



Don't Sweat It: Impact of Raising Room Temperature on Patient Temperature During Pediatric Spine Surgery

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Background

There is concern that intraoperative hypothermia leads to increased complication rates(Reynolds, 2008). Emphasis on avoiding intraoperative hypothermia and efforts involving raising the room temperature has been shown to negatively impact surgeon performance(Dunn, 2017), though patient benefit has not been demonstrated.

Methods

Patients undergoing thoracolumbar posterior spinal fusion were prospectively enrolled. In addition to patient demographics and clinical data, room temperature data was acquired using a Fireboard 2 Thermometer(Fireboard Labs, Kansas City MO). Temperature probes were placed: 1) in the open air, 2) the shoulder/upper body under the drapes and 3) the hip/lower body under the forced air warming blanket(Bair Hugger). Data were continuously recorded and analyzed in 5-minute increments. Hypothermia was defined as a body temp < 35°Celsius.

Results

There were 982 datapoints at 5-minute increments analyzed from 20.8 hours of collected surgical data. While the air warmer was used, mean temperature around the patient's upper body was $34.0 \pm 2.7^\circ\text{C}$ and lower body was $39.0 \pm 2.5^\circ\text{C}$. Average

room temperature was 22.4 ± 0.8 °C. Temperature around the patient's upper body was an average of 11.6° greater than the room temperature and around the lower body was a mean of 16.6° greater than the room temperature. Temperature around the upper and lower body did not correlate with room temperature ($p= 0.82$ and 0.97).

Mean patient temperature at the start of the procedure was 35.7°C and 20% were hypothermic. Increases in patient temperature while the air warmer was used occurred on average at $.01^\circ\text{C} / \text{min}$. When forced air warmer was used, patient temperature did not increase rapidly when the room temperature was higher.

Conclusion

Increasing room temperature does not appear to impact patient temperature during spinal fusion when forced air warming blankets are used, suggesting that keeping the room at a comfortable temperature for the surgical team is not detrimental to the patient.

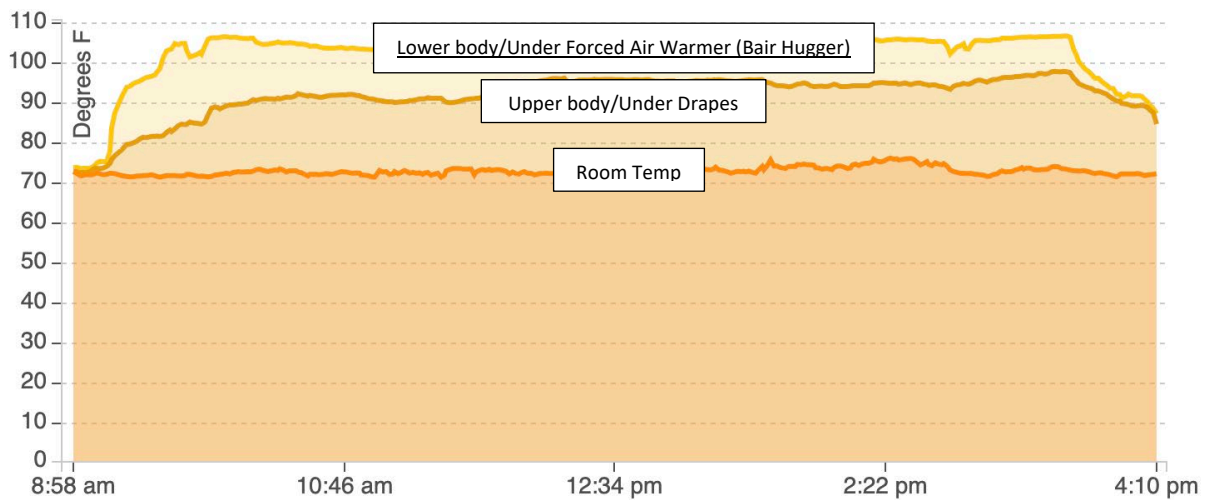


Fig 1. An example of recorded room temperature during which the patient underwent a T2 to the pelvis posterior spinal fusion.

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