A HEADACHE/CEPHALAGIA

- Pain around forehead
- Mild, dull pressure
- Incidental, non-recurring
- Typically short lived
- Not usually accompanied by other symptoms
- Treatable with medicine, rest, and water
THE HEADACHE

- Pain in different locations of the Head
- Exquisite Pain
- Reoccurring Pain
- Can go on and on and on
- Other associated symptoms
- Treatable sometimes and sometimes NOT

UNDERSTANDING HEADACHES

- How many of you have headaches?
- How many of you have had Complaints from patients about headaches?
  - Pretty common complaint.
  - We are Eye Doctors and they are complaining because they think their eyes may be causing the headaches or their Doctor does.
- What Causes them?
- What are they from?
- What are some Questions to Ask?

BECAUSE WE GET SO MANY COMPLAINTS

- MOST headaches are NOT Visual BUT:
  - We have a responsibility to patient
  - We need to r/o sight/life threatening Sx
  - We need to refer appropriately
HEADACHE EPIDEMIOLOGY
- Most Common Complaint – 70% are Women.
- 85% of the US population had significant headaches
- 1 out of 3 people have had a severe headache
- Many headaches are felt around the eyes but UNCOMMON to be of ocular origin and majority with primary C/O do NOT have a serious medical cause for the problem.
- More common in Females than Males (3:1)
- 3-7% of ER visits CC headache, 50% Tension, only 8% potentially serious, and 1% life threatening (SAH).
- Primary Headache, Secondary Headache

WHAT CAUSES A HEADACHE?
- Inflammation – Under lying Disease, Sinus, Teeth, Meningitis
- Vascular – HBP, Blood Flow Changes
- Traction – Tumors, Abscesses
- Muscle Contraction – Muscles of the Face, Tension
- Hormones – Changes
- Vision - Limited

GENERAL COMMON HEADACHES
- Tension/Stress
- Migraine
- Cluster
- Sinus
PRIMARY HEADACHE

- Tension/Stress: 69%
- Migraine: 16%
- Idiopathic Stabbing: 2%
- Exertional: 1%
- Cluster: 0.1
- 89.0% 

SECONDARY CAUSES OF HEADACHES

Symptom of an Underlying Disease

- Hypertension: Medication
- Post Traumatic: Hematoma
- Dental: Ear
- Hemorrhage: Intracranial tumors
- Infections – Viral/Bacterial: Trigeminal Neuralgia
- Sinus Inflammation: Arteritis
- Glaucoma: Withdrawal/Drugs

SECONDARY HEADACHE

- Of the 11%:
  - Systemic/Infection: 63%
  - Head Injury/Trauma/TBI: 4%
  - Vascular disorders: 1%
  - Subarachnoid Hemorrhage: <1%
  - Brain Tumor: 0.1%
  - Trigeminal Neuralgia: <0.01%
  - Other: Substance WD, Teeth, Ears, TMJ
APPROACH TO HEADACHES
- Location
- Timing
- Character
- Associated Symptoms
- Alleviating/Aggravating
- Environmental/Setting
- Past medical Hx
- Family Hx
- Social Hx
- Sexual/Spiritual Hx
- Review of Systems

LOCATION
LOCATION, LOCATION, LOCATION
LOCATION
• SITE AND SPREAD OF THE PAIN
  – Frontal
  – Temporal
  – Occipital
  – Unilateral/Bilateral
  – Around Eyes
  – Behind Eyes
  – Base of Skull

TIMING
• Why consulting now
• When it began/Onset
• How long did it last
• How many times in the past/Frequency or Pattern
CHARACTER

• Intensity/Severity
• Quality
• Interfere with Activities
ASSOCIATED SYMPTOMS
- Blurry Vision/No Vision
- Nausea, vomiting
- Dizziness, Diplopia, Eye Pain
- ENT problems
- Dental problems
- Fever
- Anxiety or depressive symptoms
- Raised ICP

ALLEVIATING/AGGRAVATING
- What makes it better and what makes it worse
- Pain relievers
- Caffeine
- Exercise/Activity
- Cough
- Cold/Heat
- Touch
ENVIRONMENT/SETTING
- What were you doing
  - Computer Work
  - Eating
  - Drinking
  - Exercising
- Where were you at
  - Bright lights or dim
  - Angry/Depressed/Happy/Calm
PAST MEDICAL HX

- Allergies
- Hospitalizations
- Illnesses/Immunizations
- Surgeries
- Trauma
- Oral medications
- Reproductive history/contraception
- Youth illnesses
FAMILY HX

- Genetic
- Others with similar problems
- Alive or Deceased
- Determine the Risk Factors

SOCIAL HX

- Health Behaviors
- Personal Choices
- Smoking
- Drugs
- Drinking
SEXUAL/SPIRITUAL
• Medications
• Partners
• Practices
• Protection from STDs /Past history of STDs
• Prevention of pregnancy
REVIEW OF SYSTEMS

- Presence or absence of symptoms / All symptoms / Present illness
- General
- Head and Neck (H&N)
- Cardiovascular (C/V)
- Genito-Urinary
- Ob/Gyn/Breast
- Endocrine
- Musculoskeletal
- Skin and Hair

Vision
Pulmonary
Gastrointestinal
Hematology/Oncology
Neurological
Infectious Diseases
Mental Health

TENSION/STRESS

- Most Common Type!!!
- Front of head, temples, middle/top of head
- Dull, aching and vise like, non-pulsating – mild to moderate. Like a band squeezing the head.
- Bilateral and diffuse, worse at end of the day.
- No nausea or vomiting.
- Occasionally decreased appetite, or photophobia.
- NOT aggravated by physical activity – will actually help.
- NOT attributed to another disorder.
Causes of tension headaches:

- Hunger
- Lack of sleep
- Stress
- Overexertion
- Depression and anxiety
- Dehydration

SYMPTOMS OF STRESS

- Anger
- Loss of Appetite
- Tension and Irritability
- Difficulty making Decisions
- Crying
- Sleep Problems
- Loss of Interest in Activity
- Trouble Concentrating
- Headaches, Stomach Pain
- Fear and Anxiety
- Increased Use of Alcohol and Drugs
- Disbelief and Shock
- Sadness and Symptoms of Depression
MIGRAINES
• Pain on One or Both side(s) of head.
• Intense, pulsing, or throbbing
• Can last for days
• Nausea and dizziness and light sensitivity
• Flashing lights and blind spots
• Commonly recurring

CAUSES OF MIGRAINES
• Exact Cause is Unknown but the Thinking is:
• Result of abnormal brain activity affecting nerve signals, chemicals/hormones and blood vessels in the brain.
• Triggers:
  - Hormonal – Period, Serotonin
  - Emotional – Stress, Anxiety, Tension, Depression, Excitement
  - Physical – Tired, Posture, Exercise, Low Blood Sugar
  - Dietary – Alcohol, Caffeine, Specific Foods/Dairy, Missed Meals
  - Environmental – Bright lights, Flickering Screens, Strong Smells, Changes in Weather, Smoking, Loud Noises
  - Medicinal – Sleeping Tabs, Contraceptive, Hormone Replacement
MIGRAINE SYMPTOMS AND STAGES

- Stage 1
  - Prodrome: Before the pain hits, 50% of sufferers – light/sound sensitivity, irritability and lack of appetite.

- Stage 2
  - Aura: Up to ONE hour before the headache with changes in visual perception or loss of vision.

- Stage 3
  - Headache: Moderate to Severe up to THREE days, One/Both sides of head.

- Stage 4
  - Postdrome: Several days, “hangover”, irritable and fatigued, mood changes.

HOW TO GET RID OF A MIGRAINE FAST
Cluster

- One of the most painful types. Described as sharp, penetrating, or burning.
- Occurs in cyclical patterns or clusters.
- Excruciating pain in or around ONE eye, drooping eyelid, excessive tearing, miotic pupil, and stuffy/runny nose on that side.
- Sensitive to light and sound. Aura, Restlessness, paleness to face, nausea, and exhaustion afterwards.
Watery eye, drooping eyelid, runny nose

The difference between Cluster Headache and Migraine

Don’t stress about your eyesight failing as you get older. It’s nature’s way of protecting you from shock as you walk past the mirror.
SINUS
• Inflammation of the lining of eight sinus cavities.
• Facial pressure/pain - Frontal deep chronic ache around the eyes, cheekbones, forehead and bridge of the nose.
• Leaning over, or sudden movement, or exercising may make the headache worse.
• Yellow or green discharge, pain in upper teeth, bad breath, coughing, nasal congestion.
TRIGEMINAL NEURALGIA

- Sudden, severe, unilateral, brief (few seconds – two minutes), shock-like, usually confined to one part of one division of the Trigeminal Nerve V (Damage). Rarely crosses the midline.
- Pain paroxysms (sudden, violent) will recur over days, weeks, or years. Periods of time when symptom-free.
- Sensitive to light and sound. Nausea and vomiting.
- Do not occur during sleep.
- Trigger area on the face with slight touch, wind, eating or speaking.
- Suicide Disease
UNKNOWN/IDIOPATHIC

- Migraines are of unknown Causes
- Pain Structures in the Head/Brain vs No Pain Structures
- Have to treat the Symptoms
- New daily persistent headache = NDPH
THE EYES

THE EYES/OCULAR CAUSES OR SYMPTOMS

- Refractory error and eye muscle weakness
  - Binocular Abnormalities
    - Accommodation, convergence insufficiency, lack of fusional capacity
  - Muscle contraction – ciliary
- Secondary to Diseases of the Eye
  - Angle closure glaucoma, iritis, keratitis, ocular ischemic syndrome, scleritis
- Systemic disorders having prominent ocular symptoms
  - Raised intra cranial pressure, temporal arteritis, migraine, psychogenic
BINOCULAR VISION DYSFUNCTION

SYMPTOMS:
- Headaches
- Fatigue
- Facial weakness
- Sensory changes, especially in arms and legs
- Nystagmus
- Problems seeing things on the periphery of vision
- False vision
- Double vision
- Difficulty seeing.
- Excessive eye movement.
- Eye strain
- Headaches
- Eye pain
- Problems reading

Symptoms associated with reading or other visual tasks.
OCULAR CONCERNS
- Uveitis/scleritis
- GCA
- Optic Neuritis
- Orbital Tumor
- Orbital Cellulitis
- Supra orbital neuralgia
- Chiari malformation

- Pituitary Tumor
- Cranial Nerve Palsy
- Aneurysm or sah
- High ICP - papilledema
- Carotid ischemia and OIS
- Carotid dissections

“RED FLAG” HEADACHE SYMPTOMS
- Sudden Onset or Change: Worst, Waking Up, Exertion
  - SAH, Cerebral Venous Sinus Thrombosis, Pituitary Apoplexy, Meningitis
- Focal Neurological Sx: Seizure, Syncope, Conscious/Cognitive/Memory
  - Intracranial Mass Lesion, SAH
- Constitutional Sx: Weight Loss, Malaise, Rash, Meningism
  - Neoplasm
  - Meningoencephalitis
- Raised Intracranial Pressure
  - Intracranial Mass Lesion
- New Onset > 60 years
  - Temporal Arteritis

SUPRA ORBITAL NEURALGIA/SWIMMERS/GOGGLE
- Unilateral Pain in the Forehead, Tinel's Sign
- Due to location confused with Migraine, Cluster, Sinus
- Caused by Damage of Nerve by Trauma, Pressure, Entrapment, Fluid retention, Eyeglasses.
- May need to Treat the Supra Trochlear as well.
ORBITAL CELLULITIS

- Erythema, Edema, Tenderness, Fever, Warmth
- Vision Changes/Diplopia/Limited EOM
- Ophthalmoplegia
- Proptosis
- Chemosis
- Reduced Visual Acuity
- Abnormal Light Reflexes
STAGING OF ORBITAL CELLULITIS

- I. Preseptal: Eyelid swelling and erythema
- II. Inflammatory Edema: Edema, Proptosis, Chemosis, Decreased EOM
- III. Subperiosteal Abscess: Vision Loss, Pus, Sinus Involved
- IV. Orbital Abscess: Ophthalmoplegia, Vision Loss
- V. Cavernous Sinus Thrombosis: Displacement, Ophthalmoplegia, Beginning to affect other eye, Cranial Nerve involvement (III, IV, V, VI)

CHIARI MALFORMATION TYPES

- I. Fetal Development – characterized by downward displacement by more than 4 mm. of the cerebellar tonsils beneath the foramen magnum into the cervical spinal canal.
- II. Downward Displacement of the Medulla, fourth ventricle and cerebellum, as well as the elongation of the pons and fourth ventricle. Myelomeningocele exclusively.
- III. Cerebellum/Brainstem pushing out. High Mortality – Rare – Severe.
SYMPTOMS OF CHIARI MALFORMATION

• Occipital Headache at base of skull. Worse when coughing, sneezing, or straining. Looking down/reading.
• Severe neck and head pain.
• Double or Blurred Vision.
• Loss of muscle strength in the hands and arms.
• Collapsing to the ground d/t muscle weakness.
• Balance problems, dizziness, spasticity
• Sensitive to Bright lights.

What Causes Chiari Symptoms?

- Direct compression of the cranial nerves
- Direct compression of the brainstem
- Direct compression of the cerebellum
- Disruption of the natural flow of CSF
- Elevated CSF pressure in the skull
- Damage to nerves in the spine
TREATMENT OPTIONS FOR CHIARI

- Referral to Neurologist
- 1. Wait and See – If Mild or no Sx, MRI’s, Regular Check ups
- 2. Treat Each Sx Individually – Not severe enough for Surgery
- 3. Surgery – Sx Severe or getting worse, Posterior fossa decompression

SCLERITIS/UVEITIS CLASSIFICATIONS

- Episcleritis: Simple and Nodular
- Scleritis: Disturbs Sleep w Headache and Pain
  - Anterior: Diffuse, Nodular, Necrotizing both with and without inflammation (perforans)
- Posterior Scleritis/Uveitis - Uncommon

EPISCLERITIS

- Blanch with adrenergic agents
- Salmon pink and movable vessels
- Minimal Pain
- Sectorial 70% of time.
- Does not Progress
- Oral or Topical NSAID’s, infrequently Steroids
- 2/3 Reoccur but clears.
SYSTEMIC DISEASES ASSOCIATED WITH SCLERITIS

- Rheumatoid Arthritis – Rosacea – Chlamydia
- Systemic Lupus – HSV – HSZ – Mumps
- Ankylosing spondylitis – Churg-Strauss – Gout – Fungus
- Reiter's Syndrome – Behcet's – Parasites (Acanthamoeba)
- Psoriatic arthritis – IBS – GCA
- Relapsing Polychondritis – Cogan's Syndrome
MANAGEMENT OF SCLERITIS
• This is an Urgent need for referral and Treatment.
• Referral for the Ocular Treatment is Obvious
  the rest is:
• Dependent on Underlying Medical Condition
• Posterior Scleritis is uncommon.
  - Fundus findings: disc swelling, macular edema, choroidal folds, exudative retinal detachment, choroidal detachments.
ORBITAL TUMOR CLASSIFICATION BY ORIGIN

- **Primary**
  - Lesions from the Orbital Tissues
    - Conjunctiva, Sclera, EOM, Iris, Retina

- **Secondary**
  - Lesions from the Neighboring Cavities and Tissues
    - Sinuses, Periosteum

- **Metastatic**
  - Lesions via Hematogenous or Lymphatic Spread from other areas.
    - Breasts, Lungs

INCIDENCE AND EPIDEMOLOGY

- Rare
- Male = Female
- Adults
  - Melanoma and Lymphoma most common
- Children
  - Retinoblastoma and Medulloblastoma most common
- Metastases are more common than Primary – usually from the Breast or Lung Cancers
PITUITARY TUMOR SYNDROME

• Ophthalmologic Signs
  - Decreased Visual Acuity, Visual Field Defects, Exophthalmos; Rare

• Neurologic Symptoms
  - Headache, Seizures, Meningeal signs, Nerves III, IV, VI which cross the Cavernous Sinus

• Radiological Signs
  - Enlarged Sella Turcica, Acromegaly
OPTIC NEURITIS CLASSIFICATIONS

• Retrobulbar neuritis – Normal Disc
  – Most common, Demyelination – MS, Lyme, Sinus Related
• Papillitis – Edema and Hyperanemia
  – Uncommon - Syphilis
• Neuroretinitis – Papillitis and Macular Star
  – Cat-scratch Fever, Lyme, Syphilis

CHARACTERISTICS OF OPTIC NEURITIS

• Inflammation of the Optic Nerve – Pain with Eye Movement
• Swelling of the Optic Nerve and Enlargement of the Blood Vessels
• Vision Loss in the affected Eye from Slight Blur to Complete Blindness
• Vision Loss can be Temporary but Permanent in Some Cases.
• RAPD, Loss of Color Vision, Flashing Lights
• Highly Associated with Multiple Sclerosis
TREATMENT FOR OPTIC NEURITIS

• Most Cases Improve Without Treatment
• To Prevent the Risk of MS IV Steroids are given.
• IV Steroids can also speed Visual Recovery but cannot restore lost Vision.
• If IV Steroids did not work and there is Vision Loss then Plasma Exchange Therapy is tried.
HIGH ICP - PAPILLEDEMA
MODIFIED FRISEN SCALE

- Stage 0 – Normal Optic Disc
- Stage 1 - Minimal Edema – Halo Subtle, Obscure Retinal Details
- Stage 2 – Low Papilledema– Nasal Elevation, No Vessels
- Stage 3 – Moderate Papilledema– Obscure Few Vessels, Elevation
- Stage 4 – Marked Papilledema – Obscure the disc, Full Elevation
- Stage 5 – Severe Papilledema – Obscure All Vessel on and leaving
- Almost ALWAYS Bilateral!!! No RAPD  VF = Enlarged Blindspot.
ARTERIC ANTERIOR ISCHEMIC OPTIC NEUROPATHY OR GCA

- OVER 50 YO – Complete Vision Loss,
- Headache, Vision Loss, Diplopia, Jaw Csteification, Bruits, VF = Altitudinal Defect
- Loss of Vision by damage to ON d/t Insufficient Blood Supply, CRAO, CR
- Cause is unknown but involves the inflammation of small blood vessels within the walls of larger arteries. Mainly Neck and Head
- Associated with HIV, RA, SLE, PMR
- Dx: Symptoms, Medical imaging, Biopsy, Elevated ESR and CRP
- Tx: Steroids
OCULAR OBSERVATIONS OF AAION

- Diffuse Optic Nerve Edema
- Retinal Ischemia
- Cotton Wool Spots
NON-ARTERIC ISCHEMIC OPTIC NEUROPATHY

- Over 50, More Common
- Sudden Loss of Vision, Mild Pain, Often Bilateral, RAPD, VF = Altitudinal Defect
- Cardiovascular Risk with "crowded" Optic Discs, A Stroke to the Optic Nerve, Hyperemic
- Vision can improve over time.
- Associated with Diabetes, Hypertension, Sleep Apnea, High Cholesterol
- Tx: Steroids
ANEURYSM OR SAH

- Thunder Clap Headache = Worst Headache in My Life
- Photophobia and Visual Changes
- Neck Pain
- Nausea and Vomiting
- Loss of Consciences
- Past Hx of Trauma or Brain Injury or Lesions
- Tear in Subarachnoid Veins and Collects Under Arachnoid.
INTERNAL CAROTID ARTERY DISSECTION
• Headache Typical First Symptom
• Face and Neck Pain Precede Other Symptoms by Hours/Days
• Partial Horner’s Syndrome” Miosis and Ptosis
• Cranial Nerve Palsies
• Can Mimic Migraine with Nausea and Vomiting and Aura
ACUTE ANGLE CLOSURE GLAUCOMA
• Sudden Headache
• Visual Disturbance
• Sluggish Pupil, Mid Dilated, Hazy Cornea, Redness, Raised IOP, Papilledema
• Increased IOP causing optic nerve damage in a characteristic pattern that can permanently damage vision if left untreated.

FURTHER TESTING AND REFERRAL
• CT Tumors, Nodes, Fractures
• MRI Detailed Images of Structures, Organs or Soft Tissue
• MRA Blood Flow through Arteries, Aneurysms, Malformations
• MRS Chemical Anomaly, HIV, TIA, TBI, Tumors, MS, Alzheimers
• OCT, PHOTOS

Recap