

Advanced Training in Regional Anaesthesia

Introduction

Regional anaesthesia plays a role in peri operative pain management as well as acute and chronic pain both surgical and medical. The aim of this 6 month attachment is to provide exposure and mastery of advanced techniques in regional anaesthesia and an understanding of the organisation of facilities to safely provide a regional anaesthesia service. The experience gained by this module should allow trainees to become lead Consultants in regional anaesthesia in their future departments.

Module Goals

During this 6 month attachment we would expect the trainee to demonstrate expertise in lower and upper limb blocks both single shot and catheter techniques. Advanced trainees will be asked to video all blocks done to discuss at a monthly block review/ journal club. This will allow review of technique and results to inform future practice and provide a basis for personal audit. Trainees should be involved with acute pain rounds to observe complications and difficulties of regional anaesthesia in post op pain management as well as chronic pain. During this attachment 1 A-CEX, 1 CBD and 1 DOPs would be expected.

Providing advice and education to colleagues will be an important part of the module. Trainees will be expected to take part in developing online regional anaesthesia education material for higher trainees as well as assessing higher trainees. The advanced trainee will be expected to teach on the Swansea Regional Anaesthesia course and assist in preparing material for future courses.

As the regional anaesthesia service develops so audit will be required to inform progress. All trainees will be expected to take part in an audit or research project with the aim of presenting at a local, national or international meeting. To facilitate an on going research programme trainees will be involved in the development of research protocols for ethics submission.

Learning outcomes:

- Gain mastery in a wide range of regional anaesthetic techniques using a variety of methods to assist in the identification and safe placement of needles and catheters, including in-depth understanding of the place and use of ultrasound.
- Gain mastery in the management of surgical lists in which regional anaesthetic techniques have a major role in the peri-operative anaesthetic care and in doing so demonstrating the necessary leadership, communication and team-working skills necessary to ensure this benefits both the patient and the organization.
- Integration of regional anaesthetic techniques into acute pain management in surgical, trauma and medical patients where appropriate.
- Gain maturity in understanding the importance of utilising the time allocated to clinical sessions effectively, optimising throughput whilst not compromising patient safety.
- Gain the necessary maturity to guide the choice of audit cycles in developing practice.
- Become familiar with recent developments in regional anaesthesia, to evaluate these developments and to advise colleagues of useful changes in practice.
- Becomes a balanced advocate for the use of regional anaesthetic techniques.

Minimum clinical learning outcomes:

- To be capable of undertaking a wide variety of regional anaesthetic techniques independently; this implies an ability to:
 - Provide perioperative anaesthetic care to a wide-range of surgical cases performed under regional anaesthesia, demonstrating a fundamental understanding of the problems encountered
 - Show the decision making and organizational skills required of an anaesthetist to manage busy operating sessions that involve patients having regional anaesthesia as part of their anaesthetic planned care
 - Assist colleagues in decisions about the use of regional anaesthesia in difficult situations and where their use might be controversial
 - Provide teaching to less experienced colleagues of all grades
 - Provide advice to colleagues on the appropriate practice of regional anaesthesia

Knowledge

Demonstrates in-depth understanding of advanced ultrasound scanning, including:

- The effect of ultrasound imaging modalities on the performance of regional anaesthetic techniques e.g. harmonic imaging, multibeam, 3D and volume rendering
- The use of advanced ultrasound needle design to maximise visibility during procedures
- Describing ideal and non ideal patterns of spread of local anaesthetics, with respect to efficacy and complications e.g. intraneural and intravascular injection
- Detailed knowledge of the relevant sonoanatomy in relation to sectional anatomy, including anatomical variations, of vascular, nervous [e.g. the brachial plexus, lumbosacral plexus and terminal peripheral nerves] and muscular tissues
- A knowledge of common ultrasound artifacts
- The need to record, and store, ultrasound images relevant to clinical practice
- The place of ultrasound in clinical management of patients, including medico-legal aspects

Skills

Demonstrates mastery in a wide variety of regional anaesthetic techniques, including but not exclusively:

- The interscalene, supraclavicular, infraclavicular and axillary approaches to the brachial plexus
- Thoracic paravertebral and intrapleural blocks
- Lumbar plexus and combined lumbar plexus and sciatic blocks
- The initial placement and use of indwelling catheters

Demonstrates the use of advanced ultrasound techniques in regional anaesthesia including neuraxial scanning and catheter placement

Demonstrates mastery in the use of adjuncts to enhance safe practice when providing regional anaesthesia techniques [including ultrasound and nerve stimulators]

With regard to ultrasound, demonstrates high levels of skill including:

- The use of appropriate selection of probes for different techniques, with precise probe control and minimum unintentional movement
- Demonstrate the relevant sonography of the peripheral nerves and surrounding structures of the brachial plexus and arm, thoracic and lumbar spine, lumbosacral plexus and lower limb, including the muscles of the anterior abdominal wall and inguinal region and be confident in the performance of regional anaesthetic techniques in these areas.