Correspondence

An unusual case of hemolysis

To the Editor:

A 55-yr-old ASA I miner presented with chronic arthritis of the left hip with failed implant *in situ* and non-union of the fractured neck of the femur. He had undergone two previous surgeries performed elsewhere with no available documents. From the patient's account, they were uneventful and he did not require any transfusion of blood. He was admitted in our institution for a total hip replacement. Clinical examination was unremarkable except for the stiff and painful left hip. His preoperative investigations were normal with hemoglobin of 120 g·L⁻¹. Perioperative blood transfusion was anticipated and a blood sample for cross-match was sent. The blood bank technologist reported that the sample had hemolyzed. Another sample, sent on the day of surgery was also reported to have hemolyzed.

The surgery was postponed, until further tests were performed to rule out any underlying serious hematological condition that was causing the hemolysis of the samples.

The laboratory tests revealed a normal peripheral blood smear. The reticulocyte, total and differential leukocyte counts were normal. The bleeding time, prothrombin time, activated partial thromboplastin time; thrombin time and the D-dimer were within normal limits. The liver and renal function tests did not show any abnormality. These tests ruled out the common bleeding and clotting abnormalities. Another cross-match sample was sent in a similar reusable bottle, which did not exhibit any evidence of hemolysis. The patient underwent surgery, which was uneventful and did not warrant any transfusion.

Hemolysis of cross-match and other clotted blood samples commonly occurs in the presence of disseminated intravascular coagulation and drug-induced hemolysis. In many developing countries cross-match and other blood samples are collected in reusable bottles. A review of the case pointed towards the possibility of contamination of the reusable bottles in which the cross-match sample was collected, since two other incidents were reported in the hospital on the same day.

Contaminants such as detergent are likely to have been the cause in this case. The mechanism by which detergents cause hemolysis has been described.¹

Careful screening of reusable bottles and strict quality control measures could prevent this from occurring.

Nevertheless, this case highlights the need for vigilance and investigation into incidents when cross-match or other clotted blood samples undergo spontaneous hemolysis. This may indicate serious underlying condition, which would require appropriate perioperative blood component therapy² and modification of anesthetic technique.³

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A bizarre end-tidal carbon dioxide waveform

To the Editor:

A 37-yr-old woman was scheduled to undergo partial gastrectomy for gastric tumour. Anesthesia was induced using fentanyl, thiopental and succinylcholine and maintained with isoflurane, 50% oxygen in air, morphine and cisatracurium. Mechanical ventilation settings consisted of 10 mL·kg⁻¹ tidal volume, respiratory rate of 10, I: E ratio of 1:2 and fresh gas flow of 2 L. The ET_{CO}₂ waveform (Figure) was thought to be the patient starting to breathe and cisatracurium was administered. There was no change in the peak inspiratory pressure. Correct placement of the endotracheal tube (ETT) was again verified by listening to breath sounds and observing for bilateral chest movement. The ETT was suctioned to ensure there was no