies with larger cohorts of patients and longer follow-up are needed before the frequency of radioiodine therapy can be reduced.

### References

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3. Verburg FA, Luster M, Giovanella L (2017) "Reset button" revisited: why high activity <sup>131</sup>I therapy of advanced differentiated thyroid cancer after dosimetry is advantageous for patients. *Eur J Nucl Med Mol Imaging* 44: 915-917.