depolarising muscle relaxants were avoided and paralysis was induced with pancuronium. There were no difficulties with ventilation in this period and, although moderate hypothermia is known to potentiate all types of neuromuscular blockade,[3] the patient showed no abnormal requirements or sensitivity to the dose administered and was responding to commands at the end of the procedure. To avoid inducing myotonia we did not use halothane, which commonly produces postoperative shivering.

Another potential difficulty in paramyotonia congenita relates to the electrolyte shifts which may occur with haemodilution and cardiopulmonary bypass. In particular, hyperkalaemia may precipitate myotonia.[1] The primary muscle defect is thought to be related to increased sodium conductance in affected muscles. An infusion of 80 mmol (mEq) of potassium chloride in 500 ml 5% dextrose infused at 80 ml/h was able to prevent gross fluctuations in serum potassium concentrations in this patient.

Only minimal postoperative respiratory depression was seen, with a transient rise in arterial P_{CO_2}. The major postoperative difficulty encountered was the occurrence of brief episodes of hypotension and falling central venous pressures, which were not significantly affected by volume loading or by dopamine infusion. Although the aetiology of these haemodynamic changes is not definitely known, they were possibly related to sudden changes in peripheral resistance or venous capacitance or both. The attacks proved benign, though they did increase the duration of the patient's stay in the intensive care unit.

In summary, cardiopulmonary bypass using moderate hypothermia has been undertaken safely in a patient with paramyotonia congenita. Depolarising muscle relaxants and halothane were avoided, and complete rewarming on bypass was carefully carried out. The anticipated respiratory difficulties did not occur and postoperative recovery was complete.

References

[1] Thrush DC, Morris CT, Salmon MV. Paramyotonia congenita: a clinical, histochemical and pathological study. *Brain* 1972;**95**:537–45.

[2] Utley JR, Wachtel C, Cain RB, Spaw EA, Collins JC, Stephens DB. Effects of hypothermia, hemodilution, and pump oxygenation on organ water content, blood flow and oxygen delivery, and renal function. *Ann Thorac Surg* 1981;**31**:121–33.

[3] Thornton RJ, Blakeney C, Feldman SA. Summary presented to the Anaesthetic Research Group. The effect of hypothermia on neuromuscular conduction. *Br J Anaesth* 1976;**48**:264.

Correction

Dose-response comparison of ipratropium bromide from a metered-dose inhaler and by jet nebulisation

In the paper by SA Gomm and others (April, pp 297–301) we regret an error in line 3 of the last paragraph, where "< 45%" should be "> 45%."