

Editorial Forward

Highlights of Thyroid Disorders

Journal of Basic & Clinical Medicine 2013, 2(1):20

Thyroid gland synthesizes and secretes calcitonin (calcium lowering hormone), thyroxine (T4) and triiodothyronine (T3), which controls cellular metabolism and body development. Although human thyroid is a relatively small organ with an average weight of about 15 to 20 grams, it serves as one of the hot topics in medical research. Literature search in the PubMed has extracted more than 160,000 publications associated with thyroid. This issue of the Journal of Basic and Clinical Medicine presents four papers from the Japanese scientists who are focusing on their research on thyroid disorders.

In the last few decades, the diagnostic frequency of thyroid carcinomas, especially the small papillary carcinoma, has increased dramatically in many countries including USA and Japan. Change of the approaches in thyroid nodule diagnosis to ultrasound and ultrasound-guided fine needle aspiration cytology may partially contribute to the increased frequency. Dr. Kakudo et al. reviewed the recent publications on this topic and highlighted the almost always benign nature of small papillary carcinoma. They further proposed that small papillary carcinoma should be classified into the borderline category rather than the category of “true” carcinoma in the classification of thyroid tumors.

The thyroid gland develops from the median anlage and the two lateral anlagen. The latter is thought to give rise to the C cells (calcitonin-producing cells) and the solid cell nests (SCN) in thyroid. Dr. Nakamura et al. reviewed the pathophysiology and clinical importance of procalcitonin, a precursor of calcitonin, with particular emphasis on its role in inflammation. In the sepsis and other inflammatory diseases, proinflammatory mediators induce expression of calcitonin in the non-neuroendocrine cells, which, in contrast to the thyroid C cells, lack secretory mechanisms, thus the unprocessed procalcitonin is released in a constitutive manner. Serum procalcitonin is increased in patients with sepsis and those with systemic inflammation, and its level is correlated with the mortality and severity of illness. In this respect, procalcitonin may serve as an important biomarker of sepsis.

Dr. Wakasa et al. examined the thyroid gland of a patient with Hashimoto’s disease and found increased number of immature follicular cells in the gland. Interestingly, some of the immature cells were positive for p63 protein and exhibited some similarity to the SCN, suggesting that these cells may be the stem/progenitor cells of thyroid. These findings may provide a good explanation about why atypical follicular cells with

questionable papillary thyroid carcinoma-type nuclear features often appear in Hashimoto’s disease and why miss-interpretation may be made in cytological diagnosis.

Dr. Igarashi et al. reported an extremely rare case of malignant granular cell tumor of the thyroid. Granular cell tumor is usually benign and mainly occurs in the head and neck region, but rarely originates from the thyroid. In this case of the malignant granular cell tumor of the thyroid, the authors demonstrated the evidence of invasive growth of the tumor into the capsule and trachea. The authors claimed that this is the first report of malignant granular cell tumor originated from the thyroid gland. The editor wishes to thank all authors for their priceless contributions.

Kennichi Kakudo, MD, PhD
Professor Emeritus, Wakayama Medical University
Visiting Professor, Shandong University School of Medicine
Visiting Professor, Kinki University School of Medicine

Correspondence author: Kennichi Kakudo, Department of Medical Technology, Faculty of Health Sciences, Kobe-Tokiwa University, Kobe, Japan, Tel: +81-78-611-1821; Fax: +81-78-643-4361
E-mail address: k-kakudo@kobe-tokiwa.ac.jp