History

• Early 50’s female presented to KUMC with 6 days retro-orbital pain in right eye and intermittent horizontal binocular double vision when looking to the right.

• Associated symptoms
  – Severe headache, vertigo, burning and abnormal sensation on right side of head, stiffness on right side of neck, worse with movement

• PMH of HTN and DM not currently treating due to lack of insurance
Headache History

• She is not a headache person but over last 6-8 months had new onset of throbbing headaches on the right. Associated with nausea, photo/phonophobia, and lasting up to 24 hours.

• Some relief with Tylenol and Ibuprofen or laying down in a cool dark room.

• She has 2-3 per week.
Exam

• Vitals – temp 36.9, pulse 68, resp. 17, BP 135/81, O₂ 98%
• Mental status normal
• Cranial nerves normal
• Motor 5/5 proximal distal
• Sensory – decreased pinprick on right face and leg
• Reflexes 2/4 – toes down-going
• Coordination normal
• Gait normal
Where What
Differential Diagnosis

- Secondary headaches
  - SAH
  - RCVS
  - Cavernous/sinus venous thrombosis
  - Occipital AVM
  - Carotid or vertebral artery dissection
  - Chronic Subdural Hemorrhage
  - Meningitis
  - Mass
- Primary headaches
  - Migraine
  - Tension Type Headache
  - Trigeminal Autonomic Cephalalgias
  - Cluster headache
  - Paroxysmal Hemicrania
  - SUNCT/SUNA
Labs

- Hgb 14.7
- WBC 6.2
- Plt 190
- Sodium 134
- Potassium 3.9
- Chloride 102
- CO₂ 26
- BUN 22
- Creatinine 0.69
- Glucose 291
- Hgb A1c 13.6

- LP
  - clear
  - RBC 0
  - WBC1
  - Glucose 140
  - Protein 35
  - No xanthrochromia
Most common sites of intracranial saccular aneurysms

- Incidence:
  - <1%
  - 10%
  - 20%
  - 30%

- Artery involved (incidence):
  - Pericallosal artery (4%)
  - Anterior communicating artery (30%)
  - Lateral carotid artery bifurcation (8%)
  - Middle cerebral artery (20%)
  - Posterior communicating artery (25%)
  - Basilar tip (7%)
  - Posterior inferior cerebellar artery (3%)
Red Flags

- Abnormal neurologic exam or symptoms that are atypical for aura, especially dizziness, lack of coordination, numbness or tingling, or worsening of headache with the Valsalva maneuver
- Increasing frequency of headaches or a change in headache quality or pattern
- Headaches that awaken patients from sleep
- New headaches in patients over 50
- First headache, worst headache, or abrupt-onset headache
- New headache in patients with cancer, immunosuppression, or pregnancy
- Headache associated with loss of consciousness
- Headache triggered by exertion
- Special consideration should be given to a person who is receiving anticoagulation.
Migraines and Aneurysms

• Migraines as the presenting signs of aneurysms have been reported in association with fusiform middle cerebral artery aneurysm and saccular intracranial aneurysms.

• Unruptured saccular intracranial aneurysm cause a marked increase in the prevalence of migraine without aura but not in the prevalence of other types of headache.

• Hypothesis that increased sensory input from the sensory nerve endings around the aneurysms may sensitize the CNS and decrease threshold for spontaneous migraine attacks.
28 yo with 15 years headaches that resolved after sacrifice of carotid
Theory

• Many mechanisms of migraine have been proposed
• Abnormal release of neuropeptides including calcitonin gene-related peptide, Substance P and neurokinin
• Leads to sensitization the trigeminal system to the pulsatility of cranial vessels
Outcome in our patient

• To OR for right craniotomy and right MCA aneurysm clipping

• She states headaches resolved, and she has minimal pain from the incision. Immediately after surgery she noted her headaches where gone, as well as, her blurred/double vision and dizziness
Questions?
References

• Lebedeva ER, Gurary NM, Sakovich VP, Olesen J. Migraine before rupture of intracranial aneurysms. The journal of headache and pain 2013;14:15