Intracranial Tumors

- Brain Tumors
  - Cause is unknown
- Types of Brain Tumors
  - Benign-not cancerous
  - Malignant- Cancerous
    - Requires aggressive treatment
    - Malignant accounts for more than half of brain tumors
  - Primary tumors
    - Originated in the brain, rarely metastasize-remain contained within CNS
  - Metastatic or Secondary Tumors- Most common type
    - Originated elsewhere in the body and traveled to the brain via blood.
- Brain tumors are named for the tissue they originate from:
  - Meningiomas-originate in the meningeal tissue, mostly benign
  - Acoustic Neuroma- Common, usually benign.
  - Pituitary Adenoma- Originates in pituitary gland, usually benign
  - Gliomas-originate from astrocytes which support nerve cells
    - Glioblastoma Multiforme-most common type of glioma
- Gerontologic Considerations
  - Higher risk for malignant & primary tumors and vague s/s (? aging vs tumor)
- Diagnostics
  - Neurologic assessment-identify symptoms and nervous system deficits
  - Imaging-CT, MRI, and PET
  - Tumor tissue biopsy
- Clinical Manifestations
  - Dependent on
    - Size & Location of tumor, also the amount of pressure caused by tumor
      - Frontal Lobe Lesions= Behavior, personality, judgment issues, memory issues
      - Parietal Lobe Lesions= Inability to write, spatial issues, neglect
      - Temporal Lobe Lesions= hallucinations, seizures

        - Occipital Lobe Lesions= Vision changes and seizures
    - Headaches- may be more severe at night or in morning
    - Seizures
    - Nausea & Vomiting
    - Visual Disturbances- Diplopia, Visual Acuity worsening or peripheral vision loss
    - Personality or Mentation Changes/Cognitive issues
- Treatment Options
    - Main goals- Identify tumor type, remove tumor/decrease size, manage ICP
    - May allow for complete or only partial tumor removal depending on type, size, location, and on how tumor infiltrates into brain tissue
    - Craniotomy
        - Burr holes made into skull, flap removed, and tumor excised
        - Risk for postop infection and bleeding
        - Postop cerebral edema is a major concern
    - Radiation
    - Stereotactic Radiosurgery
        - Stereotactic procedures allows for precise access to targeted area, high resolution imaging usually accompanies to aid identification of site
        - Radiosurgery-beam of radiation destroys tumor tissue
        - Less invasive= Less complications
- Chemotherapy
    - Use alone or in combination with surgery +/or radiation
    - Must be able to pass blood brain barrier
    - Temozolomide (Temodar)- PO chemo drug able to cross BBB
- Symptomatic Treatment
    - Headaches- Analgesics
    - Antiepileptics- For seizure activity or prescribed prophylactically
    - Steroids for cerebral edema
- While treatments have progressed outcomes still remain poor.
- Nursing Care

- Risk for ineffective cerebral tissue perfusion R/T cerebral edema, Acute Pain: Headache, Self-Care Deficits, Anxiety

Spinal Cord Tumors

- Classification
  - Can occur within the spinal cord itself, the meninges, or vertebrae (Primary)
    - Usually metastatic-commonly from breast, lung, prostate, and kidney (Secondary)
    - Can be extradural (outside the dura of the spinal cord), intradural-medullary (between the spinal cord and dura) or intramedullary (within the spinal cord)
- Manifestations
  - Depend on the tumors location and rate of growth
    - S+S result from compression on the nerves, spinal cord, blood supply
  - Most common S+S is back pain
    - Radicular pain-results from nerve root compression, worsens with activity
  - Sensory effects
    - Paresthesia's in extremities progresses upward until reaches tumor level
    - Pain, temperature, and touch can also be effected
  - Bladder Function
    - Varies from urgency, to retention, then overflow incontinence
  - Motor effects
    - Can vary from weakness and clumsiness to spastic or flaccid paralysis
- Diagnosis
  - Neuro Exam, X-Ray, MRI , CT, CSF study
- Treatment
  - Surgical resection/removal of the tumor is the preferred treatment method
  - Radiation and chemotherapy in conjunction with surgery can also be considered
- Spinal Cord Compression by a tumor is an emergency.
  - Need to relieve ischemia with corticosteroids