

LETTERS TO EDITOR

HYPOTHYROIDISM-ASSOCIATED RHABDOMYOLYSIS

Sir,

Although muscle involvement is common in hypothyroidism, rhabdomyolysis due to hypothyroidism is rare and only a few cases have been reported.^[1-5] We describe a patient with rhabdomyolysis due to hypothyroidism.

A 39-year-old male presented to our hospital with complaints of generalized weakness, giddiness, generalized swelling of the body, insomnia and restlessness. The patient had generalized weakness and giddiness of 2 months duration for which he consulted a local general practitioner who diagnosed him as having eosinophilia and started a course of diethylcarbamazine (DEC). As the symptoms worsened, he consulted another physician who started him on alprazolam along with the DEC regimen. His symptoms did not improve and he developed insomnia, restlessness and vivid dreams for which he came to the present hospital. On further questioning,

the patient also reported tingling and numbness of the limbs since 1 month. There was no history of weight gain or muscle pain. He was a tailor by occupation and consumed alcohol occasionally. There was no family history of thyroid diseases and neuromuscular or autoimmune diseases. There was no pedal edema and the skin was normal in appearance. His bodyweight was 76 kg. There were generalized sluggish deep tendon reflexes. The nerve conduction test showed signs of bilateral carpal tunnel syndrome. Electrocardiography has shown borderline first-degree heart block. Laboratory investigations showed elevated TSH and low T3 and T4 values. The creatinine phosphokinase (CPK) level was also grossly elevated [Table 1]. Cardiac evaluation did not show any significant abnormality. The patient was diagnosed as having hypothyroidism associated with rhabdomyolysis. The patient was treated with thyroxine 150 µg daily along with multivitamin supplements. After 2 months of treatment, his symptoms and laboratory parameters (CPK, T3, T4 and TSH) became normal [Table 1].

Table 1: Laboratory parameters

<i>Parameters</i>	<i>Initial Values</i>	<i>After 2 months</i>	<i>Unit</i>	<i>Reference range</i>
Creatinine phosphokinase	972	224	U/L	35–186
Thyroid stimulating hormone	>100	0.922	µL U/mL	0.27–5.5
Free thyroxine	0.094		ng/dL	0.93–1.71
Triiodothyronine(T3)	0.195	1.28	ng/mL	0.62–2.02
Thyroxine (T4)	0.420	8.96	µg/dL	5.13–14.0
Creatinine	1.6	1.2	mg/dL	0.4–1.4
Urea	19		mg/dL	10–45
Post prandial blood sugar	93		mg/dL	100–150
Aspartate amino transferase	67		U/L	5–40
Alanine amino transferase	85		U/L	5–40
Total bilirubin	0.6		mg/dL	0.2–1.2
Hepatitis B antigen	Negative			
Urine myoglobin	Negative			
Peripheral smear	Normal			
Urine routine	Normal			
Platelets	2,20,000		Cells/mm ³	1,50,000–4,50,000

The present case describes a patient with rhabdomyolysis due to hypothyroidism. Other known causes of rhabdomyolysis include collagen diseases, intake of massive amounts of alcohol, vigorous exercise, trauma, infections, seizures, medications like statins and electrolyte imbalances. If severe, rhabdomyolysis may be life threatening, especially when it is complicated by multiple organ failure. Muscle involvement is common in hypothyroidism and its myopathy is usually manifest with delayed relaxation of tendon jerks, proximal muscle weakness, myalgia and cramps. But, rhabdomyolysis is quite rare. Only a few cases of rhabdomyolysis due to hypothyroidism have been reported.^[1-5] The present case describes a patient suffering from rhabdomyolysis due to hypothyroidism, with no other precipitating factor. Diagnosis of rhabdomyolysis was carried out based on muscle weakness, grossly elevated CPK and elevated serum creatinine.

The exact cause of rhabdomyolysis in hypothyroidism is unclear, but both impaired glycogenolysis and impaired mitochondrial oxidative metabolism may be responsible.^[4,5] Hypothyroidism should be considered as one of the causes of rhabdomyolysis. Rhabdomyolysis manifests with muscular symptoms and severely elevated serum levels of muscle enzymes. Thyroid hormone replacement therapy improves thyroid and renal functions and reverses rhabdomyolysis.

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