

Training the trainers: AORA module

Introduction:

“Who dares to teach must never cease to learn.” – John Dana.

It is one thing to know, it's another to teach and train. AORA understands this very well. “Training the Trainers” courses in regional anaesthesia is an endeavour designed by AORA to ensure uniformity in imparting regional anaesthesia knowledge and skills. Trainer course is designed to provide the participants with a sound introduction to the concepts of a systematic approach to training. It is comprehensive in content at this level, building the skills, knowledge and abilities of a participant that is required to be an effective trainer.

On completion of the Trainers course s, learners will equip themselves with the ability to able to plan, deliver and evaluate effective training inn regional anaesthesia as an AORA trainer..

Who can take this course?

Following are the qualification for taking the trainers course.

1. This course is ideal for those with no previous formal training as trainers before in the models and techniques for training and developing Regional Anaesthesiologist.
2. This is necessary to be taken up by teachers with post MD 5 years' experience.
3. C V to be submitted to AORA secretariat by those who aspire to be become AORA certified trainers in regional anaesthesia.
4. The selected candidates would be invited by AORA to take the course.
5. The place and date would be communicated well in advance.

You will be introduced to a range of essential tips, techniques, knowledge and skills covering:

- Planning, delivering and evaluating sessions
- Setting ground rules
- Use of icebreakers
- The learning environment and infrastructure
- Training resources
- Gaining and maintaining attention
- Motivation
- Assessment.

The course is based on the training cycle, covering three main areas:

1. planning (including session planning)
2. delivery (participants will deliver a 10 minute 'session' that they have planned)
3. evaluation (self, peer group and course evaluation).

Equipment

- 1.Nerve Stimulator
- 2.White board with marker
- 3.Pen/Paper/pencil on each table
- 4.Manikin
- 5.Ecg leads

All legalities and permissions for use of the USG machine to be procured and confirmed .(ie PCPNDT)

1.Ultrasound equipment

- a.Ultrasound machine (1 machine per maximum 10 candidates)
- b.Probes –linear,curvilinear on each machine (pediatric hockey stick where indicated)
- c.Adequate usg jelly per station
- d.Tissue paper , dustbin
- e.Provision for electrical connection for all usg machines (electrical extention equipment)
- f.Technical support for the USG machine.

2.1 subject for scanning per station

3. Provision for the subject

- a. bed/patient trolley
- b.blanket/bed sheet
- c.tissue paper/cloth to wipe
- d.water for drinking
- e.tea/snacks/food

4.Infrastructure

- a.Separate enclosed area for conduct of the workshop including lectures and demonstration
- b.Area sufficient to accommodate minimum 15 people
- c.Provision for audiovisual for lectures and presentations includes laptop/projector/mikes.

Blocks on anatomical surfaces that are easy to scan, are technically simple to perform and yield a good success rate may be listed under this category. These areas also have minimal anatomical variations and carry a low risk for serious complications to occur. Trainees with basic knowledge and skills are best initiated into regional anesthesia through these set of blocks. Areas that may be included (but not limited to) in this category are

- 1) Interscalene Block
- 2) Axillary Block
- 3) Femoral Nerve Block
- 4) Popliteal (Sciatic) Nerve Block
- 5) Rectus Sheath Block
- 6) Transversus Abdominis Plane Block
- 7) Chest wall blocks

Intermediate Blocks

Blocks on areas that depict anatomical variations, increasingly challenging scans as well as close proximity to critical structures may be included into this category. Blocks that require a greater degree of technical skills are also included. Trainees who have developed basic skills and show good aptitude towards learning may be permitted to perform these blocks. Occasionally, basic level blocks may be included in this category due to special circumstances, such as obesity, coagulopathy, etc.

- 1) Supraclavicular Block
- 2) Infraclavicular Block
- 3) Blocks of the terminal nerves of the brachial plexus
- 4) Ankle Block
- 5) Subgluteal Sciatic Nerve Block

Advanced Blocks

These blocks carry an inherent risk of complications, including a high risk of failure. Most deeper blocks can be categorized in this area. Some of the blocks are technically difficult to scan and perform and the operator would require to have a good degree of experience to perform these.

- 1) Lumbar Plexus Block
- 2) Sacral plexus Block
- 3) Quadratus Lumborum Block
- 4) Pediatric regional anesthesia

Scope of learning for individual blocks

The Neck and Upper Limb

Key Areas of Learning:

Anatomy

- 1) Anatomy of the brachial plexus
- 2) Anatomy of the cervical plexus
- 3) Major vascular structures in the neck and their critical branches
- 4) Dermatomes, Myotomes and osteotomes of the upper limb

Block Related Learning (ultrasound)

- 1) Major blocks of the neck and upper limb with their modern variants.
 - a) Interscalene block :
 - i) Approach : interscalene groove, posterior approach
 - ii) Assessment of cervical vertebrae levels using tubercle morphology
 - iii) Visualization of phrenic nerve during scan
 - iv) Critical neural and vascular structures to avoid during the block
 - v) MSK anatomy of the area
 - vi) Ergonomics and positioning
 - b) Supraclavicular block :
 - i) Approach : Lateral to medial, Corner pocket injections
 - ii) Depiction of the first rib and pleura
 - iii) Critical vascular structures
 - iv) MSK anatomy of the area
 - v) Ergonomics and positioning
 - c) Infraclavicular Block :
 - i) Ultrasound technique including the retroclavicular and costoclavicular approach
 - ii) Depiction of the proximity of the pleura
 - iii) MSK anatomy of the area
 - iv) Ergonomics and positioning
 - d) Axillary Block :
 - i) Approach
 - ii) Demonstration of all 4 nerves in the axilla.
 - iii) Explanation of possible nerve configurations in the axilla
 - iv) MSK anatomy of the area
 - v) Ergonomics and positioning
 - e) Terminal nerve blocks :
 - i) Approaches
 - ii) MSK
 - iii) Ergonomics
 - f) Cervical Plexus Block :
 - i) Approaches : Superficial, Intermediate and Deep
 - g) Others : Suprascapular Nerve Block, Axillary nerve block
- 2) Theoretical Considerations for the upper limb
 - a) Indications for each block

- b) Local anesthetic volumes for all blocks (minimum and maximum)
- c) Complications of each approach and management.
- d) Diagnosing and preventing phrenic nerve blockade
- e) Supraclavicular block and pneumothorax
- f) Nerve Blocks for shoulder surgery & analgesia
- g) Local anesthetic additives.
- h) Awake or asleep upper limb blocks?

The Abdomen

Key Areas of Learning:

Anatomy

- 1) Anatomy of the anterior abdominal wall
- 2) Anatomy of the posterior abdominal wall
- 3) Course of an intercostal nerve, its branches and innervation
- 4) Dermatomal distribution
- 5) Anatomy, connections and significance of the thoracolumbar fascia

Block Related Learning (ultrasound)

- 1) Major blocks of the Anterior & Posterior Abdomen and their variants
 - a) Rectus Abdominis Block : i) Approach
 - ii) MSK anatomy of the anterior abdomen, transition areas towards the midline as well as postero lateral
 - iii) Ergonomics and positioning
 - b) Transversus abdominis plane block : i) Approach : Subcostal, Posterior approach. Variation in anatomy, optimal needle entry points
 - ii) Ergonomics and positioning
 - c) Ilioinguinal/iliohypogastric nerve block : i) Approach
 - ii) Ergonomics and positioning
 - d) Quadratus Lumborum Block : i) Approach – Types of QLB. QL 1, QL 2, Transmuscular, Intramuscular

- ii) Critical structures in the area – visualization of peritoneum, kidney and lumbar vessels
- iii) Ergonomics and positioning

- 2) Theoretical Considerations for Abdominal Blocks
 - a) Indications for each block
 - b) Local anesthetic volumes for all blocks (minimum and maximum)
 - c) Complications of each approach and management.
 - d) LA uptake during high volume abdominal blocks
 - e) Practicality of catheter insertion

The Lower Limb

Key Areas of Learning:

Anatomy

- 1) Origin, course and branches of the lumbar plexus until their termination
- 2) Origin, course and branches of the sacral plexus until their termination
- 3) Dermatomes, myotomes and osteotomes of the lower limb

Block Related Learning (ultrasound)

Part 1

1) Major blocks of the branches of the lumbar plexus

- a) Femoral Nerve Block :
 - i) Approach
 - ii) Division of the femoral artery, demonstration of the circumflex branch and its significance
 - iii) Surrounding MSK including depiction of the fascia lata and fascia iliaca
 - iv) Ergonomics and positioning
- b) Adductor Canal Block :
 - i) Approach
 - ii) Demonstration of MSK (boundaries and contents of the adductor canal)
- c) Saphenous Nerve Block :
 - i) Approach – Sub Patellar and at the ankle
- d) Lateral Cutaneous Nerve of thigh :
 - i) Approach
- e) Obturator nerve :
 - i) Approach – Anterior and posterior branches

- ii) Demonstration of MSK anatomy. Pectineus muscle, Adductors.
- f) Fascia Iliaca block: i) Approach

2) Theoretical considerations

- a) Indications for each block
- b) Local anesthetic volumes for all blocks (minimum and maximum)
- c) Complications of each approach and management.
- d) Role of femoral block in total knee arthroplasty and hip surgery
- e) Role of adductor canal block in total knee arthroplasty
- f) Role of obturator nerve block in total knee arthroplasty and TURBT
- g) Fascia iliaca block vs femoral nerve block – Whats the difference?
- h) Catheter insertion and practical aspects for femoral block and adductor canal block.

PART 2

- 1) Major blocks of the branches of the sacral plexus
 - a) Sciatic Nerve Block : i) Approaches : Sacral Plexus, Gluteal, Subgluteal, Mid thigh, anterior sciatic, popliteal, ankle block.
 - b) MSK & Vascular considerations for each approach.
 - c) Demonstration of the division of the sciatic nerve
 - d) Ergonomics and positioning

- 2) Theoretical considerations
 - a) Indications for each block
 - b) Local anesthetic volumes for all blocks (minimum and maximum)
 - c) Complications of each approach and management.
 - d) Role of sciatic nerve block in knee surgery
 - e) Importance of posterior cutaneous nerve of thigh
 - f) Advantages & disadvantages of anterior approach
 - g) Importance of the paraneural sheath in popliteal sciatic nerve block
 - h) The subgluteal space
 - i) Newer USG infiltration techniques (ipack)

The Chest Wall

Key Areas of Learning:

Anatomy

- 1) Anatomy of the thoracic spinal nerve, course and branches
- 2) Dermatomal supply of the chest wall
- 3) Innervation of the pectoral muscles, sternum and axilla

1) Major blocks of the chest

- a) Pectoral Nerve Block (PECS):
 - i) Approach : PECS 1, PECS 2, Serratus plane block
 - ii) MSK of the chest region
 - iii) Ergonomics and positioning
- b) Thoracic Paravertebral Block :
 - i) Approach
 - ii) MSK of thoracic spine region
 - iii) Ergonomics and positioning
- c) Newer variants of the Paravertebral block : Approach - Retrolaminar, Erector spinae block
- d) ESP

2) Theoretical Concerns

- a) Indications for each block
- b) Local anesthetic volumes for all blocks (minimum and maximum)
- c) Complications of each approach and management.
- d) Serratus plane block: injection under or over the muscle?
- e) Knowledge of correct levels for performing the paravertebral block for different surgeries.
- f) Catheter techniques