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Case Report

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Lumbosacral Plexopathy, Complicating Rhabdomyolysis in a 57-Year-Old Man, Presented with Sudden Weakness in Both Legs

A 57-year-old man presented with weakness in both legs upon awakening after drinking. Magnetic resonance imaging (MRI) of the lumbar spine did not reveal any intraspinal abnormalities but MRI of the pelvis revealed lesions with abnormal intensities with heterogeneous contrast enhancement in both gluteal muscles. Serum creatine phosphokinase was markedly elevated. A diagnosis of lumbosacral plexopathy, complicating rhabdomyolysis was made. With supportive care he recovered well but mild weakness of the right ankle remained at 6 month-follow-up. Pelvic MRI is a helpful diagnostic tool in localizing rhabdomyolysis. Lumbosacral plexopathy should be included in the differential diagnosis of the such cases, presenting with sudden weakness of legs.

KEY WORDS : Rhabdomyolysis · Lumbosacral plexopathy · Magentic resonance imaging · Leg weakness.

INTRODUCTION

Rhabdomyolysis, a syndrome of skeletal muscle breakdown with leakage of muscle contents, comprises of myalgia from acute muscle necrosis and compression palsies, leading to limb weakness[2]. Among multiple causes of rhabdomyolysis, alcoholism and drug abuse are well-known to play a role in most cases of rhabdomyolysis[2,3].

A significant elevation of serum creatine phosphokinase indicates the presence of rhabdomyolysis but determination of myoglobin in serum and urine is required for the early diagnosis of rhabdomyolysis[2,3]. Many cases of rhabdomyolysis have been identified, yet magnetic resonance imaging (MRI) findings have been infrequently reported.

We report a case of rhabdomyolysis, complicated by lumbosacral plexopathy, where MRI was helpful in the diagnosis and localization of rhabdomyolysis.

CASE REPORT

A 57 year-old male patient, known to be a chronic alcoholic, presented with weakness of both lower extremities and voiding difficulty upon awakening after drinking. On admission, he complained of a tingling sensation in his feet, both hips and gluteal regions and were painful on palpation and to passive movement. Neurological examination revealed complete weakness of both legs, and diminished pain and touch sensation in both L5 and S1 dermatomes without ankle jerks. MRI of the lumbar spine did not show intraspinal abnormalities. However, MRI

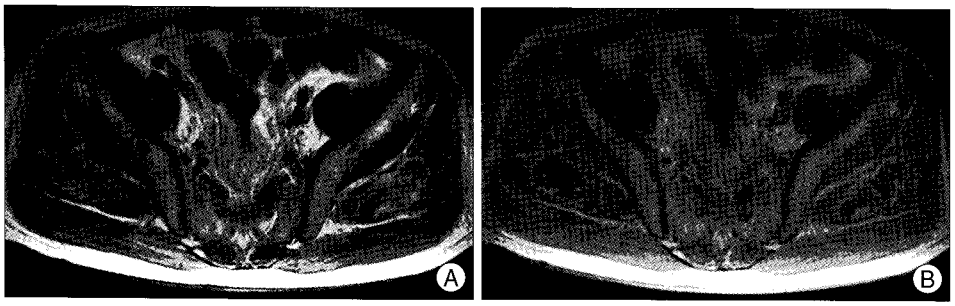

Fig. 1. Axial T2-weighted (A) and postcontrast T1-weighted (B) magnetic resonance imaging scans demonstrating hyperintense areas and rim enhancement around hypointense areas in both gluteal muscles, respectively.

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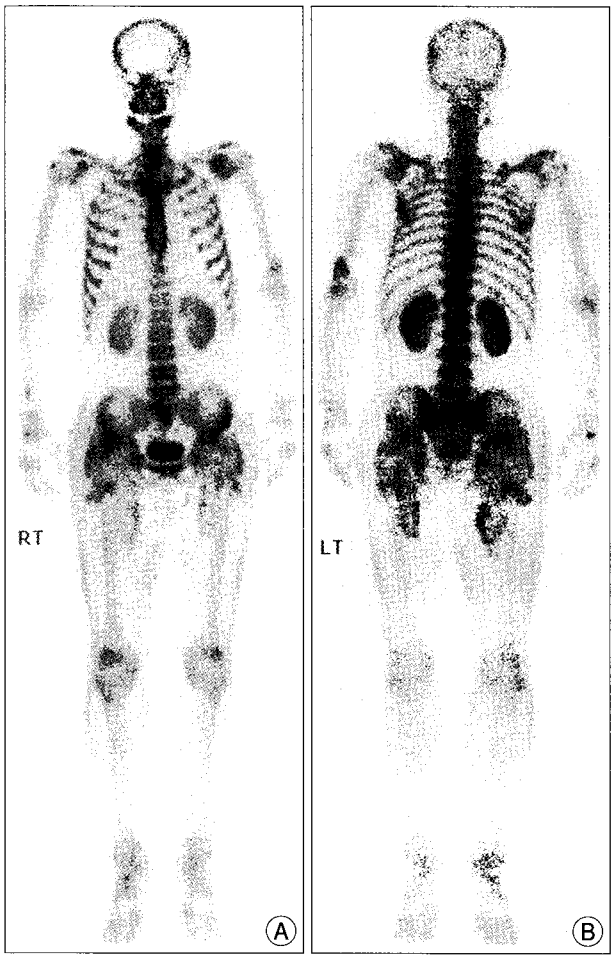

Fig. 2. Technetium 99 m hydroxydiphosphonate whole body bone scan revealing increased soft tissue uptake in both hip areas on anterior (A) and posterior (B) views.

of the pelvis on day 4 from onset revealed multiple irregular nodular and geographic lesions in both gluteus minimus and medius muscles, which were slightly hypointense in T1- and hyperintense in T2-weighted images, and showed heterogeneous contrast enhancement after intravenous administration of gadolinium (Fig. 1). Technetium-99 m hydroxydiphosphonate (Tc-99 m HDP) whole-body bone scintigraphy showed irregular increase in soft tissue uptake around both hip joints (Fig. 2). On laboratory studies, serum creatine phosphokinase (17,226 IU/L) and serum myoglobin (over 1,000 ng/ml) were markedly elevated. The white blood cell count was elevated to 12.040/uL but hemoglobin was normal. Electrolyte profile and blood urea nitrogen with creatinine were normal. Urine myoglobin was positive and 20-29 red blood cells were observed per high power field on urine microscopic examination with strong positive urine dipstick for blood. All other laboratory tests including cerebrospinal fluid analysis were normal. Nerve conduction studies of both lower extremities were normal and electromyographic studies did not show any abnormalities. He was diagnosed as rhabdomyolysis, associated with lumbosacral plexopathy. With supportive care, pain in both hip and gluteal regions, and voiding difficulty improved after 7 days. Serum creatinine phophokinase and myoglobin were decreased to 7081 IU/L and 170.97 ng/ml, respectively on 7th day after admission. His neurological function, with the exception of mild weakness of right ankle, returned to normal in 6 months.

DISCUSSION

Rhabdomyolysis is an acute disorder, characterized by muscular weakness, pain or tenderness, myoglobulinuria and elevation of serum enzymes of muscle origin. Most common causes of rhabdomyolysis are known to be alcohol, drug abuse, trauma, infection, excessive physical activity and heat-related illness[2,3]. Our patient was considered to have rhabdomyolysis, presumably associated with alcoholism and compressive palsies, complicating rhabdomyolysis.

In most cases of rhabdomyolyisis, recovery is complete in days to weeks but some patients may experience severe sequelae[5]. The complications of rhabdomyolysis include acute renal failure, metabolic derangement, disseminated intravascular coagulation and compression palsies such as compartment syndrome or peripheral neuropathy[2,3].

Rhabdomyolysis can usually be diagnosed, based on elevation of serum creatine kinase level. Tc-99 m HDP whole body bone scan could detect muscle injury as well and reveal increased soft tissue uptake in the corresponding areas[4,6]. Recently, MRI has been shown to be useful for diagnosis and localization of rhabdomyolysis, and is considered more sensitive than computed tomography or ultrasonography in detecting muscle abnormalities[1,6,7]. T2-weighted images are reported to show rhabdomyolysis lesions as abnormal hyperintensity areas but noncontrast T1-weighted images showed subtle hypointensity areas or failed to reveal the signal abnormalities[1,6,7]. However, findings of postcontrast T1-weighted MRI may be different according to the phase of rhabdomyolysis[1,7]. In this case, postcontrast T1-weighted MRI showed strong rim enhancement of hypointensity areas even in the acute phase.

CONCLUSION

MRI of the pelvis seems to be very helpful to diagnose and to localize rhabdomyolysis. Lumbosacral plexopathy, complicating rhabdomyolysis should be included in the differential diagnosis of cases, presenting with tingling sensation and sudden weakness of legs.

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