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Cerebellar ataxia associated with Hashimotos Thyroiditis totally responsive to steroid therapy

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Abstract

44 years old female known case of hypothyroidism in euthyroid state presented with features suggestive of cerebellar ataxia. As her serum Anti-TPO antibodies were high, she was suspected to have Hashimotos thyroiditis, few of such patients develop central nervous system complications. We report rare case of cerebellar ataxia in hashimotos thyroiditis responsive to steroid therapy.

Introduction

Hypothyroidism is common medical condition in clinical practice.Along with common systemic symptoms like weight gain, cold intolerance,constipation,dry skin,hoarsness of voice majority have variety of central and peripheral nervous system manifestations. Most of symptoms are relieved by thyroid harmone therapy, few may develop insidious onset central nervous system complication inspite of euthyroid state. Here we present case of Hashimoto thyroiditis developing cerebellar ataxia responsive to steroid therapy

Case Report

44 years old female known case of hypothyroidism on regular thyroid harmone therapy presented with history of difficulty in walking due to instability of gait since 6weeks (From 9/09/16) which was acute onset and slowly progressive. It was associated with altered speech. There was no history of headache, vomiting, convulsion, altered sensorium, weakness of extrimities, head injury, drug abuse, fever.

On clinical examination her vital parameters were normal. Neurological examination showed-

- Higher Functions- Staccato speech (cerebellar dysarthria)
- Cranial nerves- Normal
- Motor and Sensory systems –Normal
- Cerebellar signs-

1. Dysmetria on finger nose and heel to knee test
2. Dysdiadokokinesia on alternate supination and pronation of forearm
3. Pendular knee jerk
4. Wide base ataxic gait with tendency to fall on bothsides
5. No nystagmus and fundus normal

Investigations

1. Hemogram- mild anemia
2. Blood sugar - mg%
3. Serum Electrolytes and renal function- normal
4. Thyroid stimulating hormone(TSH) – 2.6u IU/ml

5. Serum ANTI-THYROID PEROXIDASE ANTIBODIES (anti-TPO antibody)-1202.80 U/mL high (reference: < 60U/mL negative)
6. Serum creatine kinase(CPK) 61 U/L (Normal range :26-192 U/L)
7. Serum GLUTAMIC ACID DECARBOXYLASE IGG Antibodies- 25.6 U/mL (reference negative: < 30 U/mL)
8. MRI brain done twice (19/09/16 and 15/10/16) – Normal
9. Cerebrospinal fluid (CSF) – Normal

She was started on azathioprine and prednisolone for six weeks and was completely symptom free after 6-8 weeks.

Discussion

Hypothyroidism can cause acute onset ataxia(1,2). Viral encephalitis , cerebrovascular accidents and drugs are other causes of acute onset ataxia. Subacute cerebellar ataxia in adults can be due to posterior fossa mass lesions, Hiv infection.

Hypothyroidism is identified cause of gait ataxia(2), thyroid harmone replacement therapy reverses cerebellar symptoms in most patients(3) which suggest cerebellar dysfunction was endocrine (Metabolic and Physiological effect of harmone)mediated(3,4,5,6).In few patients cerebellar dysfunction persist and progress inspite of bringing them in euthyroid state with harmone therapy(2,3,4,7,8,9).

Cerebellar ataxia associated with autoimmune thyroiditis in whom ataxia symptoms progressed is reported by Selim and Drachman(10). They stated two separate mechanisms for cerebellar dysfunction in hypothyroidism. If hypothyroidism is not associated with autoimmunity cerebellar dysfunction is due to endocrine disorder and reversed by by thyroid harmone replacement therapy.In autoimmune thyroiditis cerebellar dysfunction dosent reverse with thyroid replacement therapy and is autoimmune mediated. Majority of patients with with autoimmune thyroiditis (Hashimoto thyroiditis) donot develop cerebellar dysfunction, 20 to 30% patients may develop ataxia if treated inadequately(8,11).

Our patient was diagnosed to have hypothyroidism in 2009 and was in euthyroid state with 25 mCg of Eltroxin. She developed cerebellar ataxia and foun to have hashimotos thyroiditis. She was put on immunosupperesent as azathioprin and predenesolon to which she responded well.

Steroid responsive encephalopathy associated with autoimmune(Hashimoto) thyroiditis(SREAT) has been demonstrated by cCastillo P et.al(12) and Mahmud F et.al(13).

Conclusion

If patient of hypothyroidism inspite of hormonal replacement therapy develops cerebellar ataxia should be investigated for autoimmune/hashimoto thyroiditis. Hashimoto thyroiditis is associated with steroid responsive encephalopathy. This case report will make aware about neurologic dysfunction such as cerebellar ataxia in hashimoto thyroiditis which causes significant disability.

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