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Case Report

Acute Kidney Injury Complicating Schmidt's Syndrome

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Abstract

We present a case of a 68 old woman who was referred to us due to acute kidney injury. Recent history of her illness revealed the presence of thyroidopathy, hyperpigmentation, hypotensive episodes and various other general signs and symptoms. Blood tests showed hyperkalemia, hyponatremia, elevated creatinine and inadequate response to cosicotropine stimulation test. All the above lead to the diagnosis of Polyglandular Autoimmune Syndrome type II, and more specifically, of Schmidt's syndrome (Addison's disease and hypothyroidism). After proper treatment, the patient's health and general condition has shown impressive improvement. Adrenal insufficiency presents with symptoms that are not specific, and may lead to diagnostic uncertainty. Once the diagnosis is established, it is imperative that adequate treatment starts without delay.

Keywords: Schmidt's syndrome; Addison's disease; Polyglandular autoimmune syndrome type II hyperkalemia, Hypothyroidism

Case Report

A 68 years old woman was referred to the emergency department by her family physician, due to acute kidney injury. She had a history of hypothyroidism treated with Levothyroxine sodium (88μg per day) for the past 7 years. The patient noticed hypepigmentation, which appeared almost 2 years ago, initially in body areas exposed to the sun (face, neck, arms and legs) and during the last six months it began to expand in other areas ,such as palmar creases ,nails ,and in the oral mucosa (buccal mucosa, gums, tongue and lips), (Figure 1). Nine months prior to her referral, she started complaining of various symptoms, among which, weakness, fatigue, alopecia (hair loss), constipation, and loss of appetite resulting in a weight loss of about 12kg within a period of eight months. She, frequently experienced symptoms and signs of orthostatic hypotension, with a systolic blood pressure of 80 -100mmHg. Furthermore, the patient began having altered mental status with behavioral changes like apathy, indifference and sleepiness. Due to these mental disorders and an episode of confusion (disorientation in time and place), she was referred to a psychiatrist and was diagnosed with depression. The patient also complained of muscle and joint pain of the upper and lower limbs and abdominal muscles for the past 2 months. Additionally, 10 days ago, her doctor, noticed a relapse of the existing hypothyroidism and suggested an increase of the Levothyroxine sodium to 100μg per day and a repeat blood test. Except from the relapse of the hypothyroidism the patient's blood tests also revealed acute kidney injury and the patient was referred to us and admitted to our hospital. At the time of presentation, the patient's blood pressure was 130/60mmHg, while sitting, with postural drop (blood pressure: 80/40mmHg, while standing). Her skin was hyperpigmentated. During clinical examination she had abdominal and gastrocnemius muscle spasms. Laboratory tests revealed: Hct: 39, 6%, Hgb: 13,2gr/dl, WBC: 11700K/μL, serum urea: 70mg/dl, serum creatinine: 1.7mg/dl, mild hyponatremia (130mEq/l), hyperkalemia K: 6mEq/L, Ca: 10.9mg/dL, serum albumin: 4.5g/dL, serum glucose 113mg/dL, TSH levels: 13.38 μIU/mL. The renal ultrasound showed normal findings. Based on the patient's medical history, physical examination and laboratory tests the diagnosis of adrenal insufficiency was considered. Further laboratory tests of early morning adrenocorticotropic hormone and cortisol levels were obtained. ACTH levels were elevated (959μg/dl) and cortisol levels were only 1,23μg/dl. A cosyntropin stimulation test was performed. Serum cortisol levels failed to raise 1 hour after the administration of 250μg of cosyntropin (serum cortisol levels post administration: 1 μg/dl). The ACTH serum levels and the cosyntropin stimulation test established the diagnosis of adrenal insufficiency (Addison's disease). These findings combined with the patient's medical history of hypothyroidism confirmed our suspicion of adrenal insufficiency possibly due to Polyglandular Autoimmune Syndrome type II, and more specifically, a case of Schmidt's syndrome (Addison's disease and hypothyroidism). Intravenous fluids and glucocorticoid (hydrocortisone 20mg S1x3/24h) treatment were administrated appropriately, followed by mineralcorticoids (Fludrocortisone 100mcg S: 1x1). The patient's symptoms and laboratory test results improved and were released from hospital four days later. Within a month hyperpigmentation was reduced drastically, and three months later it was almost completely gone.

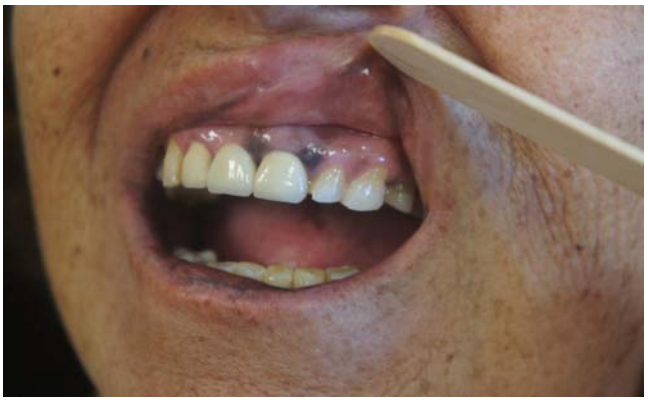

Figure 1: Hypepigmentation in the oral mucosa (buccal mucosa, gums, tongue and lips).

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Discussion

Addison' disease is characterized by primary adrenal insufficiency. In Polyglandular Autoimmune Syndrome type II (PAS II) or Schmidt's syndrome, Addison's disease is combined with hypothyroidism. The incidence of Addison's disease is estimated at 5 per 100,000 in the United States [1] and 11 per 100,000 in Europe [2]. The prevalence of PAS II is 1.4 to 2.0 per 100,000 [3]. The causes of Addison's disease may vary. Adrenal insufficiency presents with symptoms that are not specific, and may lead to diagnostic uncertainty [4]. Symptoms such as fatigue, weakness, loss of appetite, weight loss, abdominal pain, and constipation may persist for months prior to diagnosis. These symptoms are common in a plethora of other medical conditions [5]; as a result early diagnosis of Addison's disease is cumbersome. Hyponatremia in the presence of hyperkalemia and postural hypotension should always raise awareness of possible adrenal insufficiency and its related disorders. As soon as adrenal insufficiency is suspected, it is of paramount importance to determine early morning serum cortisol levels, followed by a response to cosyntropin test. Replacement therapy should start promptly after the confirmation of diagnosis and involves the lifelong administration of glucocorticoids and mineralcorticoids [6]. In case of Schmidt's syndrome, thyroid replacement therapy should not be administered before glucocorticoid administration. Thyroxine increases corticosteroid metabolism which may aggravate hypotension and adrenal crisis [7]. Adrenal insufficiency presents with symptoms that are not specific, and may lead to diagnostic uncertainty. Symptoms such as fatigue, weakness, loss of appetite, weight loss, abdominal pain, and constipation may persist for months prior to diagnosis. These symptoms are common in a plethora of other medical conditions, and as a result early diagnosis of Addison's disease is cumbersome. Once the diagnosis is established, it is imperative that adequate treatment starts without delay, since it is associated with significant improvement of patient's general status.

References

1. Falorni A, Laureti S, Santeusanio F. Autoantibodies in autoimmune polyendocrine syndrome type II. Endocrinol Metab Clin North Am. 2002; 31: 369-389.
2. Laureti S, Vecchi L, Santeusanio F, Falorni A. Is the prevalence of Addison's disease underestimated? J Clin Endocrinol Metab. 1999; 84: 1762.
3. Betterle C, Dal PC, Mantero F, Zanchetta R. Autoimmune adrenal insufficiency and autoimmune polyendocrine syndromes: autoantibodies, autoantigens, and their applicability in diagnosis and disease prediction. Endocr Rev. 2002; 23: 327-364.
4. Ten S, New M, Maclaren N. Clinical review 130: Addison's disease 2001. J Clin Endocrinol Metab. 2001; 86: 2909-2922.
5. Zagkotsis GD, Malindretos PM, Markou MP, Koutroumbas GC, Makri PT, Kapsalas DV, et al. Adrenal insufficiency as the presenting feature in a patient with lung cancer. J Emerg Med. 2014; 46: e91-92.
6. Majeroni BA, Patel P. Autoimmune polyglandular syndrome, type II. Am Fam Physician. 2007; 75: 667-670.
7. Graves L, Klein RM, Walling AD. Addisonian crisis precipitated by thyroxine therapy: a complication of type 2 autoimmune polyglandular syndrome. South J Med. 2003; 96: 824-827.

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