A patient with polytrauma, hypothermia and cardiac arrest after delayed mountain rescue

With interest, we followed the case report by Ting and Brown[1] of a severely hypothermic patient with trauma treated with extracorporeal life support. We fully agree with the authors that extracorporeal life support should be taken into consideration in distinct cases of multiple trauma and severe hypothermia. We report a case of a hypothermic patient with polytrauma who arrived in cardiac arrest after a fall of 30 m in the mountains.[2]

Owing to bad weather, the helicopter emergency medical service team had reached the 59-year-old man four hours after the fall occurred. The patient had signs of cardiac instability and a Glasgow Coma Scale of 9/15. During transport to the level I trauma centre, he sustained cardiac arrest. On arrival, he was undergoing cardiopulmonary resuscitation, and had ventricular fibrillation, a core temperature of 25.3°C and a potassium level of 2.7 mmol/L.

The receiving team decided to proceed according to our Bernese Hypothermia Algorithm[3] and to rewarm the patient, with limited trauma assessment. The assessment, which was done simultaneously with cannulation of the groin, included a primary survey and extended focused assessment with sonography in trauma to exclude major hemorrhage. As large bleeding was excluded, the team decided to start active invasive rewarming using minimal extracorporeal circulation.[4] During rewarming, the patient underwent a full trauma assessment using our local polytrauma protocol. The contrast computed tomography scan — among others — showed serial rib fractures with hemopneumothorax, an open book pelvic fracture, a pertrochanteric femur fracture and an active hemorrhage from a lumbar artery. The arterial bleeding was successfully embolized. Subsequently, the patient underwent several orthopedic interventions. Fourteen days after the fall, he was discharged home with full neurologic recovery.

Even in otherwise usually hopeless combinations of cardiac arrest in multiple trauma, a good outcome is possible if the cardiac arrest is caused by accidental hypothermia, as in our case. We hope to motivate colleagues to apply the concept of "no one is dead until he is warm and dead"[5] even in patients with polytrauma, because rewarming could be the only strategy to improve coagulation and allow survival.[6]

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