

Online regional anesthesia curriculum to address provider shortages in limited resource settings (LRS) during a global pandemic

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Background

- In limited resource settings (LRS), general anesthesia can be dangerous and subject to numerous constraints: oxygen supply failures, faulty ventilators, and a paucity of providers¹
- Regional anesthesia may offer distinct advantages in LRS; however, few providers are trained in such techniques and ultrasound machines are not always available
- In 2018, Brouillette et al. demonstrated that it possible to effectively introduce an *in-person* basic regional anesthesia curriculum in LRS in a short period of time, called Global Regional Anesthesia Curricular Engagement (GRACE)²
- The 2020 pandemic caused by Covid-19 limited the ability of providers to travel to LRS hospitals, effectively putting the GRACE program on hold

Methods

- A literature review was performed to assess for existing validated online regional anesthesia curricula
- Common ultrasound-guided peripheral nerve blocks (PNBs) anticipated to have high utility in LRS based on needs assessment surveys, direct observations of care, and expert recommendations were included
- Complex PNBs that cannot be performed safely without an ultrasound, nerve stimulator, or using landmark technique, as well as low-utility PNBs, were excluded
- A computer programmer and graphic designer were consulted to help develop interactive online modules focused on high-yield PNBs and educational content that can be utilized by trainees before, during, and after arrival of future GRACE personnel

Figure 1. Teaching an ultrasound- and nerve stimulator-guided FNB

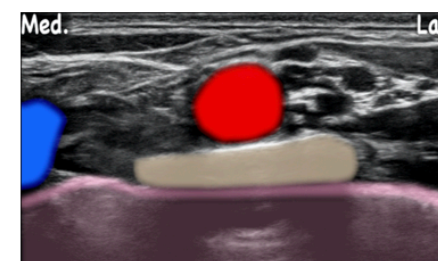


FNB=femoral nerve block

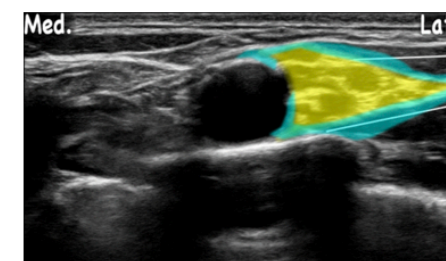
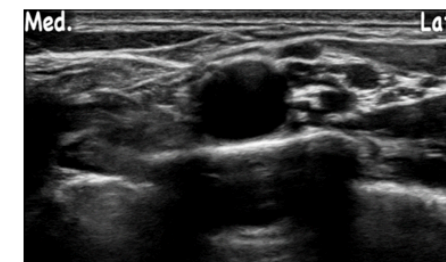
Results

Peripheral nerve block

Peripheral nerve block	Content
Interscalene brachial plexus (US-guided)	Informed consent
Supraclavicular brachial plexus (US-guided)	Monitors
Infraclavicular brachial plexus (US-guided)	The "time out"
Axillary brachial plexus (US-guided)	Ultrasound machines
Femoral nerve in the inguinal crease (US+NS-guided)	Nerve stimulators
Fascia iliaca plane (US-guided)	Pharmacology
Saphenous nerve in the adductor canal (US-guided)	Complications
Sub/trans-gluteal sciatic nerve (US+NS-guided)	Postoperative analgesia
Sciatic nerve in the popliteal fossa (US+NS-guided)	Individual block considerations



Interscalene block, source: Anaesthesia Sonoanatomy



Conclusions

- Hands-on regional anesthesia curricula can improve provider skills in LRS, and online interactive modules may promote trainee competency performing PNBs by providing trainees with relevant content prior to arrival of GRACE personnel and after departure

Reference

1. Hodges, S. C., et al. "Anaesthesia Services in Developing Countries: Defining the Problems." *Anaesthesia*, vol. 62, no. 1, 2007, pp. 4-11.
2. Brouillette MA, et al. *Reg Anesth Pain Med* 2020;0:1-8. doi:10.1136/rapm-2020-101550