Headaches and Brain Tumors

Didactic Session 3-Summary
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Headache myths-ALL FALSE

- Migraine headaches are rare
- Everyone with a migraine has visual manifestations
- Tension headaches are common
- Brain tumors usually cause headaches
- Patients with headaches need glasses
- Headaches should be treated with over the counter medications
- Narcotics are the mainstay of headache treatment
- Everyone with a headache needs a head CT
RED FLAGS – EMERGENCIES

- SUDDEN ONSET OF WORST HEADACHE EVER
- HEADACHE WITH FOCAL NEUROLOGICAL DEFICITS [INCLUDES PAPILLEDEMA]
- NEW ONSET HEADACHE IN PERSON > 50
- HEADACHE WITH MENINGEAL SIGNS
- HEADACHE IN IMMUNOCOMPROMISED PERSON
- HEADACHE WITH FEVER
- HEADACHE ASSOCIATED WITH A SEIZURE
1 RED FLAG DEMANDS THESE:

- Head CT without contrast
  - Evaluate for hemorrhage or mass lesion
  - If found – consult neurosurgery
- Lumbar puncture if head CT negative
  - Head CT negative in 10% of acute subarachnoid hemorrhages (SAH)
  - LP demonstrates yellow tinged fluid (xanthochromia) for 2-3 weeks
  - LP will also evaluate for meningitis and increased pressure
- If temporal arteritis is suspected
  - Order ESR, C reactive protein and start prednisone 40 mg daily
Most headaches are vascular

- Migraine is most common
  - Females > males
  - Nausea, vomiting, photophobia are common
  - Improved by turning off lights and withdrawing
- Cluster headache is uncommon
  - Middle aged men (many with blond hair, blue eyes)
  - Occur commonly between 2-6 AM
- Analgesic overuse headache
  - Common in people with migraine
  - Analgesic withdrawal precipitates pain
Temporal arteritis

- Occurs after age 50
- Common symptoms
  - Jaw claudication
  - Temporal headache/temporal artery tenderness
- This is a clinical diagnosis – do not base it on the labs
  - ESR may be elevated (often normal if taking NSAIDs)
  - C reactive protein (may be elevated for many reasons)
- If suspected begin prednisone 40 mg daily
- Schedule temporal artery biopsy within 2 weeks
Brain tumors (2 Main Types)

- Arise from CNS neural elements
  - Quietly dissect their way through the neuropil
  - Become very large without disturbing architecture
  - Tumor size >>> Signs + Symptoms
  - Example: Astrocytoma

- Non-CNS Cells (metastatic tumors/adjacent tumors)
  - Steal all the blood supply
  - Shove the brain cells out of their way
  - Signs + Symptoms >>> Tumor Size
  - Example: Metastatic lung cancer
Beware the exception: Melanoma

- Melanocytes are derived from neural crest
- Melanomas rarely disrupt the surrounding neuropil
- Much more likely to hemorrhage than primary CNS tumors
Two major types

Primary CNS tumors (sophisticated)
- Minimal CNS disruption
- Large at time of diagnosis
- Examples
  - Glioma
  - Neurinoma
  - Astrocytoma
  - Oligodendroglioma
- Usual presentation
  - Cognitive changes
  - Subtle neurological findings

Non-CNS resident tumors (unsophisticated tumors)
- Significant CNS disruption
- Small at time of diagnosis
- Examples
  - Metastatic tumors
  - Meningioma
  - Pinealoma
  - Ependymoma
- Usual presentation
  - Focal deficits
  - Seizures
Approach to brain tumors

- MRI is the definitive imaging study
- Pathological diagnosis is required
  - Open biopsy/resection for single accessible tumor
  - Stereotactic biopsy for large or difficult to reach tumors
- Surgical treatment:
  - Solitary non-resident tumors: RESECTION
  - Resident tumors: Size reduction/full removal rarely possible
- Post-surgical treatment usually involves chemotherapy ± radiation
Summary

- Headache patients should be evaluated for a potential emergency
- A complete neurological examination includes:
  - Funduscopy
  - Palpating the temporal arteries in patients > 50
- ANY RED FLAG REQUIRES:
  - Head CT (and if normal...)
  - LP
- Brain tumors can be sorted into CNS and non-CNS resident tumors by history and imaging