

Dalhousie University Neurosurgery

Resident Rotation Objectives: NeuroPathology

Goal:

To enhance the residents' knowledge about the anatomy, development and biology of the normal and diseased nervous system.

General Requirements:

The residents will be expected to participate in numerous activities including autopsies, tissue selection and fixation, brain cutting, microscopic assessment of the nervous system, preparation and assessment of surgical biopsies and preparation of neuropathological reports. Residents will participate in all rounds and teaching sessions planned by the neuropathologists during the rotation.

Medical Expert

KNOWLEDGE

1. Be able to describe basic pathological processes (general pathology). Gain an understanding of the basic processes peculiar to the pathology of the nervous system, such as Wallerian degeneration and regeneration, trans-synaptic degeneration, demyelination, tumors, and cerebral infarction and edema.
2. Learn the anatomy and functions of the regions, tracts and nuclei of the CNS, taking advantage of the material at hand for brain-cutting and anatomic dissection.
3. Learn to recognize and interpret evidence of gross and microscopic disease of the nervous system, and acquire an understanding of the causes and mechanisms of the changes.
4. Learn to correlate clinical and pathological findings related to the nervous system, and to relate these findings in other systems.
5. Become familiar with basic neuropathological and neuroanatomic texts, and learn to locate and analyze pertinent literature.
6. Gain an appreciation for the diagnostic contribution made by the neuropathologist, and for the factors which may limit this contribution in some situations. E.g., the problems of small specimens or sampling error in the assessment of tumors.

TECHNICAL SKILLS

1. Perform basic dissections of the brain and spinal cord in accordance with standard neuropathologic techniques.

2. Appropriately prepare and fix gross and microscopic specimens of the nervous system for further examination.
3. Display appropriate use of the light microscope.

Communicator

General Requirements:

1. Understand the need for cooperation between the neurosurgeon and neuropathologist in the examination and diagnosis of neuropathological specimens.
2. Discuss appropriate information with the health care team.

Specific Requirements:

1. Communicate effectively with attending neuropathologists and paramedical personnel.
2. Contribute toward the preparation of neuropathological reports with attention to clinical-pathological correlation.
3. Communicate examination results effectively to referring physicians and the health care team.
4. Understand the neurosurgeons and neuropathologists role in the examination and diagnosis of neuropathological specimens.

Collaborator

General Requirements:

1. Understand the role and duties of a neuropathologist.
2. Contribute to neuropathological examinations and activities within the Pathology laboratory.
3. Contribute effectively to other interdisciplinary team activities.

Specific Requirements:

1. Be an active participant in the neuropathological examination of specimens. Show an interest in learning the role and duties of a neuropathologist.
2. Provide instruction to medical students and more junior physicians at a level appropriate to their clinical education and professional competence.

Leader

General Requirements:

1. Work effectively with the attending Neuropathologists and laboratory staff.

2. Show respect and caution with neuropathological specimens.
3. Utilize information technology and literature resources to optimize understanding of the neuropathological diagnostic process.

Specific Requirements:

1. Recognize the necessary safety precautions entailed in the examination of tissue specimens removed at surgery and postmortem.
2. Show the appropriate respect to neuropathological specimens and results of the neuropathological examination.
3. Effectively use time to coordinate participation with diagnostic activities in the laboratory and read. Be punctual.

Health Advocate

General Requirements:

1. Be aware of important determinants of health related to neuropathological diseases.

Specific Requirements:

1. Important determinants related to neuropathological diagnoses may include the following:
 - a. Knowledge of the genetic basis for certain disorders and inheritance pattern.
 - b. Knowledge of infectious disorders that may require preventative action (e.g., HIV, AIDS – related illnesses, Jacob-Creutzfeld disease).

Scholar

General Requirements:

1. Develop, implement and monitor a personal continuing education strategy.
2. Critically appraise sources of medical information.
3. Facilitate learning of patients, house staff/students and other health professionals.
4. Gain some familiarity with neuropathological research, and with the contributions to neurosurgical research made with neuropathological techniques.

Specific Requirements:

1. Read widely during the Neuropathology rotation especially around cases seen while on clinical neurosurgery services where neuropathology is involved.
2. Be able to critically assess the neurosurgical literature as it relates to neuropathological diagnoses.

3. Participate in academic activities where available during the Neuropathology rotation such as neuropathology conferences, brain cutting, and neurosciences seminars.

Professional

General Requirements:

1. Exhibit appropriate personal and interpersonal professional behaviors.
2. Practice medicine ethically consistent with obligations of a physician.

Specific Requirements:

1. Be willing and able to appraise accurately his or her own professional performances and show that he/she recognizes his/her own limitations with regard to skill and knowledge by appropriately consulting other physicians and paramedical personnel.
2. Be willing and able to expand on one's knowledge base through reading and other resources.
3. Actively participate in conferences offered through the Neuropathology division.