

In Ig light chain amyloidosis (AL), the deposition of Ig light chains can cause organ dysfunction, and patients can have involvement of a range of organs including kidney (70%), liver (70%), heart (60%), peripheral nerves (20%), the tongue, skin, and the coagulation system (1). We describe a unique case of AL amyloidosis, which first presented with thyroid involvement.

CLINICAL CASE

A 78 year old female patient with hx of small lymphocytic lymphoma and normal thyroid function presented with an expanding symptomatic goiter and compressive symptoms (positive Pemberton sign) for which a total thyroidectomy was performed. Pathology showed Congo red-birefringent amyloid deposition. SPEP showed a small amount of M protein, with circulating monoclonal free lambda light chain on immunofixation. The free kappa lambda light chain ratio was low (0.04) with an elevated serum free lambda light chain (283.93). Mass spectrometry confirmed AL light chain amyloidosis - lambda type. A work up was initiated to assess other organ involvement. Echocardiogram showed mild thickening of left ventricle with a preserved EF and EKG showed low voltage in limb leads. Creatinine (1.05) was minimally elevated from baseline with minimal proteinuria (396 mg/24 hours). Alkaline phosphatase, APTT, and PT were normal. The patient described tongue enlargement and scalloping of the tongue from tooth impingement was seen. Biopsies of tongue and bone marrow also showed amyloidosis thereby securing the diagnosis of systemic amyloidosis, and chemotherapy was initiated.

CONCLUSION

This case illustrates the importance of considering amyloid goiter in the differential for a rapidly enlarging thyroid, even when there is no history of amyloidosis. Although extremely uncommon, a few case reports have described amyloid goiter. In our case, thyroid AL was the initial presentation of systemic amyloidosis. Because disease can be localized or systemic, work up should include an assessment for the presence of a monoclonal gammopathy and an assessment for amyloid mediated organ dysfunction. Tissue should be sent for amyloid typing – there are 35 different proteins known to form amyloid fibrils and prognosis and treatment depends on amyloid type (2). Typing using Liquid Chromatography-Tandem Mass Spectrometry, is the most sensitive and specific methodology, though, in experienced hands, typing by immune histochemistry is an option.

REFERENCES

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Thyroid

HPT-AXIS AND THYROID HORMONE ACTION

The Impact of Chronic Excess Iodine Intake in Adult Mice Behavior

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Iodine is one of the essential micronutrient which is required for the synthesis of thyroid hormones. Thus, iodine deficiency may result in the hypothyroidism. Iodine deficiency is one of the most common causes of preventable mental retardation and brain damage in the world. On the other hand, Japanese iodine intake exceeds that of most other countries, due to the significant seaweed consumption such as kelp. The Japanese Ministry of Health, Labour and Welfare estimates average iodine consumption at 1.2mg/day in Japan. In contrast, the recommended tolerable upper intake levels for adult is 1.1 mg / day in the United States. Generally, Japanese takes twenty times higher amount of iodine than Americans. Iodine tolerance among individual humans varies greatly, and the excess iodine can cause both hyper- and hypo- thyroidism. Furthermore, the effect of thyroid dysfunction due to iodine excess on brain function has not been clarified. In this study, we generated a mouse models for chronic iodine excess and evaluated its effect on brain development. C57BL/6 dams and their pups mice were treated with KIO₃ 37.4mg/l through drinking water. Behavioral experiments (novel object recognition test, novel object in location test, visual discrimination test, and three-room social behavior test) were conducted at 10-weeks-old. After the behavioral analysis, mice were sacrificed to collect trunk blood and tissues. Excess iodine intake caused hypertrophy of thyroid follicles regardless of the administered dose. However, there were no differences in thyroid hormone status among groups. Thyroid hormone responsive genes in the hippocampus were also not affected in experiment group. In the behavioral analysis, female mice showed an increase in learning ability. In summary, although the chronic overdose of iodine does not affect thyroid hormone levels, it may affect cognitive learning function. The gender difference in the consequence was also observed. These results indicate that the chronic iodine excess may cause various changes, although the body is tolerable with excess iodine.

Thyroid

THYROID NEOPLASIA AND CANCER

Assessment of Quality of Life in Persons with Thyroid Cancer and Thyroid Nodules: A Single Center Experience

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INTRODUCTION: Despite an excellent prognosis and survival rate, quality of life (QOL) in thyroid cancer is lower than expected. QOL in thyroid cancer survivors is similar