Common Problem of the Neurological System

Headache, Dizziness, Syncope

本講義表格資料取自Danis, J.E., Baumann, L.C., & Scheibel, P. (2007). Advanced assessment and clinical diagnosis in primary care. (3rd ed). St. Louis: Mosby.

圖片取自Seidel HM, Ball JW, Dains JE, Benedict GW. (1999). Mosby's guide to physical examination. St. Louis, MO: Mosby.

Headache

Headache

- A subjective feeling
- Intracranial and extracranial factors
- Goal in evaluation
  - Identify life-threatening cause
  - Diagnose treatable disease
  - Provide symptom relief

Type and location of headache

- Type
  - Primary
    - Absence of structural pathology/systemic disease
    - 90% of headache
    - Five major types
      - Migraine, tension-type headche (TTH), cluster headache and other trigeminal autonomic cephalagia, and others
  - Secondary
    - Cranial neuralgias, central and primary facial pain
- Location of pain
  - Front of head
    - From structure anterior and above tentorium
  - Back of head
    - From structure located below tentorium

Life-threatening headache

- Intracranial hemorrage
  - Sudden onset of “worst ever” headache, transient loss of consciousness
  - Exacerbated by coughing or exercise
  - Papilledema, vomiting, sensory deficit or other neurological deficit , seizure
  - Rupture of aneurysm or vascualr anomaly
  - In SAH: stiff neck
  - In adult > 50, or on coagulotherapy
- Epidura/subdura hematoma
  - After head injury
- Intracranial tumor
  - Recurrent morning headache
  - Reflex asymmetry, Papilledema, vomiting

Characteristics of pain

- A moderate, constant throbbing pain:
  - dilation of cervical arteries
- Severe pain:
  - expansion lesion such as tumor or hematoma, edema, enlargement of ventricle
- Migraine:
  - steady or throbbing and limited to the same side with photophoia, takes 3~4 hours to reach peak
- Tension headche:
  - hatband-type without photophoia, disappear on weekend, lasts less than 24 hours.
- Headache associated with hypertension
  - occur with DBP>130 mmHg

Tension-type headache (Muscle)

- Most common in adult, esp. in women
- Bilateral pain, gradual onset
- Described as tightness and pressure, frontotemperal bandlike distribution
- Last hours or days, recurrence may extend weeks or months
- Associated with hunger, depression or stress

Migraine without aura (common)

- 20% of adult, may in child > 5 y/o
- Unilateral and throbbing
- Accompany by nausea, photophobia and exacerbation from physical activity
- Frontal or periorbital area
- Rapid onset and crescendo within hours.
- Recur daily, weekly.
- Chronic migraine: >15 day in a month

Migraine with aura (classic)

- Headache precipitated by bright lights, noise, or tension
- Auras include visual disturbance, ascending paresthesias or numbness, weakness, and aphasia
- Pain may be associated with photophobia, phonophobia, N/V.
- Aura may proceed or without a headache.

Cluster headache

- Vascular origin, more often in men
- Onset is abrupt, often during the night, severity increased steadily
- Unilateral, ocular or periocular
- Burning, piercing or neuralgic
- Last for 15 minutes to 2 hours
- Recurrence are clustered in cycles of days or weeks, with remissions lasting months to years
- Associated symptoms include ipilateral rhinorrhea, conjunctival injections, facial sweating, ptosis and eye edema

Benign exertional headache

- Occur suddenly and are related to coughing, sneezing, straining, running,..
- Headache is result of stretching the pain-sensitive structure in the posterior fossa
- The onset is sudden and splitting and pain may last from second up to 30 minutes

Subdura hematoma

- A sudden, severe headache that is associated with history of head trauma, exertional physical activity or pharmacological anticoagulation
- Transient loss of consciousness, stiff neck, N/V, photophobia, pupilary dilation, and pain over the eye.
- Posttrauma headache can occur hours or a day after injury

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Headache*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Primary headaches without structural or systemic pathology			
Tension-type headache (muscle)	Common in adults; bilateral pain, general or localized in bandlike distribution; history of anxiety, stress, or depression	Normal physical examination; neck muscle tightness or fasciulations may be palpated	None
Migraine without aura (common)	More common in children; unilateral, throbbing pain; nausea	Photophobia and phonophobia	None
Migraine with aura (classic)	Pain precipitated by environmental stimuli; visual disturbances (scintillating scotoma) precede pain	Nausea and vomiting, photophobia and phonophobia	None
Mixed headache	Throbbing, constant pain during waking hours; muscle tightness; family history of migraine	Mix of findings related to tension and migraine headache pain	None
Cluster headache	Rare in children; abrupt, nighttime onset; unilateral periorbital pain that is severe	Ipsilateral rhinorrhea, nasal stuffiness, conjunctival injection, sweating, ptosis	None
Benign exertional headache	Sudden onset related to physical exertion, valsalva, or coitus	Normal physical examination	May need to distinguish from subarachnoid hemorrhage with CT scan

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Headache*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Secondary headaches with structural or systemic pathology infectious origin			
Sinusitis	Frontal, upper molar, or periorbital pain; cough, rhinorrhea	Low to no fever; pain on palpation of frontal, maxillary sinuses; purulent nasal or postnasal discharge	Radiographs (Waters vies)
Dental disorders	Localized pain in jaw and top of head	Malocclusion, caries, abscesses of teeth present, gum disease	Dental referral
Pharyngitis	Sore throat	Fever; infection of posterior pharynx	Throat culture
Otitis media	Ear pain, pain with swallowing	Fever, red, bulging tympanic membrane	None
Meningitis	Severe headache, chills, myalgias, stiff neck; toxic child or adult	Positive kernig's and brudzinski's signs; fever, photophobia, petechial rash may be present; mental status changes	Lumbar puncture

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Headache cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Neurogenic origin			
Trigeminal neuralgia	Persons >55 yr; bursts of sharp pain over face innervated by affected nerve; triggered by stimulus to affected nerve	Normal physical examination; stimulation of triggers may provoke pain	None
Optic neuritis	Acute onset of pain with extraocular movement (EOM), followed by blurred vision	Diminished visual acuity, decreased papillary reflex, hyperemia of optic disc; pain with EOM	Ophthalmology referral
Cervical spine disorders	May have history of trauma; occipital pain, muscle stiffness	Normal physical examination or pain associated with neck motion	Cervical spine radiographs
Temporal arteritis	Age > 50 yr; sharp, localized temporal pain; malaise, anorexia; history of polymyalgia rheumatica	Fever, weight loss; tender over a nodular temporal artery	Elevated ESR (>50); immediate referral for treatment

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Headache cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Metabolic origin			
Carbon monoxide poisoning	History of exposure; throbbing headache, mild dyspnea	Nausea, vomiting, change in mental status, lethargy, loss of consciousness	Blood gases and carboxyhemoglobin level
Severe hypoglycemia	History of diabetes or medication, alchohol, and food ingestion; generalized headache, dizziness, sense of not feeling well	Normal physical examination or pallor, sweating, and weakness	Blood glucose level; may need self0monitoring of blood glucose to establish pattern
Drug withdrawal	Pattern of headache associated with stopping medication or substance use	Normal physical examination	Blood chemistry
Dietary ingestion	Mild to moderately severe headache after ingestion of foods or medication	Normal physical examination	Blood chemistry

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Headache cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Cerebrovascular origin			
Intracranial tumor	Sudden-onset headache that is progressive, exacerbated by coughing or exercise; worse in morning; history of trauma increases risk	Papilledema, vomiting, asymmetrical reflexes, weakness, sensory deficit, or other neurological deficit	CT scan
Hydrocephalus	Progressive headache, vomiting, irritability	Rapid enlargement of head, bulging fontanels	CT scan and referral
Subdural hematoma	History of head trauma, bleeding disorders, child abuse; adult >35 yr; sudden onset of "worst ever" headache, often over eye; transient loss of consciousness	Unequal pupils, photophobia, neurological changes, seizure	CT scan and neurosurgical referral
Pseudotumor cerebri	Teens, menopausal women; history of vitamin A or tetracycline ingestion; progressive headache	Papilledema may be present	CT scan, neurology referral to assess risk related to lumbar puncture
Brain abscess	History of chronic ear infection or cyanotic hear disease	Fever, seizures, focal neurological deficits	CT scan
Intracerebral hemorrhage	Risk factors: persons >50 yr, with AIDS, taking anticoagulation therapy, or with hypertension	If conscious, abnormal neurological findings correlated with extent of lesion	Emergency transport for immediate evaluation (CT scan) and possible surgical treatment

Focused Hx

- **What clues indicate this is a potentially serious, life-threatening headache ?**
  - How did the headache begin ?
  - Have you had this type of headache before ?
  - On a scale from 0(no pain) to 10(worst pain ever), how severe is the pain ?
  - Is there a history of recent trauma to the head ?
  - Is there a loss of consciousness ?
  - Do you notice any other symptoms associated with the headache pain ?
  - Do you have any chronic health problems ?

•Onset and severity: ICH: sudden onset and severe

•History of trauma

•Associate symptoms: SAH: stiff neck, transient loss of consciousness, N/V,..

•Presence of chronic disease: anticoagulant therapy, hyponatremia, uremia, hypoglycemia …

Focused Hx

- **What Does the Chronicity of Pain Suggest？**
  - How often do you get a headache? How long have you had this headache？ How long does the headache last？
  - Can you describe any pattern to the headache？
  - Have you had this kind of headache before？
  - Can you tell when a headache is developing？

■A persistent headache for more than 3 months may demonstrate physical findings, such as papilledema, gait or balance disturbance, …neurological S/S.

■A persistent headache for more than 4 weeks without demonstrating neurological S/S is most likely psychogenic. Psychogenic headache is daily. constant., diffused, and difficult to describe.

■Acute-onset headache must be evaluate organic causes. Organic lesion will increase the duration and frequency as lesion progress

■Subacute or chronic headache are usually caused by vascular inflammation or muscle tension.

■The most common food trigger headache are red wine, chocolate, and ripe cheese-food high in tyramine or tryptophan

Focused Hx

- **What Associated Symptom Does the Patient Have？**
  - Do you have any nausea or vomiting？
  - Do you notice any vision changes？
  - Does light bother you？
  - Are you dizzy？

■Vomiting can be a sign of IICP

■Aura of migraine: scintillating scotoma or twinkling spots of brightly colored lights

■Photophobia often present with migraine but not present with tension headache

■One third of migraine experience vertigo.

- Does anyone else in the family have headaches？

Migraine have a positive family history

Focused Hx

- **What Do the Aggravating and Alleviating Factors Suggest？**
  - Does anything make the headache better？
  - Does anything make the headache worse？

Alleviating factor

•Menigeal irritation pain: relieve by recumbent and lying quietly

•Tension headache: relieve by analgesics

•Migraine pain: relieve by rest or sleep

Aggravating factor

•Migraine pain: increase by exertion:

•Cluster headache: worse with lying down

•Tumor: worse in early morning and improve on arising

•Trigeminal neuralgia: produce pain by stimulation of the affected nerve (rubbing the face or chewing)

Diagnostic Reasoning-Focused PE

- Observe the Patient
- Take Vital Signs and Obtain Growth Parameters
- Palpate and Percuss the Skull
- Auscultate the Cranium
- Inspect the Ears, eyes, Nose, Mouth, and TMJ
- Perform Ophthalmoscopy
- Assess Cranial Nerve Function
- Examine the Neck
- Test for Meningismus
- Assess Motor Strength and Coordination of Extremities
- Test Balance and Gait
- Assess Deep Tendon Reflexes
- Have Children Draw a Picture of Their Headache

Lab and diagnostic studies

- Complete Blood Cell Count
- Blood Cultures
- Lumber Puncture
- Erythrocyte Sedimentation Rate
- Skull Radiograph

Q&A