

Case Presentation PGY3

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History

- **CC:** Headache
- **HPI:** 60yo white female with significant history (Hx) of Breast CA diagnosed (Dx) in 1995 with known pelvic metastases Dx in 2003 and has been undergoing palliative chemo/ radiation therapy since. Pt presented to her PCP in 12/2006 with new onset headache described as a Lt hemicranial throbbing pain. The HA was associated with photophobia/ phonophobia and occasional black spots in her vision. As part of the initial evaluation her PCP ordered and MRI head with Gadolinium to rule out metastases. The Pt was initially given a Rx for Hydrocodone. Since the MRI came back negative for any intracerebral metastases and the Pt continued to have persistent HA she was given Rx for steroids and referred to Neurology for new onset Migraines. Pt reportedly had an LP done which was Nml but no results were available.

History

- On Neurologic evaluation Pt stated the headache was primarily in the left hemicranial region with some tenderness in the left occipital region described as a dull/throbbing 6-7/10 pain. While there was no significant radiation of pain at that time, she continued to have the associated photo/phonophobia and visual spots. The patient also described an episode of left side of tongue and lip weakness which resolved after steroids use. The patient also had difficulty swallowing over the past 4 weeks and choked on some foods. The dysphagia has been worsening over this period. Her husband, an EMT, described these symptoms as “TIA-like” but denies any focal weakness or numbness of her extremities. The patient has no prior history or family history of migraines.

Medical History

- **Allergies:** NKDA
- **Medications:** Hydrocodone; Prednisone; Xeloda; Pamidoranate
- **PMH:** Breast CA Dx 1995 with Pelvic Metastases Dx in 2003
- **SH:** Denies ETOH, Smoking or Drugs
- **ROS:** Weight loss, myalgia, Lt hip pain, headache

Exam

- **General Exam:**

- HEENT: **atrophy Lt side of tongue**
- Neck: supple, no bruits, no rigidity
- Lungs: CTAB
- CV: RRR, no murmurs
- Abd: Nml BS, non-tender
- Ext: no significant edema

Neurologic exam

- **Mentation:** A&O x3, with good concentration, fund of knowledge, and comprehension. Pt had **mild dysarthria** but no aphasia.
- **CN:**
 - II: Nml visual fields, **bilateral papilledema**
 - III,IV,VI: EOMI, pupils equal and reactive,
 - V: Nml facial sensations
 - VII: Nml motor function
 - VII: grossly intact
 - IX, X: palate elevated symmetrically
 - XI: Nml neck rotation
 - XII: **Tongue deviated to Lt**

Neurologic exam

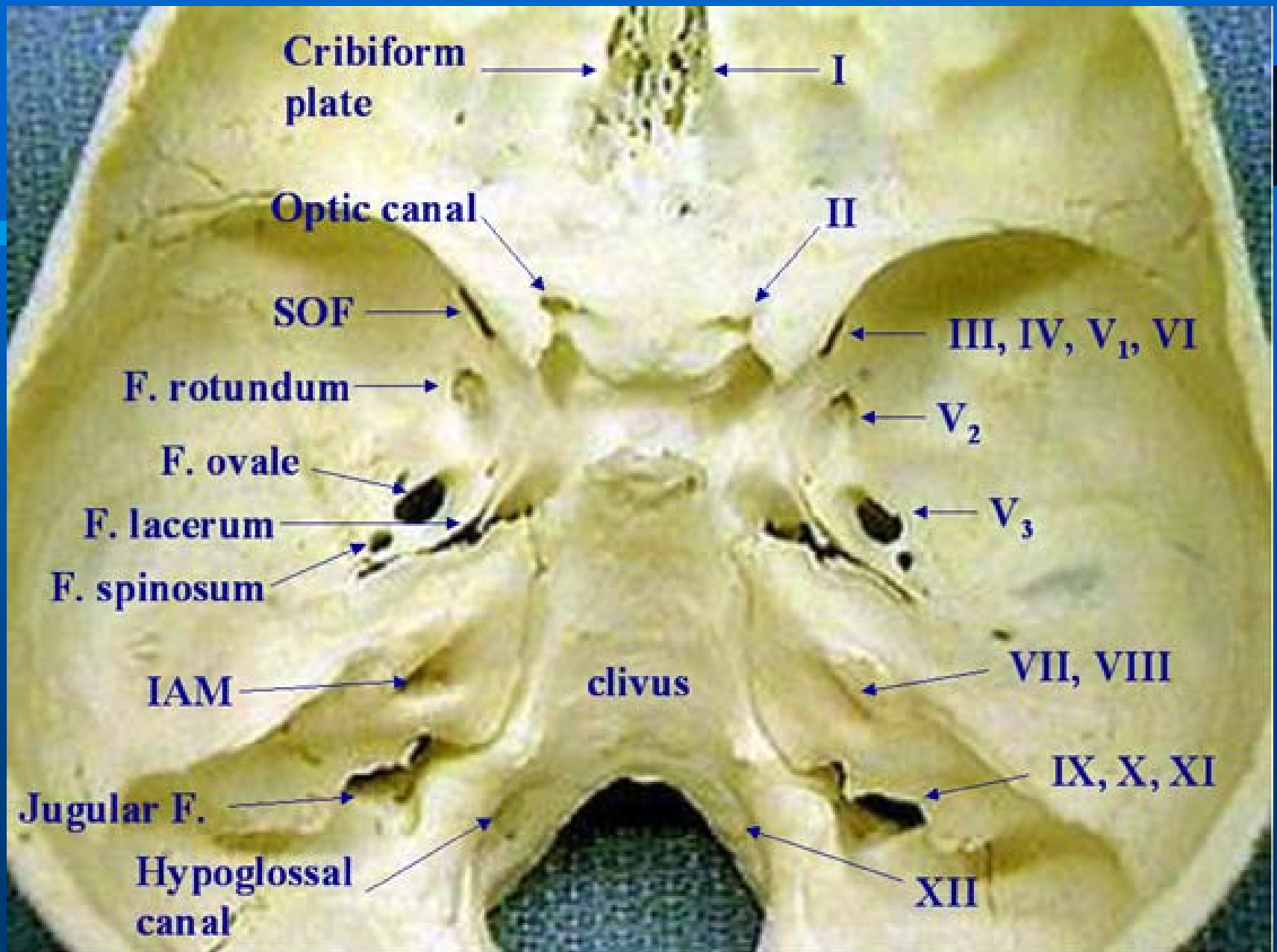
- **Motor:** 5/5 strength in all major muscle groups and no protantor drift. Nml muscle bulk and tone.
- **Sensory:** decreased vibration distally, intact LT, temperature, PP. Cortical sensations intact.
- **DTR:** 2+ and symmetric throughout
- **Coordination:** Nml FNF, HS, and RAM
- **Gait:** walked unassisted with an antalgic gait. Unable heel, toe or tandem walk.

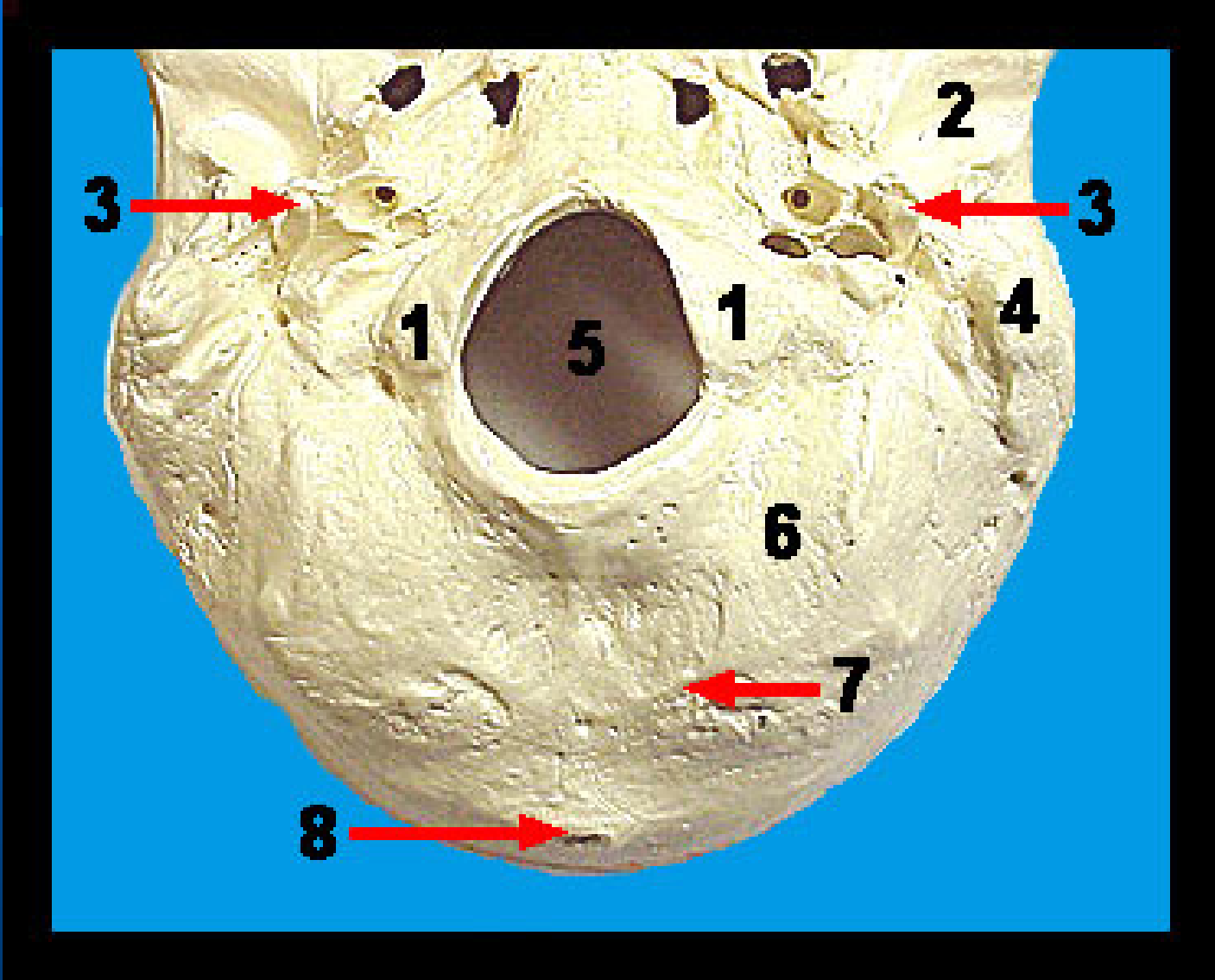
Differential Diagnosis

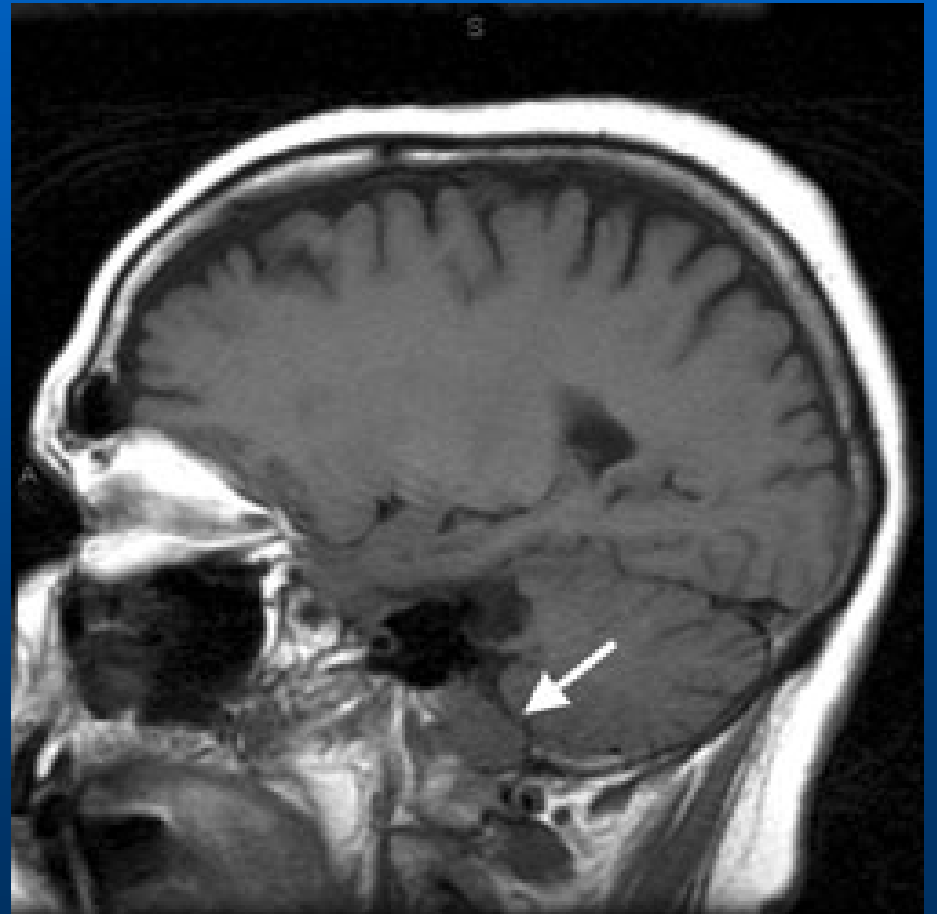
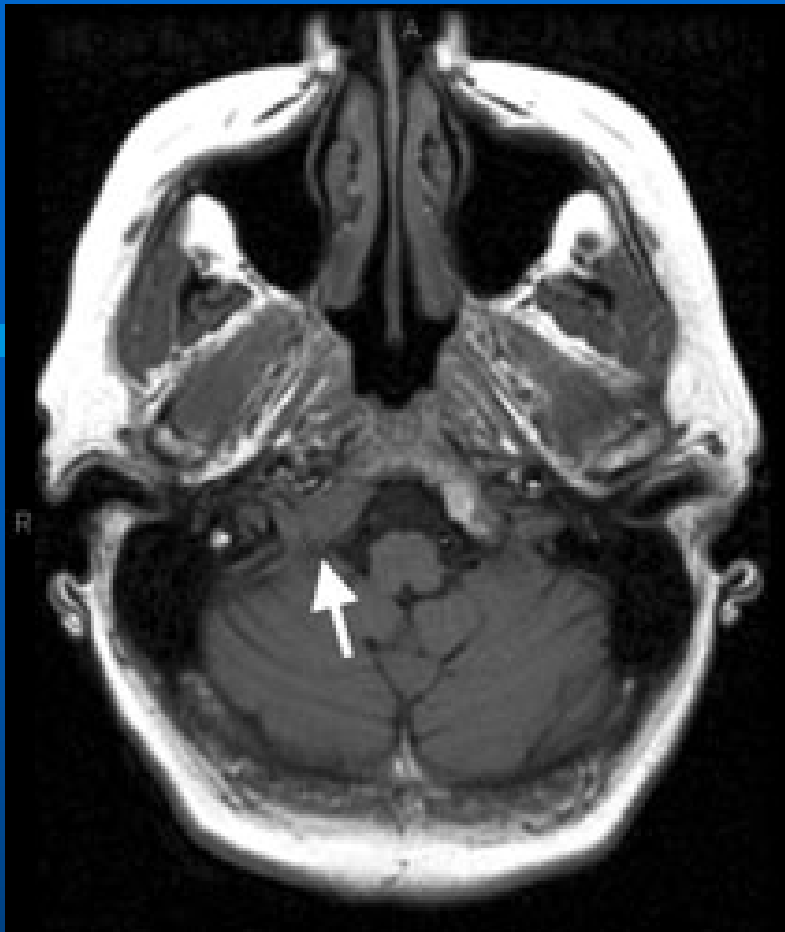
- **Metastatic Breast cancer**
- **Meningeal Carcinomatosis**
- **Stroke/TIA**
- **CNS infection**
- **Primary CNS Tumor**
- **CNS Vasculitis/ Neurosarcoidosis**
- **Post radiation injury**
- **Dural sinus thrombosis**
- **Complex Migraines**
- **Carotid artery dissection**
- **Arnold Chiari Malformation**
- **Trauma**

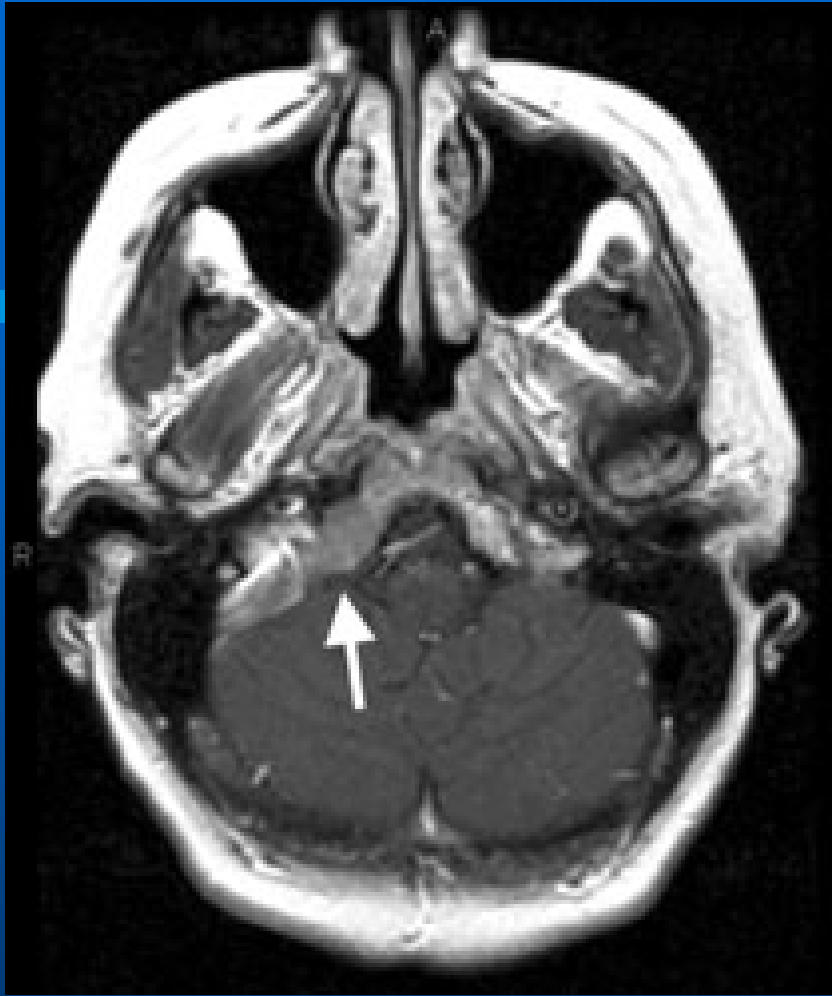
Imaging

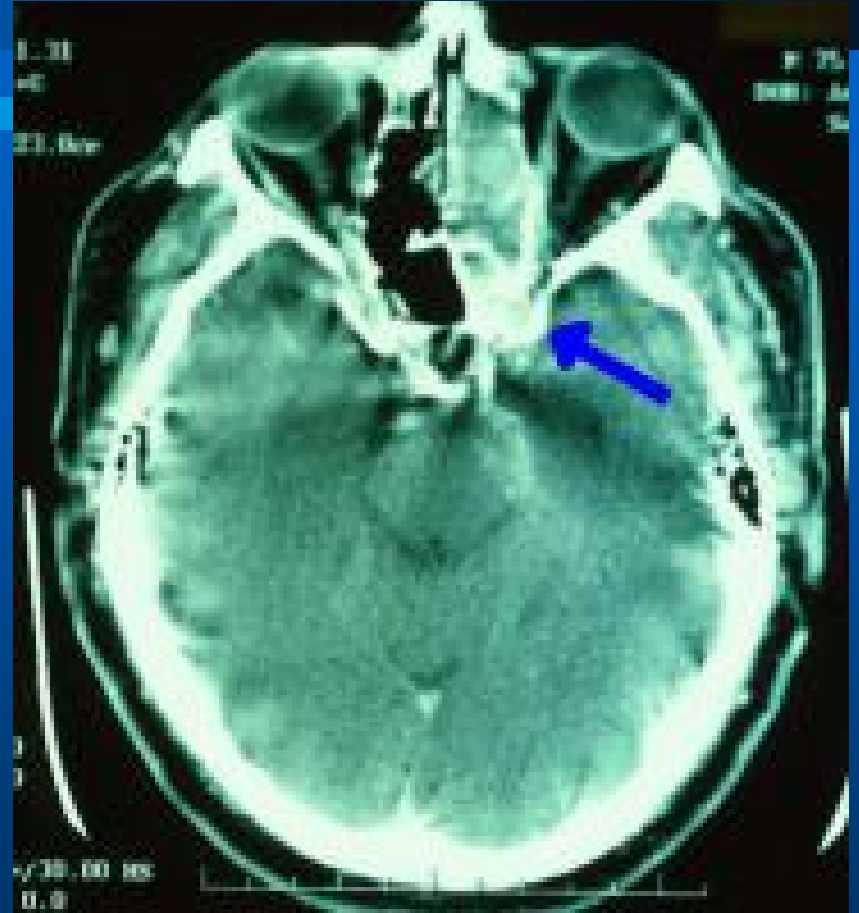
- View MRI











Skull Base Metastases/ Occipital Condyle Syndrome

- Sir James Paget in 1889 reported skull metastases in 36 of 60 post-mortem examination of breast cancer patient.
- Occurs in 4% of cancer patients
- Most common cancers being breast, lung, and prostate
- Tends to be a late complication in the cancer course with 20-100% having know metastases of the primary cancer, especially bony metastases

Clinical

- Primarily causes pain and cranial nerve palsies
- Symptoms vary depending on metastatic locations. Laigle-Donadey et al. have described 5 clinical syndromes:
 - Orbital
 - Parasellar and sellar
 - Middle-fossa
 - Jugular foramen
 - Occipital condyle

Orbital Syndrome

- Very rare and occurs in 2-10%
- Most commonly due to prostate, lymphoma and breast CA
- Symptoms:
 - Supraorbital HA
 - Diplopia
 - Blurred binocular vision
 - Rarely sensory loss in frontal region
- Examination:
 - Proptosis
 - External opthalmoplegia
 - Trigeminal V1 sensory loss
 - Decreased vision

Parasellar and Sellar

- Also uncommon occurs 7-16% of all mass lesions in this region
- Lymphoma is especially common in this region compared to other primary CA
- Commonly effects ocular motor nerves
- Symptoms:
 - Frontal HA
 - Diplopia
 - Facial sensory loss and pain
- Examination:
 - Oculomotor CN palsies (III, IV, VI)
 - No proptosis
 - Facial numbness (V1)
 - Periorbital swelling
 - Vision is usually affected at a late stage

Middle-Fossa Syndrome

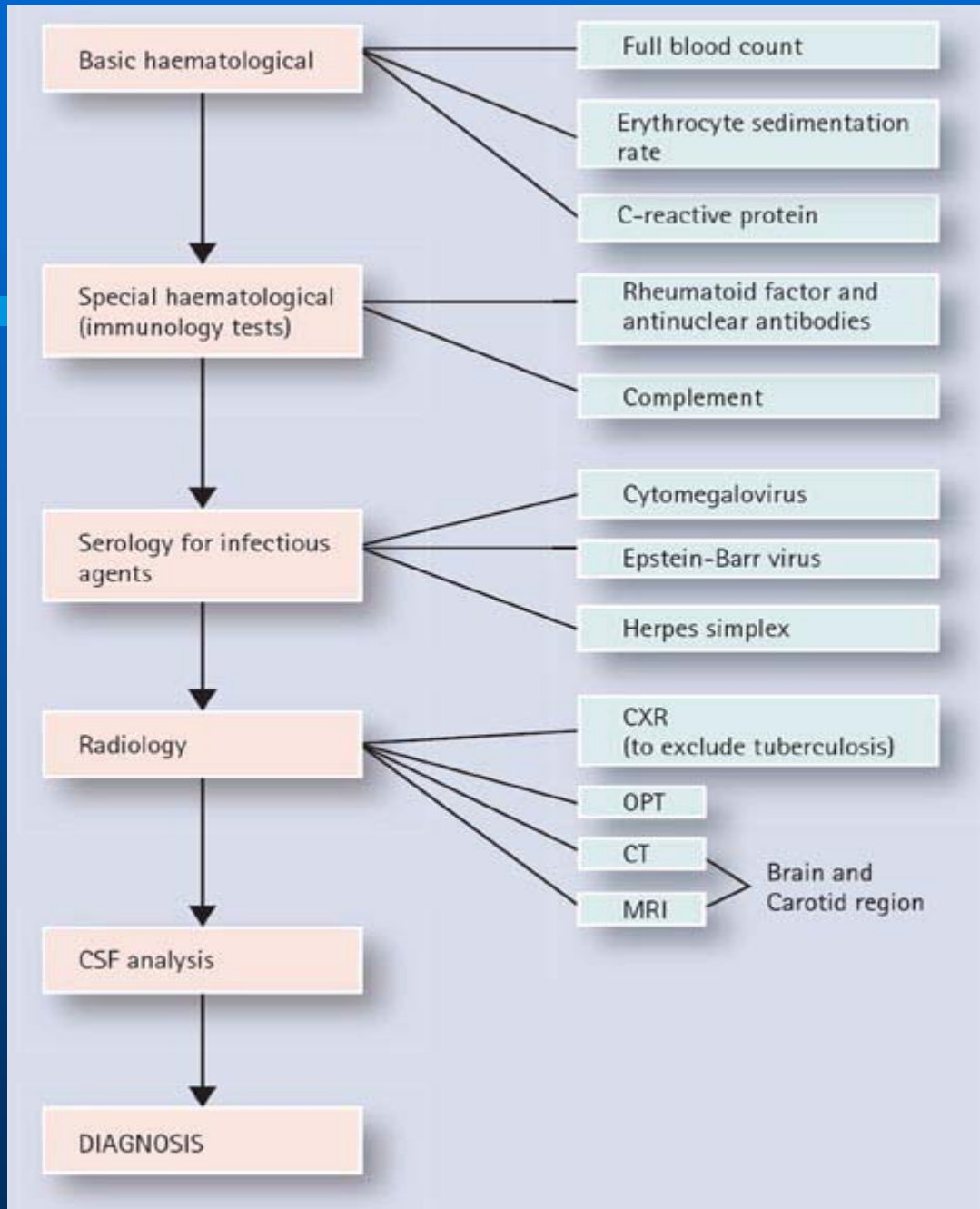
- Varying occurrence anywhere from 6 -35 %
- Symptoms:
 - Facial paresthesias, numbness
 - Atypical facial pain sparing frontal region (lighting-like pain mimicking trigeminal neuralgia)
 - HA is uncommon
- Examination:
 - Sensory loss in Trigeminal (V2-V3)
 - Abducens palsy

Jugular Foramen Syndrome

- Varying occurrence anywhere from 3.5 – 16%
- Symptoms:
 - Occipital pain
 - Hoarseness
 - Dysphagia
- Examination:
 - CN palsies IX, X, XI
 - Horner's syndrome
 - Glossopharyngeal neuralgia with syncope or papilledema (jugular vein or transverse sinus is compressed)

Occipital Condyle Syndrome

- Occurrence varies
- Symptoms:
 - Occipital pain
 - Dysarthria
 - Dysphagia
 - Neck stiffness
- Examination:
 - CN XII palsy
 - Occipital tenderness
 - Ipsilateral tongue weakness and atrophy



Evaluation

- MRI using T1 and T2 sequences with and without gadolinium
- CT with contrast and bone windows
- Radionuclide Bone Scan
- Dual-isotope SPECT scans
- CSF studies for cytology

Prognosis

- Prognosis depends on the primary tumor and overall medical condition at the time of diagnosis
- Often a late complication in the course of CA and the overall prognosis is generally poor
- Laigle-Donadey et al. on their reviews found a median survival rate of 31mo.
- But survival varies depending on the primary CA. With Breast CA having best and Lung/Colon CA with the poorest survival periods.
- Cranial nerve palsies also tend to have a poorer prognosis.

Treatment

- Steroids
- Analgesics
- Radiotherapy
- Chemotherapy
- Surgery

Radiation/Chemotherapy

- Radiation alone or in combination with chemo. depending on the primary CA is the most standard treatment of skull-base metastases
- RT provides excellent relief of pain and regression of CN palsies.
- However the rate of neurological improvement correlates to how soon after the onset of symptoms, RT was started.
- 87% improved after RT if symptoms present < 1 month
- Compared to only 25% if symptoms were present for three months or more.
- Chemotherapy and Hormonal therapy when used in combination with RT can show some clinical improvement at increase median survival especially in Prostate and Breast CA.

Reference

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