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CASE REPORT

SCHMIDT'S SYNDROME

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ABSTRACT

Schmidt's syndrome is a rare disease which is a one of the types of autoimmune polyglandular autoimmune syndrome. In these polyglandular autoimmune syndrome autoimmunity with auto-antibodies directed against different endocrine organs suggest in the pathogenesis of the disease. In addition there is role of genetic and familial predisposition of the disease. Autoimmune thyroid disease in combination with Addison disease is the most common presentation. In addition Diabetes mellitus Hyperparathyroidism, Pernicious Anemia, Hypogonadism, Vitiligo, Chronic atrophic gastritis, Chronic autoimmune hepatitis, Alopecia, Myasthenia gravis, Rheumatoid arthritis, Sjögren's syndrome and Thrombocytic purpura may or may not be present. So in patients suffering from one endocrine hormone deficiency should be thoroughly looked for the deficiency of other hormones. We present a case of 23 year old man who present with symptoms of gastritis and was refractory to treatment and on further evaluation was diagnosed as a case of Schmidt syndrome.

KEY WORDS: Schmidt's Syndrome, Autoimmune Hypothyroid, Polyglandular.

INTRODUCTION

Schmidt's syndrome is one of the types of polyglandular autoimmune syndrome. These are uncommon diseases characterized by abnormal hormone production by more than one endocrine gland. Autoimmunity directed against more than one endocrine gland is considered the main pathological abnormality. Other organs apart from endocrine glands might be affected. These syndromes are further classified in to different types on the basis of the involvement of different endocrine glands:

- Autoimmune Polyendocrine Syndrome Type 1 (Autoimmune Polyendocrinopathy-Candidiasis-Ectodermal Dystrophy or Whitaker's syndrome)
- Autoimmune Polyendocrine Syndrome Type 2 (Schmidt's syndrome)[4]
- X-linked Polyendocrinopathy, Immunodeficiency and Diarrhea-syndrome, also called XLAAD (X-linked Autoimmunity and Allergic Dysregulation)

SCHMIDT'S SYNDROME is rare and usually presents in early adulthood with females affected three times more than men.3 It has been linked to the class II HLA haplotypes DR3 (DQB*0201) and DR4 (DQB1*0302).[7] Autoimmune thyroid disease in combination with Addison disease is the most common presentation.[1]

Diabetes mellitus in 20% of cases and rarely in addition to above symptoms hypogonadism, hyperparathyroidism, pernicious anemia and vitiligo is also present. Autoimmune thyroid disease can manifest in the form of hashimoto thyroiditis as well as Graves' disease but hashimoto thyroiditis is much more common as occurring in more than 90% cases of Schmidt's syndrome.

In addition to genetic predisposition there is also a role of autoimmunity behind the pathogenesis of the disease. The autoantibodies are considered to be the basis behind the destruction of these multiple endocrine organs.[2] Very few cases of Schmidt's syndrome have been reported and here we present a case of 23 year old man who present with symptoms of gastritis and was refractory to treatment and on further evaluation was diagnosed as a case of Schmidt syndrome

CASE

This case was seen between 8th of march 2013 to 22nd of march 2013. A 23 year old male presented to the medical outdoor of military hospital Rawalpindi in the second week of march 2013 with a history of repeated episodes of tiredness, lethargy, lassitude, drowsiness of one year duration. He also complained of vague abdominal pain, indigestion, and reflux symptoms for the same duration for which he was taking Tablet Omeprazole.

His symptoms had aggravated over the past few weeks and he was unable to perform his daily routine work. He also complained of constipation, decrease apatite, forgetfulness, cold intolerance, joint and muscle pains, headache, hair loss, dryness and itching of skin. He has been married for the last 2 years but is not able to conceive. Family history was positive for diabetes mellitus.

On examination a pale young man with dull expressionless face and periorbital puffiness was seen (Figure 2). Vitals were normal but ankle reflex was delayed. Dry rough skin was seen all over the body especially on arms and legs. A midline neck swelling which moves with swallowing was seen. Swelling was 5*6cm in dimension with smooth margins and surface. Non pitting bilateral pedal edema was seen. He was admitted in the hospital for evaluation and on laboratory investigations it was found that his T3 (0.6nmol/l) and T4 (3.5pmol/l) levels were low and TSH (75 IU/L) levels are high. Antithyroid peroxidase antibodies were positive. Serum cholesterol (6.5mmol/l) was increased as well as serum ALT (266U/l) levels.

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Figure 1. Dryness of Skin

Figure 2. Periorbital Puffiness

On basis of physical examination and laboratory investigation he was diagnosed as a case of hypothyroidism and was prescribed thyroxine and was planned for discharge when hyper pigmented patches were noticed on his face and palate and on examination postural hypotension with drop of blood pressure of 20mmHg was noted on standing. On suspicion of co existent adrenal hormone deficiency short synacthen test and parathyroid hormone assay were performed. Although parathyroid hormone levels were normal but short synacthen test showed inadequate response which indicated towards addison disease. On the basis of coexistent autoimmune thyroid disease and addison disease patient was diagnosed as a case of Schmidt syndrome.

Other autoimmune investigations were also carried out which showed anti-nuclear antibodies (positive), low compliment c4 but RA factor, smooth muscle and liver kidney microsomal antibodies were negative. He was prescribed tablet deltacorticol 10mg in the morning and 5mg in the evening and tablets thyroxine 50ug 2 tablets twice daily. He was discharged on the above mentioned maintenance therapy

DISCUSSION

Patient in the case report reported with autoimmune thyroid failure and addisons disease and was diagnosed as a case of Type II polyendocrinopathy also known as Schmidt's syndrome. Schmidt's syndrome is a rare medical diagnosis with a prevalence of 1.4-2.0 per 100,000 population.1 But is the most common of all polyglandular syndromes which is heterogeneous in origin.[5] At least 2 out of following 3 are required for the confirmation of diagno-sis of Schmidt syndrome; Addison's Disease; Autoimmune Thyroid Disease or Diabetes Mellitus (Type 1).

The most common clinical combination is Hashimoto thyroiditis and Addisons disease (as seen in this patient). Different conditions which are seen associated with Schmidt's syndrome are autoimmune adrenal insufficiency (100%) autoimmune thyroid disease (69 to 82 %) Type 1 autoimmune diabetes mellitus (30 to 52%) vitiligo (4.5 to 11%) chronic atrophic gastritis, with or without pernicious anemia (4.5 to 11%) Hypergonadotropic hypogonadism (4 to 9%) Chronic autoimmune hepatitis (4%) Alopecia 1 to 4%) Myasthenia gravis (<1%).[6]

The basis of pathology of Schmidt's syndrome is autoimmune reaction against adrenal gland and other endocrine tissues. Usually, one glandular disorder develops before symptoms of the second disorder emerge. The symptoms of the glandular disorders can vary in their severity with one disorder becoming much more prominent. Probability of having other hormone deficiencies increases in patient having an existing hormone deficiency. So it is a general practice that in patients who are diagnosed as having one endocrine hormone deficiency should be thoroughly looked for the deficiency of other hormones.

Adrenal insufficiency is characterized by appetite & weight loss, nausea, vomiting, diarrhea, abdominal pain, orthostatic hypotension, irritability, hyper pigmentation ,salt craving ,inability hyponatremia , hypoglycemia, numbness of extremities due to excess potassium , decreased attention span and tetany.

Hypothyroidism is associated with fatigue, weight gain, arthralgia, sleep disturbances, depression, cold intolerance, muscle stiffness, psychosis, myxedema, infertility, periorbital puffiness, dry skin, dry hair, constipation, delayed relaxation of tendon reflexes, goiter, and constipation.

Chronic atrophic gastritis occurs in 4.5 to 11 % of patients. It presents as abdominal pain usually in upper central abdominal. It is usually vague, aching, burning, and sore. Pain may occur anywhere from the upper left portion of the abdomen around to the back. Other symptoms include nausea, vomiting, early satiety, loss of appetite, belching, weight loss.

In Schmidt's syndrome patients may also present with primary biliary cirrhosis, pernicious anemia, seronegative arthritis, coeliac disease, myasthenia gravis, alopecia, pure red cell aplasia or immunoglobulin A deficiency (which is common in people with celiac disease).
Diagnosis of schmidt's can also be confirmed with the help of immunological blood tests that are positive for adrenal antibodies as well as characteristic autoantibodies in a patient with clinical manifestations of either autoimmune thyroid, gonadal failure or diabetes.

Management includes treatment of the component disease as per protocol but the main challenge is to screen the patient for other manifestations for example if a patient has Type 2 polyendocrinopathy syndrome but has not yet developed diabetes regular blood test should be carried out to diagnose diabetes well in time . Experiments on immunosuppressive therapy are underway currently.

In short diagnosis of these polyendocrine syndromes should be kept in mind while treating the cases of isolated hormone deficiencies. It is possible that these syndromes could be much more prevalent especially in population who are suffering from one endocrine disease pathology and judicious evaluation can lead to the identification of more such cases.

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