中文題目：甲狀腺亢進導致全血球低下-個案報告

英文題目：Hyperthyrodism induced pancytopenia – Case report

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Introduction

The most common autoimmune thyroiditis complicated with hyperthyroidism in Taiwan is Graves' disease. Diffuse hypervascular goiter, ophthalmopathy, pretibial myxedema, and hyperthyroidism-related conditions are general symptoms and signs of Graves' disease. Thyrotropin-receptor antibody (TSH-R Ab) stimulation with the thyroid gland causes Graves' disease. Graves' disease is complicated with hematological abnormalities, such as leukopenia, anemia, and thrombocytopenia. But pancytopenia caused by Graves' disease is rare. Hence, we reported a case that had Graves' disease concurrent pancytopenia.

Case Presentation

This 36-year-old woman has a history of asthma. She had ever received an appendectomy for acute appendicitis and bilateral nasal polyps excision. This time, she was admitted to our hospital because she experienced dyspnea on exertion for one month. The other associated symptoms/signs included chest tightness, palpitation, hand tremor, dizziness, and diarrhea.

The physical examination showed 1 degree lower leg edema without other findings. The laboratory test revealed pancytopenia (white-cell count [WBC]: 2970ulL) , Hemoglobin[Hb]:9.9 g/dl), Platelet count[PLT]: 61000/ul) , suppressed thyroid-stimulating hormone (TSH) level (< 0.005 uIU/ml) and hyperthyroidism. We arranged other laboratory tests to research the cause of hyperthyroidism and the last impression was Graves' disease because of elevated TSH-R Ab titer. We also checked autoimmune markers and elevated antinuclear antibody (ANA) and Anti-connective tissue disease (CTD) antibody were noted. Other test results are within normal range. The hematologist was consulted and suspected hyperthyroidism induced pancytopenia. We prescribed oral methimazole (15mg daily), bisoprolol (1.25mg daily), and intravenous hydrocortisone (300mg daily) for hyperthyroidism. Despite of persistent pancytopenia, she was discharged due to improved clinical conditions and followed up in the endocrine out-patient department . During follow-up, she recovered from pancytopenia after reaching euthyroid status.

Furthermore, she was referred to Rheumatologist because of elevated ANA and Anti-CTD antibodies. Sjogren's syndrome was impressed and which could also induce pancytopenia. But in this case, the complete blood count (CBC) recovered well before the treatment of Sjogren's syndrome. Although steroids might have a treatment effect on Sjogren's syndrome, the dose was very low in our patient. In addition, after we shifted steroid to oral form, the CBC still recovered well under treatment for hyperthyroidism. Thus, it is the evidence that Graves' disease contributed to a larger proportion of pancytopenia.

Discussion

Graves' disease complicated with pancytopenia is very rare in the world. According to clinical experience and literature review, hyperthyroidism affects single lineage hematologic abnormalities like leukopenia and thrombocytopenia rather than pancytopenia. There are several hypotheses, because the pathological mechanism is still unclear, including (1) thyroid hormones effect acting on hematopoiesis, (2) decrease lifespan in blood cells caused by autoimmunity, (3) toxicity on bone marrow stem cells caused by thyroid hormone. The period of hyperthyroidism induced pancytopenia is ranging from 2 weeks to several months. It resolves only when the thyroid function recovers to euthyroid status. Because of obvious resolution of pancytopenia after being under control of hyperthyroidism, we did not perform further bone marrow study.