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Early Thyroid Cancer Detection

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Abstract

Thyroid cancer is among the most common cancer in women and new cases continue to rise in the entire world. There is rarer subset of thyroid cancer as papillary microcarcinoma (black ink) that even small is aggressive and there is the need to early diagnosis to avoid their insidious behaviour. The incidence of this cancer is kept under control mostly by surgery. The current issue comprises of the fusion three articles pertaining to the development and validation of a standard method for investigated the utility of the Ultrasonography with BRAF mutation testing of thyroid fine-needle aspiration cytology specimens for the risk papillary thyroid microcarcinoma (PTMC).

Keyword: Ultrasonography; BRAF; Papillary Thyroid Microcarcinoma; Black Ink

Abbreviations: LNM: Lymph Node Metastasis; ETE: Extra-Thyroid Cancer Estension; PTMC: Papillary Thyroid Microcarcinoma.

Introduction

According to WHO Papillary Microcarcinoma is any thyroid papillary carcinoma with a diameter of 1 cm or less [1]. These tumors are occasionally diagnosed as an incidental finding after thyroidectomy for other pathology or autopsy. Malignant behavior has been proven by several authors [2-4]. The data from the United States National Cancer Institute Surveillance, Epidemiology and End Results Program (SEER) shows that the incidence of thyroid cancer is on the rise [5]. The causes of papillary carcinoma are unknown, but there are well known risk factors for the development of thyroid cancer (ionizing radiation, iodine deficiency, autoimmunity, familiarity) [6,7]. The mutation of the BRAF gene [8] and the RET / PTC rearrangement [9] represent the genetic alterations that are more frequently associated with the thyroid papillary carcinoma.

Ultrasonography represents the most sensitive imaging method for early diagnosis of thyroid lesion [10,11]. The mission of this scientific article is to inform both the global scientific community and patients affected by cancer, that thanks to the development of a new revolutionary technology, we are able now of detecting thyroid cancer at an increasingly precocious stage, paving the way for a new era in diagnosis, therapy and resolution of this disease. It is vital to underline under every aspect the enormous difference between advanced cancers, invasive carcinomas between 0.7 and 1, 5 cm and the Black Ink, a 0.3 cm microcarcinoma of the infiltrating type, detectable by ultrasound diagnostics, especially in terms

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of outcome and therapeutic requirements. The tumor characteristics of the Black Ink [12] highlighted from this research provides in fact, a reliable prognostic classification, in order to define an effective therapeutic plan.

This new tumor's lesion must be well defined in a variant of the papillary thyroid's cancer with a surprisingly malignant prognosis. Being by nature, an infiltrating type, it is commonly classified in the dimensional subgroup of small papillary tumors. For these reasons this scientific work has implemented an accurate analysis of the histological characteristics, and of the long-term prognosis, underlining the differential diagnosis between the differentiated papillary microcarcinoma and the microcarcinoma infiltrating type. Mixing these different pathological entities within a common definition of "papillary microcarcinoma (PTMC)" creates confusion in the communication process, and potentially compromises the management of a well-measured therapy in individual cases.

According to prestigious authors, the optimal cut-off value of a tumor size which will enable to predict the risk of a lymph node metastasis (LNM) in a Papillary thyroid microcarcinoma were the following: Lim et al indicated it would be 0.7 cm, Zhang et al., indicated it would be 0.6 cm, Chang et al suggested it would be 0.5 cm and finally Wang claims the value is 0.575 cm (area under the curve 0.721) according to the ROC curves. BRAF mutations are associated with high risk features, including extra-thyroid cancer extension (ETE) and multifocality, and are also predictive of an increased risk of lateral compartment nodal disease [13].

We can state that the BRAF mutation has emerged as a promising prognostic factor in the risk stratification of PTMC [14]. Nowdays, thanks to the fusion of these three important researches focusing on the percentage of biological risk factors due to the non-occult tumors of very small size, the cut-off has dropped to 0.3 cm. This value is of great importance because, the size of PTMC in Ultrasound Images are a fundamental data in order to predict the stage and aggressiveness of the tumors, it may also become an advantageous tool's predictor for Microcarcinomas prognosis and assist us to choose the right treatment. In analyzing the phenomenology of this scientific discovery, we can certainly affirm that all the great intuitions, will move in fields of the human mind that, in reality, have little to do with the classic logical reasoning, as it is commonly understood, and as anticipated by Jules Henri Poincarè, in his radical critique of the classic concept of the scientific thought.

Poincare used to define the "subliminal self "that sort of subjective ability to find a connection between a variety of acquired data and all the scientific discoveries that emerges from them. The current Issue comprises of the articles pertaining to the development and validation of a standard method. Observation after observation, ultrasound examination after ultrasound examination Ersilio Trapanese and Giulio Tarro [15,16] began to structure their hypothesis, by crystallizing this new micro-lesion of the thyroid's tumor: this is how "Black Ink" was born. A useful research that led to the complete healing of numerous patients, unaware carriers of this aggressive tumor that, if not diagnosed in such early times, could have caused terrible consequences, and in the worste case scenario to the patient's death.

Conclusion

Ultrasonography, FNAC and BRAF molecular study have proven to be the most sensitive diagnostic combination for the early detection of thyroid cancer. The positivist turn of this original article gives back value to Science and Diagnostic Imaging. Science, for Karl R. Popper is not like the universal and absolute imaging of Kant, but it evolves, changes, progresses continuously even if with intervals of arrest and fall. Today, we can state that this original scientific contribution of these researchers has brought progress in science, an important advancement and discovery which will save more life from despair and certain death. We live in a "modern world", we must be determined to make these improvements come true for the sake of medical research and prevention, for a Better Future where hope is not just an option, but reality.

References

1. Hedinger C, Williams ED, Sobin LH. (1989) The WHO histological classification of thyroid tumors: a commentary on the second edition. Cancer 63(5): 908-911.

2. Lastra RR, LiVolsi VA, Baloch ZW (2014) Aggressive variants of follicular cell-derived thyroid carcinomas: a cytopathologist's perspective. Cancer Cytopathol 122: 484-503.

3. Paul W, Gikas, Stanley S, Labow, Walter D, et al. (1967) Occult metastasis from occult papillary carcinoma of the thyroid. Cancer 20(12): 2100-2104.

4. Silver CE, Owen RP, Rodrigo JP, Rinaldo A, Devaney KO, et al. (2011) Aggressive variants of papillary thyroid carcinoma. Head Neck 33(7):1052-1059.

5. Howlader N, Noone AM, Krapcho M, Miller D, Bishop K, et al. (2016) SEER Cancer Statistics Review, 1975-2014, National Cancer Institute.

6. Cao J, Chen C, Chen C, Wang QL, Ge MH (2015) Clinic pathological features and prognosis of familial papillary thyroid micro carcinoma– a large-scale, matched, case-control study. Clin Endocrino 84(4): 598-606.

7. Sampson RJ, Key CR, Buncher CR, Lima S (1969) Thyroid carcinoma in Hiroshima and Nagasaki. Prevalence of thyroid carcinoma in autopsy. JAMA 209(1): 65-70.

8. Brzezianska E, Pastuszak-Lewandoska D, Wojciechowska K, Migdalska-Sek M, Cyniak Magierska A, et al. (2007) Investigation of V600E BRAF mutation in papillary thyroid carcinoma in the Polish population. Neuro Endocrinol Lett 28(4): 351-359.

9. Cahill S, Smyth P, Finn SP, Denning K, Flavin R, et al. (2006) Effect of RET/PTC 1 rearrangement on transcription and posttranscriptional regulation in a papillary thyroid carcinoma model. Mol Cancer 5: 70.

10. Li QS, Chen SH, Xiong HH, Xu HH, Li ZZ, et al. (2010) Papillary thyroid carcinoma on sonography. Clin Imaging. 34: 121-126.

11. Kim GR, Kim MH, Moon HJ, Chung WY, Kwak JY, et al. (2013) Sonographic characteristics suggesting papillary thyroid carcinoma according to nodule size. Ann Surg Oncol 20(3): 906-913.

12. Trapanese E, Agrusta M, D Arco E, Tarro G (2017) Insidious rare thyroid microcarcinoma "Black Ink". Indian J Appl Res 7: 67.

13. Lin KL, Wang OC, Zhang XH, Dai XX, Xu XQ, et al. (2010) The BRAF mutation is predictive of aggressive clinic pathological characteristics in papillary thyroid micro carcinoma. Ann Surg Onocol 17(12): 3924-3930.

14. Xing M (2009) BRAF Mutation in Papillary Thyroid Micro carcinoma: the Promise of Better Risk Management. Ann Surg Oncol 16(4): 801-803.

15. Trapanese E, De Bartolomeis C, Angrisani B, Tarro G (2018) Papillary thyroid micro carcinoma (Black Ink). Oncotarget 9(49): 29275-29283.

16. Trapanese E, Angrisani B, Angrisani A, D'Arco E, Agrusta M, et al. (2019) "Black Ink" Sonographic Pattern as a Predictor for Invasive Papillary Thyroid Microcarcinoma. JAMMR 30(1): 1-13.