DESCRIPTION

The 4th year elective in Neurology offers students a continuation of their introduction to Clinical Neurological Sciences that they began in first and second year. It provides an opportunity for students to consolidate their knowledge through application in the clinical care of patients.

The two-week elective is a combination of inpatient and outpatient Neurology. Students are assigned to the Neurology CTU Team at the University Campus, London Health Sciences Centre for the first week. As part of the team, commensurate with their abilities, students will be responsible for the assessment, investigation and treatment of patients seen on the in-patient, consultation or emergency services. The second week will be spent at the Urgent Neurology Clinic at Victoria working with the consultant and residents assigned to the Urgent Neurology Clinic.

LEARNING OBJECTIVES

1. Medical Expert

A. General:

Knowledge: Students should be able to define, describe and discuss the:

a) clinical presentations that may signify nervous system involvement;
b) elements of the neurologic examination (mental status, language, cranial nerves, motor, reflexes, sensory, coordination and gait);
c) components of the nervous system being evaluated by each aspect of the exam;
d) indications, contraindications and complications of lumbar puncture;
e) indications and contraindications for CT head and MRI brain;
f) indications for and usefulness of electromyography and nerve conduction studies (EMG/NCS);

Skills: Students should be able to:

a) demonstrate a focused history-taking that incorporates pertinent positives and negatives for the presenting neurologic complaint;
b) perform an organized and focused neurologic examination distinguishing normal from abnormal findings;
c) synthesize the history and physical findings to accurately localize the problem within the nervous system:
   • cerebral hemisphere – cortical vs subcortical
   • posterior fossa – brainstem and cerebellum
   • spinal cord
• anterior horn cell
• nerve root/plexus
• peripheral nerve
• neuromuscular junction
• muscle

d) formulate a differential diagnosis based on the time course, history, exam and localization;
e) accurately interpret the results of CSF analysis;
f) demonstrate an approach to the interpretation of CT head.

B: Specific:

Knowledge:
Students should be able to define, describe and discuss the following neurologic conditions:

• Acute stroke – ischemic or hemorrhagic
• Transient ischemic attack
• Epilepsy
• Migraine
• Tension-type headache
• Meningitis and encephalitis
• Parkinson disease
• Coma and brain death
• Multiple Sclerosis
• Polynuropathy

Students should be able to identify risk factors (modifiable and non-modifiable) that predispose individuals to the above neurologic conditions.

Skills: History-taking:
Students should be able to obtain, document and present an appropriately complete medical history for the following clinical presentations:

• Weakness – focal vs diffuse
• Numbness/tingling/altered sensation
• Visual disturbance
• Headache
• Seizure
• Altered level of consciousness/coma
• Aphasia
• Ataxia
• Involuntary movements
• Transient neurologic symptoms
• Neuropathic pain

Students should be able to define, describe and discuss:

• the clinical presentation as abrupt, acute, subacute or chronic;
• a relevant differential diagnosis;
• and identify the critical features (“red flags”) that indicate an emergent or urgent
Students should be able to demonstrate an initial approach to the investigation and management of the following:

- acute stroke in the emergency room;
- acute flaccid weakness;
- headache, fever and meningismus;
- abrupt, severe “thunderclap” headache;
- acute altered level of consciousness;
- status epilepticus.

2. Communicator

a. Document clear and complete admission histories and progress notes that accurately reflect patients’ stories and their clinical course while in hospital or during their clinic visit.

b. Develop an approach to discussing common neurologic diagnoses with patients and their families.

c. Participate in a family meeting about prognosis and potential outcomes in stroke.

3. Health Advocate

a. Advocate for timely access to diagnostic testing when necessary for patient care.

4. Scholar

a. Conduct a focused literature search evaluating the evidence for at least one management decision for a patient followed on the neurology CTU service or seen in the clinic.

b. Discuss the NASCET trial and the number needed to treat in the medical vs surgical management of symptomatic carotid stenosis.

5. Professional

a. Recognize and discuss common ethical issues involved in the care of patients with serious neurologic illness, including the principles of substitute decision making.

b. Schedule and attend punctually all outpatient clinics, ensuring that consultants and their administrative assistants are informed in advance.
6. Manager

   a. Utilize patient encounters to reflect on ways that an individual’s health care might be improved in a cost effective manner while maintaining quality care.

7. Collaborator

   a. Attend, and if appropriate, participate in Monday interprofessional health care team rounds at least once.

   b. Participate in at least one family meeting for discharge planning for patients admitted to the Neurology CTU service.

Structure of the Rotation

The Neurology elective is structured as a two-week rotation.

Clerks are to report to Sheryl Jones, CNS Education assistant after 0900 hrs on the first Monday morning of their rotation for their pager ($100 deposit required) and to complete the pre-elective test. Sheryl’s office is located at University Hospital in room C7-114B.

The rotation will be a combination of:

   Inpatients, University Hospital: One of the two weeks under the supervision of the CTU neurology senior and the neurology attending:

      Neurology Clinical Teaching Unit – CTU

      Inpatient consults

      Emergency room consults

   Urgent Neurology Clinic: One of the two weeks will be spent at the Urgent Neurology Clinic at Victoria Hospital

Assessment

It is the student’s responsibility to ask for immediate formative feedback from each consultant worked with during the selective/elective and to supply the SSMD clinical clerk assessment forms. Third year clinical clerks will have a composite evaluation compiled by Dr. Venance or delegate. The student is to email names of consultants, residents and interdisciplinary team members worked with to Dr. Venance by the Wednesday of the second week.

Students on elective may elect to have their summative assessment completed by:

   i) Dr. Venance (or the CTU consultant in her absence) with a composite assessment based on feedback from residents, interdisciplinary health team members and consultants the
student has worked with (student is to provide the names in an email to Dr Venance
shannon.venance@lhc.on.ca by the Wednesday of the second week).

ii) Or by the Consultant worked with most closely.

**Duties of the Elective Student**

Clinical Teaching Unit – the elective student will be expected to follow 2 or 3 inpatients and will be responsible for daily progress notes documenting clinical course (SOAP format), results of any investigations and developing the management plan in consultation with the senior neurology resident and/or neurology attending. Consults and discharge summaries (inpatient or emergency room) require dictated notes. Any admissions require hand written complete admission notes. If the opportunity arises, elective students will observe and then perform a lumbar puncture.

Urgent Neurology Clinic – the student will be responsible for seeing outpatients in the Urgent Neurology Clinic, initially with the resident and/or consultant and then independently. Each consultation note outlining the history, exam, impression and plan will be dictated by the student and reviewed by the consultant. Students must also clarify any individual learning objectives with the Urgent Neurology consultant at the beginning of the week.

**Teaching Sessions**

Elective students may attend the following rounds/teaching sessions if their clinic or inpatient responsibilities allow:

**Rounds:**

Neurology Grand Rounds Tuesday mornings UH Auditorium A, 0800-1000 hrs

Neurology Resident Academic Half-day Tuesday morning UH Auditorium D 1030-1230 hrs (as appropriate)

Neuroradiology Rounds Wednesday mornings 0800-0900 hrs, C2-210 UH

Movement Disorder Rounds every second Thursday morning 0800-0900 hrs, A10-312 UH

Neuromuscular Rounds first Wednesday of each month 1200-1300 hrs, A7-211 UH

Epilepsy rounds Fridays 0800-0900 hrs, A10-312 UH

**Approach to Neurologic Presentations:** In general, Mondays or Tuesday 1200-1300 (in the Neurology resident room (A7-028 UH)).

**Informal Teaching:**

Informal teaching (at the bedside, in the clinic, in the ER) with senior residents and neurology consultants is a constant. Many of the consultants will also hold informal teaching sessions.

**Resources**

Neurology residents, nurses and consultants are available and interested in teaching.
Year 2 Neuroscience, Eye and Ear notes and Neuro exam videos for review

Cecil’s Essentials of Medicine

**Other resources:**
UWO Neurology Resident website:

http://www.uwo.ca/cns/resident/

NEJM website: Lumbar puncture procedure video:

http://content.nejm.org/cgi/content/short/355/13/e12


An excellent text is *Practical Neurology* by Jose Biller for those interested in Neurology.

CNS library with computer access and current Neurology journals

**NIGHT AND WEEKEND CALL**
There is no mandatory call required. Elective students are welcome to take nighttime or weekend call with a senior neurology resident (to be arranged directly with the neurology senior and post-call guidelines are followed if students choose to do so).

**NUMBER OF STUDENTS ACCEPTED**

LHSC-UH/VH - 1 student per block