

Title: A novel use of an infraclavicular brachial plexus catheter for both limb akinesia and analgesia in agitated delirium in the ICU

PRESENTER:

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BACKGROUND: Regional anesthesia techniques have a wide range of valuable applications outside of the operative setting – particularly in trauma patients. Here we describe the use of an infraclavicular nerve catheter in the ICU setting primarily for limb immobilization to protect a vulnerable extremity in an agitated patient, while also taking advantage of the analgesic effects to facilitate weaning of sedation and elimination of delirigenic factors preventing awakening and extubation.

CASE DESCRIPTION:

42-year-old M 2 wks s/p ORIF of a L mid-shaft humerus fracture presented with pain, itching, redness, palpable subcutaneous mass at fracture site.

Admitted for surgical site infection with underlying hardware failure, possibly infected

Overnight, on hospital day #2/#3 severe acute psychosis and agitation of unclear etiology

Psych consulted → Lorazepam, haloperidol, CIWA protocol for presumed withdrawal

Despite these, pt thrashing against restraints → grossly unstable LUE w/ puncture of hardware through skin

Pt intubated, sedated, transferred to ICU

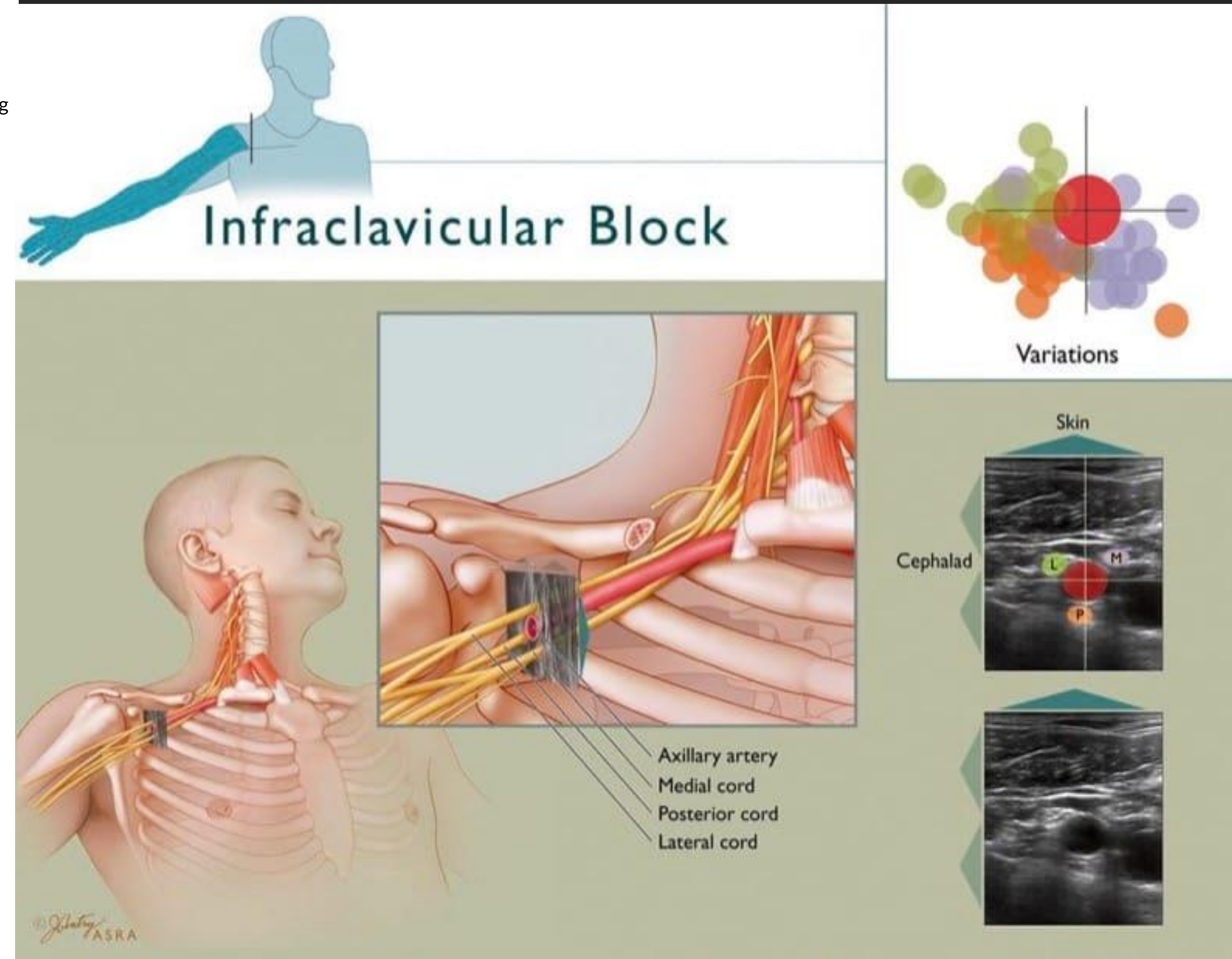
RTOR for repeat ORIF on hospital day #3.

Postoperatively, weaning from sedation challenging d/t continued agitated delirium

Regional anesthesia team consulted

Infraclavicular catheter chosen for site anesthetic coverage and more likely prevention of catheter dislodgement in agitated patient due to deep location w/ overlying pectoral musculature

Infraclavicular nerve catheter for both immobilization & analgesia in ICU delirium



METHODS

1. Live ultrasound imaging used to identify the cords of the brachial plexus.
2. A 17-gauge Touhy needle advanced under ultrasound guidance.
3. Fifteen mL 0.5% ropivacaine injected and peripheral nerve catheter was advanced.
4. A further 10 mL 0.5% ropivacaine injected through catheter with local anesthetic spread around targeted neuronal structures confirmed via live ultrasound imaging.
5. Due to pump shortage, received q 12hr hand bolus of 15mL 0.5% ropivacaine until a pump became available postoperative day #3.

OUTCOME

Pt gradually weaned from sedation and extubated on POD#3 (approximately 24h after catheter placement). Catheter discontinued POD#5 without issues. The patient recovered as expected and was discharged home on POD#7.

DISCUSSION

In this case, a nerve catheter was used to immobilize and protect a patient's vulnerable extremity while simultaneously providing analgesia to eliminate major delirigenic factors to allow weaning of sedation. Given that balancing adequate analgesia with avoidance of oversedation is a common dilemma in the ICU population, especially in situations requiring restraints, this case illustrates several potential benefits of applying regional anesthesia techniques more broadly in the ICU setting.

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