The “radiographic” effects of therapeutic hypothermia

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Therapeutic hypothermia (TH) has become the standard of care for comatose victims of cardiac arrest with return of spontaneous circulation (ROSC). (1,2) This therapeutic modality has several physiological and molecular mechanisms by which it provides protection to several organs. (3) We recently encountered a “radiologic” effect of this intervention.

A thirty year-old woman with history of end-stage renal disease was admitted to the hospital for a vascular access intervention. Her intraoperative course was complicated by upper airway obstruction with a difficult intubation. During the intubation attempts she developed a cardiopulmonary arrest. Cardiopulmonary resuscitation and advanced life support was given for approximately 25 minutes until ROSC was obtained. Shortly thereafter she was taken to the intensive care unit, where her Glasgow coma score was 4T. A chest x-ray was obtained on arrival to the ICU (Figure 1, Panel A) and depicted pulmonary edema.

She was started on TH utilizing hydrogel pads, reaching a goal temperature (33 °C) within 90 minutes. A second chest radiograph was obtained six hours later (Figure 1, Panel B), revealing significant improvement in the pulmonary edema. No hemodialysis nor ultrafiltration had been done prior to the second radiograph. The patient was continued on TH for a total of 36 hours, after which she was rewarmed. Her course continued to improve to the point that she was eventually extubated and discharged neurologically intact.

Key words: Therapeutic hypothermia, radiology, pulmonary edema, airway.
**Figure 1.** Portable chest radiograph

Legend: Panel A: obtained immediately post-intubation, depicting pulmonary edema; Panel B: six hours after reaching target temperature, where some resolution of the pulmonary edema is noted

**References**