# My patient's freezing and she doesn't even know it! Altered thermoregulatory response to spinal morphine: a teaching moment.



Changing What's Possible

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### Background:

• Intrathecal morphine (ITM)  $\rightarrow$  alters central thermoregulation via reduction in central thermoregulatory set point and peripheral vasodilation.

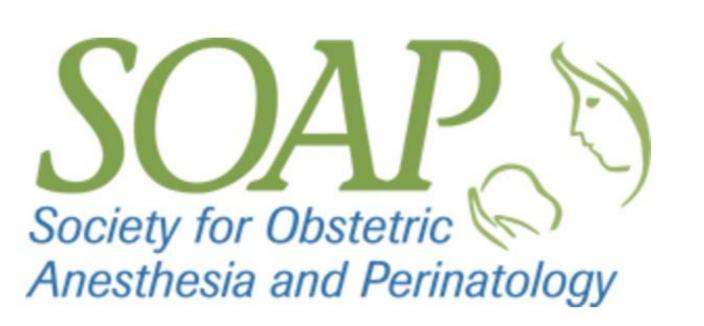
#### Presentation of altered thermoregulation:

- Hypothermia
- +/- Paradoxical diaphoresis
- Subjective sense of warmth

We present a case of significant postoperative hypothermia (33.70C) that presented in PACU four hours after administration of ITM.

#### Case Description

- 30 y.o. G3P0020 at 29w5d
- PMH: CHTN
- Presented with SIPE with severe features and severe FGR, requiring CD at 30w1d.



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0057

- Spinal anesthesia placed with a 25g Whitacre needle
  - 12 mg of bupivacaine-dextrose 0.75%, 15 mcg fentanyl, 200 mcg epinephrine, 0.1 mg morphine
- CD was uneventful with EBL of 681 mL

0510

- Nursing reported low oral and axillary temperatures of 33.7 °C (92.7 °F).
- Covered with warm blankets.
- Asymptomatic, denying chills and stating she felt warm.

0558

- Oral, axillary, and rectal temperatures averaged at 34.3 °C.
- Warm to touch, without shivering
- Bilateral lower extremities still densely blocked.

- 3MTMBair HuggerTM Warming Blanket was applied
- Q5min temperatures were recorded
- ICU was consulted for potential admission

Obstetric and non-OB anesthesia care team members were unaware that ITM could cause thermal dysregulation.

0625

- Patient temperature normalized to 36.3°C on external warming
- Continued to stabilize the next 24 h. VS remained otherwise stable.
- Sepsis workup was diffusely negative.

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POD3

Patient Discharged on POD#3

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**Discussion**: ITM is recommended as part of the ERAS protocol for post CD analgesia.

- ITM has known side effects (respiratory depression, pruritus, urinary retention, nausea/vomiting) that have established management strategies.
- Significant alteration of central thermoregulatory response causing severe hypothermia is a rare side effect of ITM that could get overlooked especially since patients feel paradoxically warm while they are hypothermic, cause a delay in the diagnosis, lead to institution of incorrect and unnecessary interventions and lacks established treatment protocols.
- If untreated, severe hypothermia can have catastrophic consequences including coma and cardiac arrest.
- In conjunction with external warming, there have been reports of pharmacological strategies of mixed opioid agonists and benzodiazepines due to the central nature of the dysregulation.



Overall, the lack of knowledge of this rare side effect of ITM can lead to compromised
perioperative patient safety as providers unfamiliar with this phenomenon may not pursue
pharmacologic therapy for quicker resolution, highlighting a need for education of OB and nursing
staff on the post partum floor.