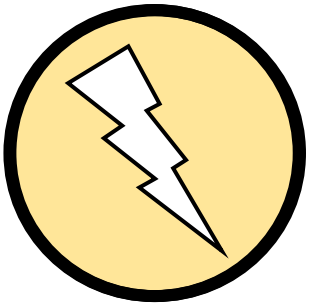
Secondary Headache Disorders

Sudden Onset
(Peak Intensity <1 min)

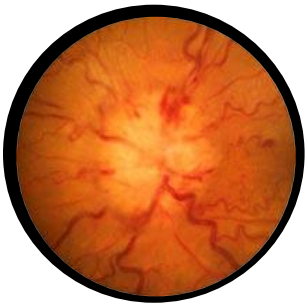


Unexplained Systemic Symptoms
(fever, weight-loss)

Abnormal Neurologic Exam

Change in Existing Headache
(Frequency + Intensity)

New Onset w/ Systemic Cancer, Immunosuppression



Papilledema

Positional
Worse with Standing: Low Pressure
Worse Laying Down: High Pressure

New Onset In Older Age (50+)

Do TP et al. *Red and orange flags for secondary headaches in clinical practice*. Neurology. 2019 Jan 15; 92(3): 134–144.

Ruling Out Secondary Headache Disorders

Choice of Imaging Depends on Disease Suspected

Which Test to Order

- **CT without Contrast**
  - Subarachnoid Hemorrhage
  - Subdural, Epidural Hematoma
  - Osteomyelitis of the Skull
- **MRI without Contrast**
  - Malignancy
  - Chiari Malformation
  - Intracranial hypertension
  - CVA
- **MRI with and without Contrast**
  - Intracranial hypotension
  - Meningeal Carcinomatosis
  - Encephalitis
  - Brain Abscess
  - Metastatic Disease
- **MRV with and without Contrast**
  - Cerebral Venous Thrombosis
  - Transverse Sinus Stenosis
- **MRA, CTA**
  - Saccular Aneurysms
  - Arterial Dissections
  - Reversible Cerebral Vasoconstriction Syndrome

PCMigraine.com

Management of Thunderclap Headache

1 Identify

Headaches that reach peak intensity in less than 1 minute and last greater than 5 minutes

2 Recognize Causes

Subarachnoid or Intracranial Hemorrhage (most common)
Reversible Cerebral Vasoconstriction Syndrome (RCVS)
Intracranial Hypotension
Carotid Dissection
Pituitary Apoplexy
Migraine

3 Send to ER

If headache was experienced within one week

4 Evaluation in ER

Non-contrast CT scan

- Sensitivity 95-99% for subarachnoid hemorrhage if performed within 6 hours of headache onset

Lumbar Puncture

- Looking for xanthrochomia if CT is negative

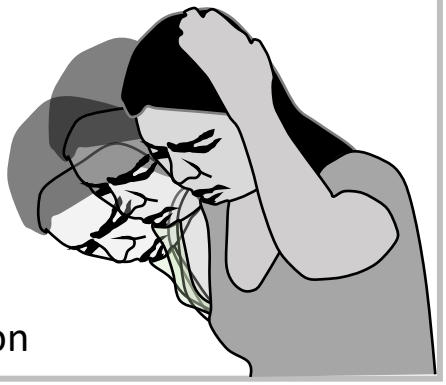
CT Angiogram (CTA)

- May be performed in place of a lumbar puncture to exclude intracranial aneurysm or carotid/vertebral dissection

Recognition and Management of Spontaneous Intracranial Hypotension (SIH)

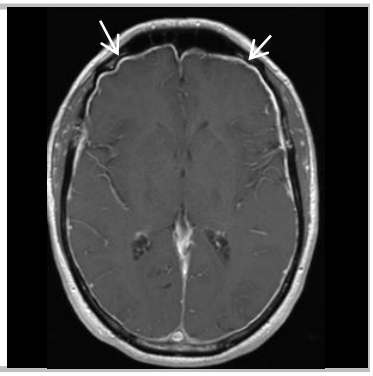
1 Consider the diagnosis…

- New onset or different headache type
- Headache Characteristics of SIH
  - Worse upon standing
  - Improved with lying down
  - Gone upon awakening
  - Headache worsen as the day goes on



2 Order appropriate imaging

- MRI of the head with and without contrast
- MRI findings of SIH
  - Smooth dural enhancement
  - Flattening of the pons
  - Brain Sag



3 Non targeted blood patches

- Consider non targeted blood patches if…
  - Headache suggestive of SIH or
  - MRI shows smooth dural enhancement
- Non targeted patches are placed in a central location (T12-L1) when the site of leak is unknown
- If headaches stop after 1 or 2 non targeted patches no need for further interventions

4 Myelogram + Targeted Blood Patches

- If non targeted blood patches fail
  - Order CT myelogram to determine definite or potential leak sites
- Perform targeted blood patch at these sites

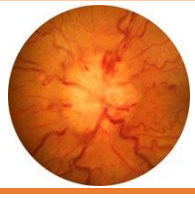
Recognition and Management of Idiopathic Intracranial Hypertension (IIH)

1 Consider the diagnosis…

- Headache in an overweight patient (BMI 30+)
- Characteristics of high-pressure headaches
  - Worse lying down
  - Worse with coughing, sneezing, bearing down
  - Awakening headaches or worse in the morning
- Pulsitile tinnitus common

2 Physical examination

- Papilledema usually seen
- Can also occur without papilledema as well



3 Order appropriate imaging

- MRI without contrast
  - Findings include empty sella, dilated optic nerve sheaths

4 Lumbar puncture

- If MRI normal with the exception of IIH findings, then consider lumbar puncture
  - Opening pressure $\geq$ 25 cm suggests diagnosis
  - CSF pressures between 20 – 24 can rarely be a/w IIH

5 Treatment

- Consider diuretics such as acetazolamide or others
- Sometimes shunts or transverse sinus stenting may be employed in refractory cases