



NEUROANESTHESIA BLOCK

THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA

Objectives of Training and Specialty Training Requirements in Anesthesia

Specific Objectives in CanMEDS Format

OVERALL GOALS

Two separate one-month rotations in neuroanesthesia will provide the resident with a theoretical basis and clinical experience in the anesthetic management of adults undergoing surgical treatment of diseases of the CNS and spine. This clinical experience is supplemented by a formal series of seminars in neuroanesthesia in the core curriculum and informal lectures within the OR setting.

Guided independent study is also encouraged with the provision of a Manual of Neuroanesthesia and compilation of SNACC-recommended peer-reviewed articles located in the Anesthesia Library at LHSC-UH, B3-222.

Upon completion of the neuroanesthesia rotation, residents should have demonstrated proficiency in caring for patients with neurologic disease in a compassionate manner. This includes the preoperative evaluation, intraoperative management, and postoperative care utilizing the most current medical/anesthetic knowledge pertinent to each case. Residents are expected to become proficient at using online medical information, communicating with patients and working effectively with patient care team, demonstrating ethical practices, and practicing cost-effective yet quality health care. The clinical experience will provide exposure to a variety of basic and complex procedures in patients with neurologic disease with graded independence and responsibility.

ROTATION OBJECTIVES

At the completion of the neuroanesthesia rotation, the resident should exhibit the following knowledge, skills and attitudes:

Medical Expert/Clinical Decision-Maker

The resident will be able to:

- Demonstrate knowledge of basic sciences as applicable to neuroanesthesia, including: neuroanatomy, neurophysiology, and neuropharmacology.
- Demonstrate basic understanding of the impact of commonly performed neurosurgical procedures on anesthetic management.
- Demonstrate clinical knowledge and skills necessary for the practice of neuroanesthesia including:

- Preoperative neurological assessment (using Glasgow Coma Scale, Hunt-Hess Classification for SAH and basic neurological exam).
- Intraoperative support including:
 - Special Positioning (sitting, prone, park-bench, lateral and knee-chest).
 - Understanding basic principles of neurophysiologic monitoring – EEG, Evoked potential (SSEP, BAEP), Transcranial Doppler, cerebral oximetry, and intracranial pressure monitoring methods available.
 - Specific interventions – systemic arterial hypotension/hypertension, CSF drainage, ICP management, hypothermia and precordial Doppler monitoring for air embolus.
 - Management of specific perioperative complications such as seizures, cerebral ischemia, intracranial hypertension, intraoperative aneurysm rupture, air embolism, cranial nerve dysfunction and neuroendocrine disturbance (DI, SIADH).
 - Postoperative management of neurological patients in PACU, ICU and the Neuro-Observation Unit.
- Demonstrate competence in all technical procedures commonly employed in neuroanesthesia practice – including airway management (basic and difficult), cardiovascular and neuro-resuscitation, invasive monitoring (arterial line, central line and LP Drain placement).
- Develop and implement a rational anesthetic plan of management for each of the following neurosurgical procedures:
 - Craniotomy for mass lesions (tumor, abscess, hematoma)
 - Cerebrovascular procedures (aneurysm, AVM, carotid vascular disease)
 - CSF shunting procedures
 - Transsphenoidal surgery
 - Stereotactic procedures
 - Awake craniotomy
 - Neuroradiological procedures (embolization, thrombolytic and MRI)
 - Spine surgery

Communicator

The resident will be able to:

- Establish a therapeutic relationship with patients and their families in the limited time available.
- Obtain and collate relevant history from patients and families.
- Listen effectively.



- Demonstrate empathy, consideration and compassion in communicating with patients and families.
- Communicate effectively with medical/surgical colleagues, nurses, and paramedical personnel regarding the anesthetic management of the patient.
- Demonstrate appropriate written communication skills through accurate, legible, and complete documentation of the anesthetic record, patient chart and in consultation.

Collaborator

The resident will be able to:

- Demonstrate the ability to function in the clinical environment using the full abilities of all team members (surgical, nursing, ICU, etc.).
- Develop their anesthetic plan for their patients in consultation and in concert with surgery, nursing and ICU (if necessary) for more complicated neurosurgical patients.
- When time permits, residents are encouraged to attend multidisciplinary Neurosciences and Epilepsy Rounds. These experiences should permit the resident to:
 - Understand and value the skills of other specialists and health care professionals.
 - Understand the limits of their knowledge and skills.
 - Be able to understand, accept and respect the opinions of others on the neuro team.
- Function in the OR as a member of the neuro team and work in a positive, constructive manner, respecting the importance of the roles of all team members.

Leader

The resident will:

- Demonstrate the ability to manage their operating room:
 - Ensuring necessary equipment, monitoring, and medications are available for each case.
 - Making preparations to deal with anticipated complications.
 - All these activities should be conducted in an effective and efficient timely manner in order to avoid OR delays.
- Utilize personal resources effectively in order to balance patient care, continuing education and personal activities.
- Utilize information technology to optimize patient care and lifelong learning.



Health Advocate

The resident will:

- Begin to recognize the opportunities for anesthesiologist to advocate for neurosurgical patients. In particular with regards to patient safety.
- Begin to adopt a leadership role in the postoperative care of their patients by anticipating and arranging for either PACU, ICU, or Neuro-Observation Unit care.

Scholar

The resident will:

- Be responsible for developing, implementing and regularly re-evaluating a personal continuing education strategy.
- Contribute to the development of new knowledge through facilitation/participation in ongoing departmental research activities.
- Be required to prepare in advance for the O.R. cases scheduled through additional reading, patient chart review/assessment.

Professional

The resident will:

- Demonstrate a commitment to executing, professional responsibilities with integrity, honesty and compassion.
- Demonstrate appropriate personal and interpersonal professional behaviors and boundaries.
- Recognize limits of personal skill and knowledge by appropriately consulting other physicians when caring for the patient.

Revised: April 2011, Dr. Granton