

UBC Pain Medicine Residency Program: CanMEDS Goals and Objectives of the UBC Headache Clinic Rotation

Overview:

The UBC Headache Clinic is located in located in rm. 267, on the 2nd floor of UBC Hospital. This is a multidisciplinary clinic involving the collaborative efforts of Dr. Sian Spacey (neurologist), Mr. Don Velie (RN), Mr. James Min and Mr. Larry Leung (Pharmacist). The Headache Clinic is a referral center for headache management in the lower mainland. The clinic receives 920 patient visits /yr. Conditions managed through the clinic include: Migraine, Migraine with aura, Chronic Migraine, Migraine Aura without Headache, Medication Overuse Headache, Tension Headache, Cluster Headache, Trigeminal Neuralgia, Atypical Face Pain, Episodic Hemicrania, Hemicrania Continua, Low CSF Pressure Headache, Idiopathic Intracranial Hypertension, Coital headache, Exercise induced Headache, Post-Traumatic Headaches, New Daily Persistent Headache, SUNCT, SUNA, Occipital Neuralgia. The Headache Clinic currently functions as a teaching clinic for UBC Neurology residents on the ambulatory rotation.

Services offered include counseling regarding triggers, stresses, and lifestyle issues. The use of oral medications and/or nerve stimulators, nerve blocks, and Botox injections for the treatment of chronic migraine.

Educational Objectives

- To understand the pathophysiological mechanisms behind headache pain
- To be able to assess patients with head and face pain
- To develop appropriate treatment plans
- To learn technical skills for nerve blocks and botox injections

Upon completion of the UBC Headache Clinic rotation, the pain resident will fulfill the following goals under CANMEDS roles:

1. Medical Expert Role:

Competencies:

The resident will demonstrate compassionate, appropriate, and effective care, based on the existing evidence base in headache management, aimed at maximizing well being and quality of life for patients, incorporating their families in education and the plan of care. The resident will provide this care in collaboration with an interdisciplinary team.

- 1.1 Gathers comprehensive and accurate information
Obtains a comprehensive medical history and physical exam, correctly interprets, performs and interprets appropriate diagnostic workup, and utilizes information technology effectively
- 1.2 Demonstrates the ability to identify diagnostic alarms in the evaluation of headache disorders
Synthesizes and applies information in the clinical setting.
Develops a prioritized differential diagnosis and problem list, and obtains necessary additional clinical information

1.3 Demonstrates ability to perform a lumbar puncture including obtaining informed consent

1.4 Demonstrates ability to distinguish headaches of primary origin

- a) Migraine
 - With and without aura
 - Hemiplegic migraine
 - Other migraine variants (e.g., migraine with vertigo)
- b) Cluster headache
- c) Other trigeminal autonomic cephalgias
- d) Tension-type headache
- e) Trigeminal neuralgia
- f) Other cranial neuralgias
- g) Atypical facial pain
- h) Chronic daily headache
 - 1) Chronic migraine
 - 2) Chronic tension-type headache
 - 3) Hemicrania continua
 - 4) New daily persistent headache

and

Demonstrates ability to take a relevant history and perform a focused physical and neurologic examination to diagnose and distinguish between these secondary headaches:

- a) Headache attributed to head and/or neck trauma
- b) Headache attributed to cranial or cervical vascular disorder including giant cell arteritis and subarachnoid hemorrhage
- c) Headache attributed to non-vascular intracranial disorder including brain tumor headache, subdural and epidural hematomas, and low pressure headache including post-LP headache and spontaneous intracranial hypotension, and pseudotumor cerebri, with and without papilledema.
- d) Headache attributed to a substance or its withdrawal (including medication overuse headache, nitroglycerin headache, and drug induced meningitis)
- e) Headache attributed to infection of the brain or its surrounding structures
- f) Headache attributed to disorder of homeostasis
- g) Headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures
- h) Headache attributed to psychiatric disorder

and

Determines need for laboratory, radiologic, or other investigation to classify and distinguish primary from secondary headache.

The resident will demonstrate knowledge about established and evolving biomedical, clinical, population science and social-behavioral sciences relevant to the care of patients with headache and to their families, and relate this knowledge to headache practice.

1.5 Explains General Principles

1.5.1 Epidemiology of migraine and chronic daily headache.

1.5.2 General principles of ICHD-III criteria.

1.5.3 The following primary headaches:

- a) migraine, with and without aura (know ICHD-II criteria), and variants
- b) Hemiplegic migraine
- c) Tension-type headache
- d) Cluster headache
- e) SUNCT/SUNA
- f) Trigeminal neuralgia
- g) Chronic daily headache
 - 1) Chronic migraine
 - 2) Chronic tension-type headache
 - 3) Hemicrania continua
 - 4) New daily persistent headache
- h) Atypical facial pain

1.5.4 The differential diagnosis for thunderclap headache, subacutely worsening daily headache, and cough headache

1.6 Understands Anatomy and Pathophysiology:

1.6.1 Trigeminal nerve, its branches, and central structures involved in pain processing from the head, face, and neck.

1.6.2 Common conditions associated with dysfunction in branches of the trigeminal system.

1.6.3 Central processing of nociceptive signaling from the trigeminal nucleus caudalis (TNC) and the structures of the descending inhibitory pathways including the periaqueductal gray (PAG), median and dorsal raphe, and the red nucleus.

1.6.4 Pathways of head and face pain via the ventral thalamus and somatosensory cortex.

1.6.5 Anatomy of the cranial sympathetic and parasympathetic nervous systems.

1.6.6 Migraine genetics including familial hemiplegic migraine, CADASIL, MELAS

1.6.7 Trigeminovascular hypothesis of migraine.

1.6.8 Know the specific serotonin receptors, most importantly 5HT_{1B/D/F}.

1.6.9 Risk of serotonin syndrome in migraine treatment

1.6.10 Principles of cutaneous allodynia.

1.6.11 Cortical spreading depression (CSD) and its possible importance in migraine aura.

1.6.12 Physiological evidence of cortical hyperexcitability (or disinhibition)

1.6.13 Cortical and brainstem activation before and during migraine headache.

1.7 Discusses Pharmacology

1.7.1 Evidence and mechanisms of action of anti-inflammatory medications, neuroleptic medications, anticonvulsants, magnesium, ergots, triptans, caffeine, and opioids in the acute treatment of migraine.

- 1.7.2 Mechanisms of preventive medications: antidepressants, anticonvulsants, antihypertensives, botulinum neurotoxin, riboflavin, magnesium
- 1.7.3 Central and peripheral serotonergic action of drugs
- 1.7.4 CGRP receptor antagonists (at the point of medication approval)
- 1.7.5 Dopamine receptor antagonists
- 1.7.6 Presumed sites of action of the triptans.
- 1.7.7 Indomethacin in the treatment of indomethacin responsive headaches.
- 1.7.8 Indications, contraindications, and common drug-drug interactions for acute and preventive treatment of headache medications.
- 1.7.9 When monitoring is required for side effects and to assure the safety of migraine medications

1.7.10

1.8 Makes Correct Diagnosis, Treatment, and Management Decisions and Actions:

- 1.8.1 Explain risks, benefits, contraindications, and practical applications:

Imaging

- 1) CT (head, spine, sinuses)
- 2) MRI/A/V (spine, head, neck)
- 3) nuclear cisternogram
- 4) CT myelogram

Lumbar puncture

- 1) Diagnostic
- 2) Therapeutic

Behavioral and alternative therapies

- 1) Biofeedback and relaxation
- 2) Cognitive behavioral therapy
- 3) Physical and manipulative therapies
- 4) Acupuncture
- 5) Supplements and herbal products

- 1.8.2 Initial management steps in the medical emergencies.
- 1.8.3 Concepts of acute, symptomatic, and rescue treatment of migraine
- 1.8.4 Inpatient strategies for treating status migrainosus and chronic daily headache syndromes including, intravenous dihydroergotamine, neuroleptics, anti-inflammatory medications, anticonvulsants; detoxification; and behavioral management
- 1.8.5 Implications of frequent acute headache medication use and medication overuse headache.
- 1.8.6 Indications for the preventive treatment of headache.

- 1.8.7 Propranolol, amitriptyline, valproic acid, topiramate; and onabotulinumtoxinA as preventive medication for chronic, but not episodic, migraine.
- 1.9 Explain the Importance of Comorbid Illness
 - 1.9.1 Generalized anxiety disorder, panic disorder, major depressive disorder, bipolar disorder, fibromyalgia, and irritable bowel syndrome, epilepsy, dysautonomia, patent foramen ovale
 - 1.9.2 How treatment decisions are affected by comorbid illness
 - 1.9.3 Common psychological stressors
- 1.10 Understands Global Considerations:
 - 1.10.1 Concept of headache medicine
 - 1.10.2 Interdisciplinary team
 - 1.10.3 Assess pain and other common non-pain symptoms
 - 1.10.4 Headache management of pediatric and geriatric patients

2. Communicator

Competencies:

The resident will be able to demonstrate interpersonal and communication skills that result in effective relationship-building, information exchange, emotional support, shared decision-making and teaming with patients, their patients' families, and professional associates.

- 2.1 Be able to write effective chart notes for patients with headache, and write or dictate complete and succinct consultations for patients with headache.
- 2.2 Be able to verbally present medical information succinctly and accurately to attending staff
- 2.3 Be able to communicate effectively with other members of the health care team.
- 2.4 Be aware of the advantages, disadvantages, limitations of written communication, verbal (both telephone and in person) communication, and non-verbal communication when communicating with patients, family members, or other members of the health care team. To be able to address challenging communication issues effectively, such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstandings.

3. Collaborator Role

Competencies:

The pain resident will be able to function effectively with the headache team including other physicians, nurses and pharmacists and understand the roles of other healthcare providers such as family physician, neurologist, neurosurgeon, psychiatrist, anesthesiologist, psychologist, addiction medicine physician, psychologist, anesthesiologist, and physiotherapist, and how they integrate into the patient's headache management.

3.1 Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care and specifically in situations where:

- An emergency referral to another specialist is required.
- Consultation with another medical specialist would be beneficial (including for diagnostic or treatment- related interventional procedures)
- Consultation with an allied health practitioner (i.e. Occupational or Physical Therapist) would be beneficial.
- Offer patients the services of patient support groups when indicated

4. Leader Role

Competencies:

4.1 The pain resident will be able to prioritize treatments and complete tasks efficiently

4.2 The pain resident will be able to effectively triage patients and allocates resources appropriately

5. Health Advocate Role

Competencies:

5.1 The resident will be able to advocate for patients with headache to assess appropriate treatment and facilitate access to community resources when needed.

5.2 The resident will be able to educate patients and assist with managing risk factors.

6. Scholar Role

Competencies:

6.1 The pain resident will develop critical thinking skills.

6.2 The pain resident will be able to search the literature around patient headache problems and be able to appropriately incorporate the information into practice.

7. Professional Role

Competencies:

The resident will be able to demonstrate a commitment to carrying out professional responsibilities, awareness of their role in reducing suffering and enhancing quality of life, adherence to ethical principles, sensitivity to a diverse patient population, and appropriate self-reflection.

- 7.1 Demonstrates understanding of accountability to patients, society, and the profession.
- 7.2 Arrives on time and prepared for work, dressed appropriately and clean, seeing all patients willingly, and advocating for them upon disposition.
- 7.3 Fulfills professional commitments:
 - Responds to requests from patients and families for medical information
 - Helps colleagues
 - Shows accountability for personal actions and plans
 - Works effectively as a team member.
 - Addresses concerns about quality of care and impaired performance among colleagues
 - Show respect, dignity, and compassion
- 7.4 Demonstrates knowledge of ethics and law that should guide care of patients
- 7.5 Shows respect and compassion towards all patients and their families
- 7.6 Recognizes own role and the role of the system in disclosure and prevention of medical error.