From Chronic Pain to Critical Care:

Managing an Intrathecal Hydromorphone Pump in a Patient with Severe Burns

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Case Description

- A 55-year-old male with past medical history of multiple spinal surgeries c/b chronic pain status post intrathecal pain pump placement, right knee replacement complicated by recurrent infections resulting in right AKA presented to the ED via EMS for butane burns sustained at home while refilling a butane tank and a spark lit
- He was found to have mixed second and third-degree burns, TBSA ~ 35 to 40%

Assessment/Results

- At acute care, the patient underwent multiple surgeries for excision and grafting of his burns
- Given the extent of burn injury, there was concern his intrathecal pump may need to be removed
- The pump was interrogated and the refill access point was found not to be obstructed by his burns
- His pain pump was refilled in the ICU without any dose adjustments, delivering 7.5 mg/day of hydromorphone
- He was discharged to acute rehab 2 months after presentation to acute care
- At acute rehab, his pain pump was again refilled without the need for any dose adjustments
- Povidone iodine was used to cleanse the area prior to refill
- The reservoir port was accessed using the standard plastic template



Figure 1. Extensive burns over the patient's anterior torso.



Figure 2. Intrathecal pump in the right lower quadrant

Discussion

- Intrathecal pump refills require transcutaneous access to the reservoir port, typically using a template
- Burns over the pump can impede access due to scar tissue increasing the risk of pocket fill, drug withdrawal, infection, and refill-related pain (1, 2)
- Povidone iodine reduces healing time and irritation to burns when compared to chlorhexidine (3)
- Other solutions include ultrasound-guided refills or relocating the pump to sites such as the lower back, thigh, or infraclavicular fossa (2, 4)

Conclusion

Intrathecal pump refills require transcutaneous access to the reservoir port. Burns can impede access increasing risks of pocket fill, drug withdrawal, infection, and refill-related pain. Solutions include using povidone iodine to cleanse to reduce healing time and irritation with refills, using ultrasound guidance, or relocating the pump to an alternative site.

References

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