Suxamethonium contraindicated in the Guillain-Barré syndrome

Suxamethonium induced hyperkalaemia has been described in a variety of disorders. Ferguson et al described four patients with chronic neuropathy who developed life-threatening arrhythmias following suxamethonium administration. The presumed cause was suxamethonium induced hyperkalaemia although this was not documented in their presentation. We have recently seen a patient with relapsing Guillain-Barré syndrome who developed severe ventricular arrhythmia secondary to a documented suxamethonium induced hyperkalaemia. The potential danger of the use of suxamethonium needs to be emphasised in the neurological literature.

A 51 year old man was admitted with a two week history of tingling in his hands and feet and progressive weakness in his arms and legs. These symptoms had begun one week after a flu like illness. Examination revealed a proximal muscle weakness with depressed deep tendon reflexes and a normal cranial nerve examination. Cerebrospinal fluid examination was normal but nerve conduction studies showed evidence of a demyelinating neuropathy. A diagnosis of Guillain-Barré syndrome was confirmed and he was treated with plasma exchange with significant improvement over the following ten days. He was discharged but was readmitted two months later with an exacerbation of his symptoms.

Examination revealed severe weakness in his arms and legs, absent deep tendon reflexes, bilateral mild facial weakness, mild dysphagia and dysarthria. Forced vital capacity was two liters. He was treated with nasogastric feeding and daily plasmapheresis without any improvement over the following ten days. On day 11 because of deteriorating pulmonary function, it was decided to electively ventilate him. Before ventilation, there was a sinus tachycardia of 126/min but no other evidence of autonomic dysfunction. The arterial partial pressure of oxygen was normal and he was given 100% oxygen for three minutes before the procedure. Anaesthesia was induced with thiopentone and he was then paralysed with suxamethonium.

Immediately after the suxamethonium was given and before intubation he developed a severe ventricular tachycardia followed by a cardiac arrest. Cardio-pulmonary resuscitation was