

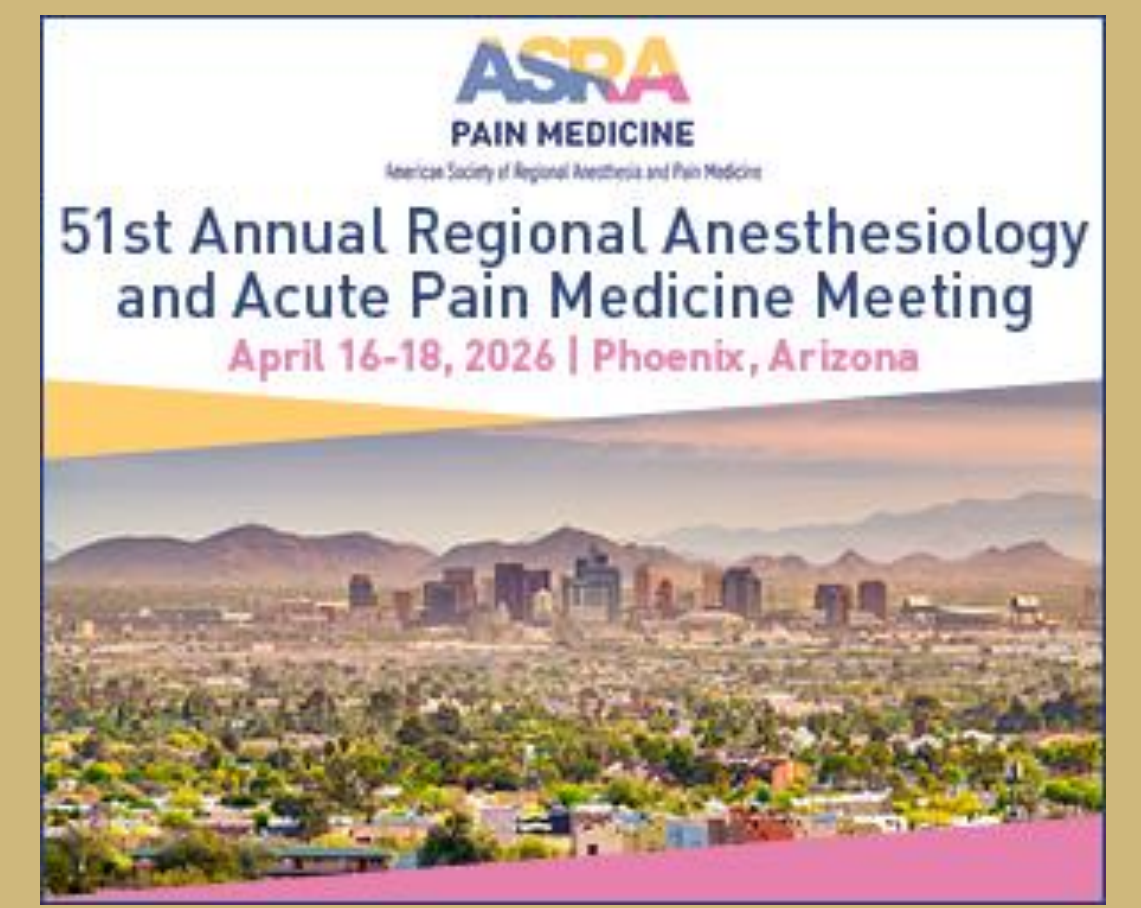


University of Colorado
Anschutz Medical Campus

Regional to the Rescue: Continuous Popliteal Nerve Block Restores Hemodynamic Balance in a VA-ECMO Patient

Noah LaBelle MD¹, Kevin Kim MD^{1,2}, Aidan Hoie MD^{1,2}

¹University of Colorado Department of Anesthesiology, ²UCHealth



Background

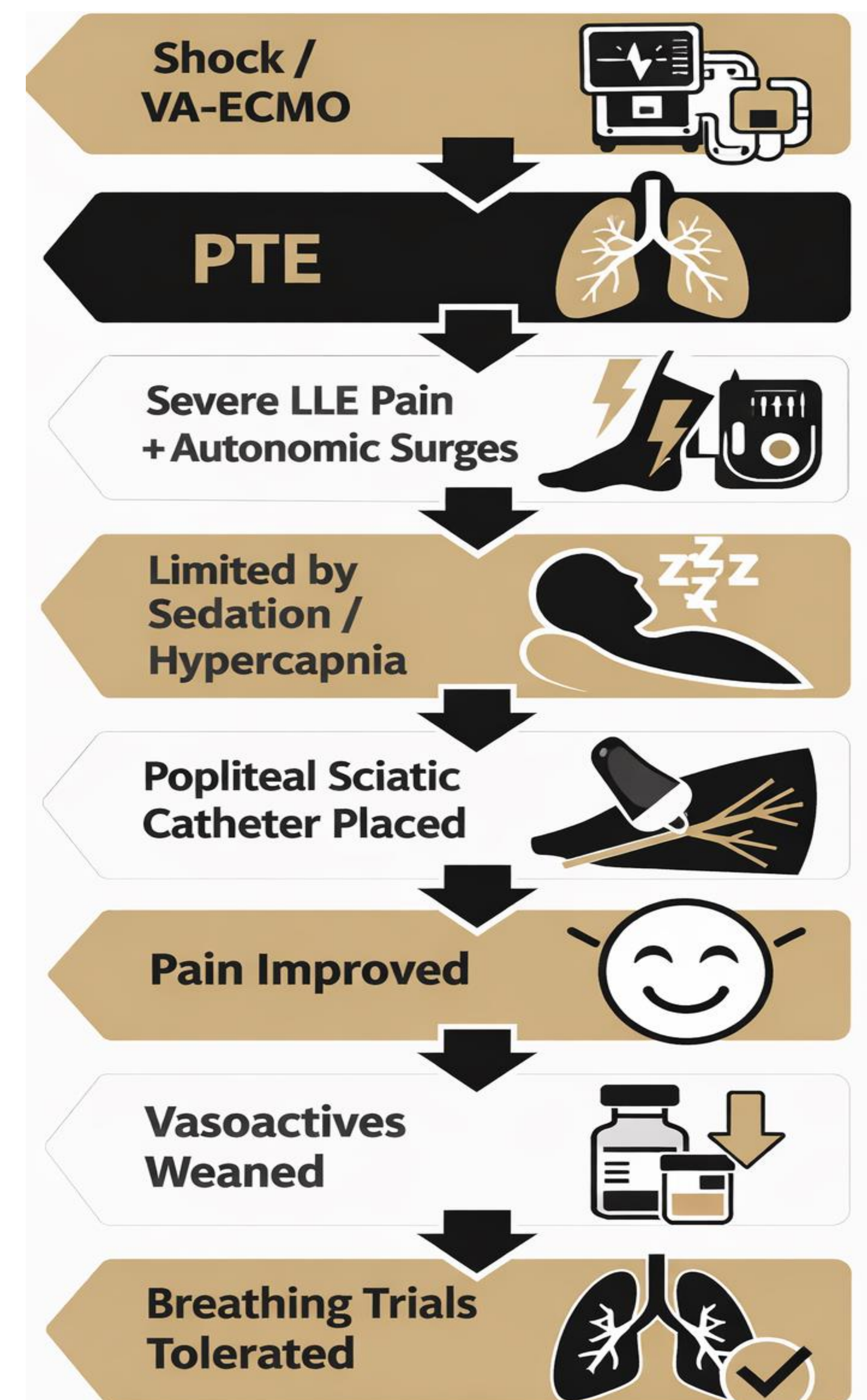
- Pain control in critically ill patients is difficult because systemic opioids may worsen oversedation, further respiratory depression, and delay cardiopulmonary recovery.
- In patients recovering from pulmonary thromboendarterectomy or supported with VA-ECMO, pain-induced sympathetic activation may further destabilize hemodynamics.
- Regional anesthesia may provide targeted analgesia while limiting systemic side effects.

Case

- 33-year-old man with chronic left lower extremity cellulitis, DVT, and recent massive PE developed cardiogenic shock requiring intubation, vasopressors, transfer, and VA-ECMO.
- After stabilization, he underwent pulmonary thromboendarterectomy.
- Postoperatively, severe burning/throbbing left leg pain triggered sympathetic surges, labile blood pressure, and difficulty weaning vasoactive and respiratory support.
- IV fentanyl, oxycodone, gabapentin, and duloxetine provided limited relief and contributed to oversedation, hypoventilation, and hypercapnia.

Intervention

- A continuous popliteal sciatic nerve catheter was placed under ultrasound guidance for targeted LLE analgesia.
- Ropivacaine 0.2% infusion was started at 4 mL/hr with 20 mL boluses every 6 hours.



Outcome

- Pain improved within hours of catheter placement.
- Sympathetic/autonomic fluctuations decreased.
- Sedation and opioid requirements fell.
- Vasopressors, dobutamine, and inhaled epoprostenol were gradually weaned.
- The patient tolerated spontaneous breathing trials with improved hemodynamic and respiratory stability.

Takeaway

- In carefully selected ICU patients, regional anesthesia may provide more than analgesia—it may improve hemodynamic stability and support recovery.
- Continuous peripheral nerve catheters can be a useful opioid-sparing strategy when systemic analgesics worsen ventilation or mental status.
- This case supports consideration of regional techniques in complex cardiothoracic/ECMO patients with pain-driven instability.

References

