



HYPOTHYROIDISM PRESENTING AS PSYCHOSIS - A CASE REPORT

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Abstract : Hypothyroidism is an important and potentially reversible cause of organic psychosis. It is important to diagnose it early because in many occasions, thyroxine supplementation alone helps in relief or cure of psychotic symptoms. Others need supplementation of anti-psychotics to facilitate the recovery. A case of hypothyroidism that presented as psychosis and improved with thyroxine supplementation alone is discussed.

Keyword : hypothyroidism, organic psychosis, thyroxine supplementation.

INTRODUCTION

Hypothyroidism is a clinical syndrome that results from deficiency of thyroid hormone. The clinical presentation of hypothyroidism is diverse and complicated. Hypothyroidism may present with multiple physical as well as psychiatric symptoms. The symptoms of hypothyroidism include cold intolerance, fatigue, constipation, dry skin, menstrual irregularities, etc. The clinical signs of hypothyroidism include hoarse voice, facial puffiness, non-pitting edema, bradycardia, delayed relaxation phase of deep tendon reflexes etc. Depression is the most common psychiatric co-morbidity with hypothyroidism. About 40% of clinical hypothyroid patients have symptoms of depression.⁷ In turn about 50% of refractory depression patients have subclinical hypothyroidism.¹³ About 5% to 15% of myxedema patients may experience some degree of psychosis. This was described as 'myxedema madness' by Asher in 1949.¹ Few patients may manifest other affective and cognitive disorders. Early diagnosis and thyroxine supplementation will produce gratifying improvement of both physical as well as psychiatric symptoms.⁷ Significance of clinical presentation of this case emphasizes the importance of evaluation of thyroid function as a routine in psychosis which in turn helps the suffering individuals for a complete remission or cure.

CASE REPORT:

A 30 year old married female with bad obstetric history, presented with complaints of sleep disturbances, suspiciousness, hearing voices, muttering to self and poor self-care for 3 months duration. She had complaints of slowness of activities, hoarseness of voice, constipation, cold intolerance, menstrual irregularities and weight gain for the past 5 years. There was history of recurrent first trimester abortions and one still birth in the past 4 years. There was no significant past history or family history of psychiatric illness. On examination the patient had facial puffiness, dry skin,

non-pitting type of pedal edema and delayed relaxation phase of deep tendon reflexes.



BEFORE STARTING THYROXINE



On mental status examination the patient was communicating in a hoarse voice. She was conscious and oriented to time, place and person. Her psychomotor activity was slow. She had delusion of persecution, delusion of reference and auditory hallucinations (voices giving running commentary and discussing among themselves). Higher mental functions were normal. Insight was absent. In Positive and Negative Syndrome Scale, she scored 24 on positive scale 37 on negative scale and 49 on general psychopathology scale. Clinical findings of the patient indicated that she was suffering from Psychosis; fit enough to make a diagnosis of Paranoid Schizophrenia as per ICD-10 criteria. She was admitted and investigated.

Complete hemogram suggested normochromic normocytic anemia. Her renal function tests, liver function tests and lipid profile were normal. Serum sodium was 141 mEq/L and Potassium was 4.0 mEq/L. Thyroid function test revealed the following;

T3 - 0.23ng/ml (ref- 0.87-1.78ng/ml)

T4 - 0.17 g/dl (ref - 6.09 – 12.23 g/dl)

TSH - more than 100.0 IU/ml (ref - 0.34 – 5.6 IU/ml)
 Anti-nuclear antibodies- 2.9 U/ml (ref - < 10 –negative; > 10-positive) Anti-microsomal antibodies – 21.2 IU/ml (ref - < 40 IU/ml – normal) USG thyroïd showed features suggestive of thyroiditis and CT Brain was normal. The patient was promptly diagnosed as a case of hypothyroidism. Patient was treated only with T. Thyroxine 100 g in the morning before food. No anti-psychotics were prescribed for the patient. After 2 weeks The patient's physical symptoms like facial puffiness, non-pitting pedal edema and dryness of skin subsided after treatment. Her psychomotor activity improved. Her delusions and hallucinations also subsided. When Positive and Negative Syndrome Scale was re-administered she scored 11 on positive scale, 22 on negative scale and 24 on general psychopathology. She is continuing on T. Thyroxine 100g once daily and doing well with it.

AFTER



AFTER STARTING THYROXINE



DISCUSSION:

The prevalence of clinical hypothyroidism is about 2% in women and less than 0.1% in men. Subclinical hypothyroidism is prevalent in about 7.5% of women and 3% in men.⁶ Thyroid dysfunction are associated with a variety of neuropsychiatric sequelae. It can be a cause of psychiatric symptoms, complicate the management of the illness or it may result as a consequence of psychiatric treatment. Hypothyroidism may present as psychiatric illness which is often misdiagnosed as functional and mismanaged.⁷ Hence routine screening for thyroid dysfunction if any in a case of psychosis is beneficial. The psychological disturbances associated with hypothyroidism were first recognized in the Committee on Myxedema of the Clinical Society of London. Hypothyroidism was first reported as being associated with psychosis in 1888.⁷ The term "myxedema madness" was coined by Richard Asher in 1949.¹ Lassitude and depression are the typical psychological symptoms in hypothyroidism. Hypothyroidism is also considered as a potential cause of psychosis. The prevalence of psychosis in hypothyroidism is upto 15%. The clinical presentation of psychosis in hypothyroidism is not uniform and is atypical. ⁸ The following mechanisms have been postulated in the pathogenesis of psychosis in hypothyroidism namely,

- 1) In a hypothyroid state there is increased exposure of thyroxine to T3 receptors which are found at high concentrations in the limbic system. This causes psychosis in some vulnerable patients,
- 2) There is increased striatal dopamine receptor concentration and sensitivity,
- 3) There is increased tyrosine hydroxylase activity in the brain which in turn increases dopamine production.⁹ Psychosis due to hypothyroidism presents with delusions, hallucinations, generalized agitation, disorientation and restlessness. Delusions

are paranoid or persecutory in nature and may have depressive content. Hallucinations are usually auditory.¹² The physical symptoms are followed by psychosis within few months or years. It can occur in patients with either clinical or subclinical hypothyroidism.¹⁰ Most patients of hypothyroidism presenting with psychotic symptoms improve with thyroid replacement therapy. The improvement may occur as early as 2 weeks to about 6 months.⁵ There have been case reports of improvement of psychotic features in hypothyroidism with oral triiodothyronine in 36-48 hours.⁴ Addition of atypical anti-psychotics at low dose can speed up the

resolution of symptoms.⁵ Longer is the myxedema, poorer the outcome as the impairment of mental function will become permanent. So, hypothyroidism has to be diagnosed at the earliest, in order to improve the long term prognosis of the patients.² Even though this patient presented with schizophrenia like features, history of recurrent first trimester abortions, slowness of activities, hoarseness of voice, weight gain, constipation, cold intolerance, and menstrual irregularities raised a suspicion of underlying organic etiology. Early diagnosis of hypothyroidism and prompt treatment with thyroxine helped this patient in improvement of her clinical status with a reduction in the physical and psychiatric symptoms in 2 weeks and she is continuing thyroxine.

CONCLUSION:

In patients presenting with psychosis the routine investigations should include thyroid assay also. Psychotic symptoms in hypothyroidism are responsive to thyroxine supplementation in most cases and the improvement is rapid. Adjuvant anti-psychotics can facilitate the process of recovery. Early diagnosis of hypothyroidism and prompt treatment improves the prognosis in these patients. Our patient is yet another supportive evidence for it.

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