

Images in Nephrology
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Rhabdomyolysis caused by strenuous computer gaming

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Case

A 40-year-old man presented with decreased mental ability and acute renal failure. He had played computer games for 3 days without rest and proper oral intake before coming to our hospital. On admission, serum creatinine was 10.1 mg/dl. Urinalysis showed dysmorphic red blood cell (16–20/HPF) and proteinuria. Serum creatinine kinase was 13 840 U/l (normal range, 5–217) and serum myoglobin was 8621 ng/ml (normal range, 12–80). Other serological tests were all negative. Tc-99m MDP bone scintigraphy (Figure 1) showed mainly increased uptake on both shoulder and upper arms. Other minor increased uptake was noted on neck, inner thigh and leg muscle. These were relatively symmetrical findings. He was treated with intravenous hydration and forced diuresis; over the following several days, creatinine was 1.4 mg/dl and urinalysis was normalized.

Discussion

Rhabdomyolysis is a syndrome characterized by muscle necrosis and the release of intracellular muscle constituents into the circulation. Most commonly, the causes of rhabdomyolysis are trauma, postictal state, extraordinary physical exertion, etc [1]. In this case, the strenuous use of upper arm and other muscle in prolonged computer game contributed to rhabdomyolysis and renal failure. Acute renal failure is frequently complicated by rhabdomyolysis. The main targets of management are fluid resuscitation and forced alkaline diuresis [2]. If oliguria is persistent in renal failure, renal replacement therapy will be needed.

Conflict of interest statement. None declared.

References

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Fig. 1. Tc-99m MDP bone scintigraphy, showing multiple peripheral muscle uptake, mainly upper arm and shoulder.