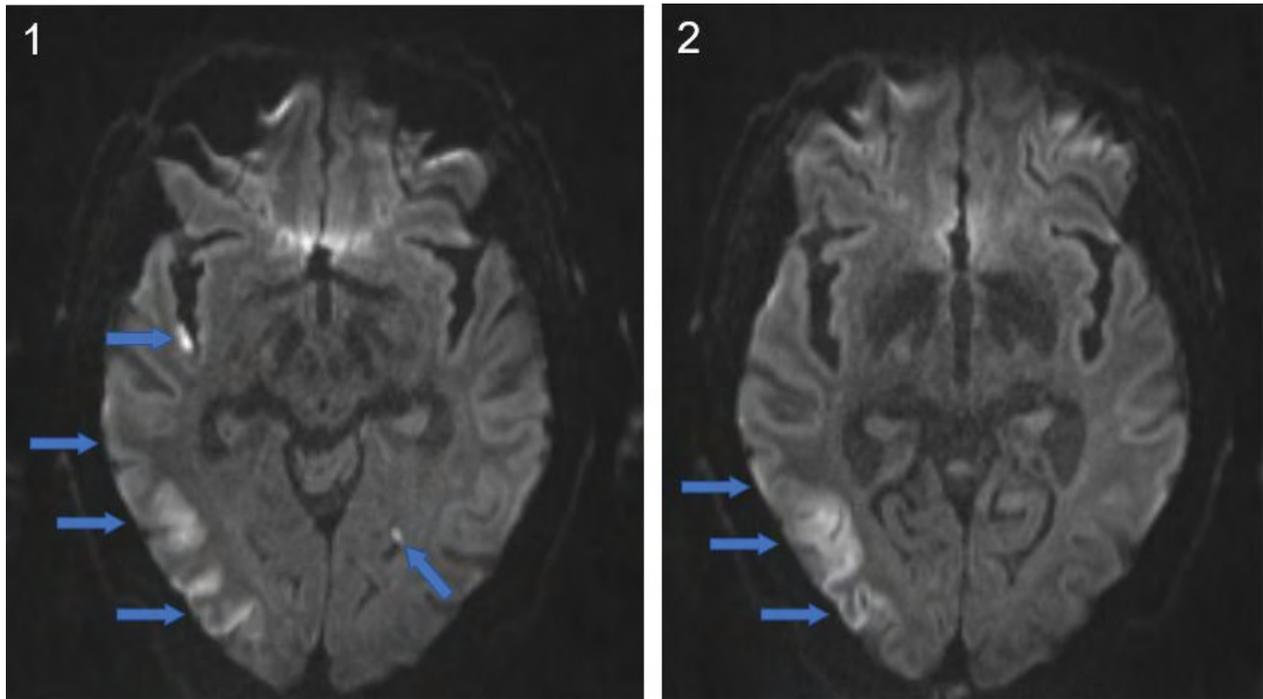


Case Report

Hypoglycemic Encephalopathy: A Neurologic Manifestation of Hypoglycemia

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Figures 1: Magnetic resonance imaging of the brain showed abnormal diffusion restriction involving the cerebral cortex in multiple locations (arrows).

Case Presentation

An 81-year-old man with insulin-treated type 2 diabetes who had been non-compliant with his insulin therapy was taken to the emergency department with altered consciousness of unknown duration. Emergency medical services were called when he was found unresponsive at home by his friend. Paramedics found him comatose and hypoglycemic on the scene with a blood glucose level (BGL) of 1.1 mmol/L. His BGL normalized following administration of intramuscular glucagon and intravenous dextrose. Despite this, he had no neurologic recovery. No toxic or metabolic causes of his altered conscious state were identified and blood gas analysis did not reveal any evidence of hypoxemia. Computed tomography scan of the brain was unremarkable. He was intubated and was transferred to the intensive care unit. Magnetic resonance imaging (MRI) revealed abnormal diffusion restriction involving the cerebral cortex in multiple locations (Figure 1), with the changes most confluent and pronounced in the right parieto-occipital cortex. These findings were consistent with hypoglycemic encephalopathy. He continued to have no neurologic improvement after 6 days of hospital admission. After discussion with the patient's family, he was transitioned to comfort care given his poor prognosis. He died on the ninth hospital day.

Hypoglycemic encephalopathy is a neurologic manifestation of hypoglycemia. The clinical course of this condition is variable, ranging from completely reversible neurologic deficits to irreversible coma [1,2]. Neuropathological studies have demonstrated that the cerebral cortex, hippocampus and basal ganglia are the commonly affected sites in severe hypoglycemia [2,3]. MRI findings in hypoglycemic encephalopathy include diffusion restriction at characteristic locations [2]. Poor prognostic factors in patients with hypoglycemic encephalopathy may include diffuse and extensive cortical involvement, prolonged and profound

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hypoglycemia, normal or higher body temperature, and a low lactic acid level during hypoglycemia [1,2].

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