

# Brain Tumors

:by

Assistant lecturers

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## Brain Tumor

- **Brain tumor** is an abnormal growth tissue in the brain.
- **Primary brain tumors** originate from cells and structures within the brain.
- **Secondary or metastatic** , brain tumors develop from structures out side the brain and occur in 10% to 20% of patients with cancer.

Brain tumors rarely metastasize outside the CNS ,but metastatic lesions to the brain occur commonly from the lung ,breast, lower gastrointestinal tract , pancreas and skin(melanomas).

## Types of primary brain tumors


- **Dural meningioma:** Tumors arising from the coverings of the brain
- **Acoustic neuroma:**  
Tumors developing in or on the cranial nerves, **An acoustic neuroma is tumor of eighth cranial nerve**, the cranial nerve most responsible for hearing and balance. The patient usually experiences:
  - 1) loss of hearing, tinnitus, and episodes of vertigo and staggering gait.
  - 2) As the tumor becomes larger, ***painful sensation*** of the face may occur on the same side, as result of the tumors compression of the ***fifth cranial nerve***, most acoustic neuromas are ***benign***, can be surgically removed, and have a ***good prognosis***.

- **Glioma :**  
Tumors originating within brain tissue, the most common type of intracerebral brain neoplasm, are divided into many categories.
  - ❖ **Astrocytomas** are the most common type of glioma usually these tumors spread by infiltrating into the surrounding neural connective tissue and therefore cannot be totally removed without causing considerable damage to vital structures.
  - ❖ **Oligodendroglial** tumors represent 20% of gliomas .
- **Pituitary Adenomas :**  
represent about 7% to 12% of all brain tumors and cause symptoms as a result of pressure on adjacent structures or hormonal change {hyper or hypo function of the pituitary}.
- **Angiomas:**  
Metastatic lesions originating elsewhere in the body. (Masses composed largely of abnormal blood vessels), are found either in or on the surface of the brain.

## **Risk factors of the brain tumor**

- **Being male**
- **Race**
- **Age**
- **Family history**
- **Being exposed to radiation or certain chemicals at work**

## **General sign and symptoms of brain tumor**

- The most common symptoms presented by
  - 1- **Increase intracranial pressure**  **are (ICP).**
  - 2- **Headache** ; not persist and occur in early morning and increase in the intensity during strain such as coughing ,sneezing or sudden movement
  - 3- **Vomiting (projectile vomiting).**
  - 4- **Papilla edema:** - edema of the optic nerve associated blurring of vision and diplopia.
  - 5- **Stupor.**

## **Local symptoms**

### **A. Tumor of cerebellum cause.**

1. Dizziness
2. Staggering gait with tendency to fall toward the side of lesion (ataxia).
3. Muscle incoordination.
4. Nystagmus (involuntary) jerking movements of the eyes.

## **Local symptoms**

### **A. Tumor of frontal lobe.**

1. Personality disorder.
2. Lose of thought or disturbing of thought.
3. Lost of memory or disturbing of memory.
4. Disturbing in the behavior.

### **A. Tumor of temporal lobe**

- Impairment of speech

## **Local symptoms**

### **A. Tumor of posterior fossa.**

- Disturbances of C.N such as
  - ✓ loss of hearing,
  - ✓ Facial paralysis.
  - ✓ Impairment sensation over face.

## **Local symptoms**

### **A. Tumor of parietal**

1. Numbness then weakness in the opposite side of the body.
  2. Unable to know the think (object) by touch.
- Tumor of left parietal lobe lead to apraxia in patient with right hand.

## **Diagnosis of brain tumor**

- **Physical exam**
- **Neurological examination**
- **Brain CT scan**
- **MRI on brain**
- **Angiogram**
- **Spinal tap**
- **Biopsy**
- **PET scan**
- **EEG:** The test records the electrical activity in your brain. It is often done if there are seizures.
- **Angiogram:** This test looks at the blood vessels in the head. It is done if the tumour is close to a blood vessel
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## **How is a Brain Tumor Treated**

- Treatment depends on type of tumor
  - More than one treatment may be used
- 1. Surgery**
  - 2. Radiation therapy**
  - 3. Chemotherapy**
  - 4. Rehabilitation**
  - 5. Targeted therapy**
  - 6. Supportive care**

## **Supportive Care**

To help prevent or control symptoms and improve patient's comfort during treatment

- Steroids
- Anti-seizure (convulsant) medication
- Shunt
- Anti-depressants

## **Brain Cancer Prevention**

- 1- Avoid exposure to harmful environmental chemicals
- 2- Eat a well-balanced diet that include essential nutrients
- 3- regular Exercise
- 4- Quit smoking
- 5- Limit alcohol consumption
- 6- Get regular check-up for screening

## Nursing diagnosis

- 1- Self-care deficit (feeding, bathing, and toileting) related to loss or impairment of motor and sensory function and decreased cognitive abilities.
- 2- Imbalanced nutrition, less than body requirements related to cachexia due to treatment and tumor effects, decreased nutritional intake, and malabsorption
- 3- Anxiety related to fear of dying, uncertainty, change in appearance, or altered lifestyle.
- 4- Interrupted family processes related to anticipatory grief and the burdens imposed by the care of the person with a terminal illness.
- 5- Acute pain related to tumor compression
- 6- Impaired gas exchange related to disease process;
- 7- Constipation related to decreased fluid and dietary intake and medications;

## Planning and Goals

The goals for the patient may include :

- 1- compensating for self-care deficits.
- 2- Improving nutrition.
- 3- Reducing anxiety.
- 4- Enhancing family coping skills.
- 5- Absence of complications.