

## Meningioma

A meningioma is a brain tumor that arises from the meninges. It is the most common primary brain tumor in adults. Meningiomas are benign lesions originating from arachnoid villi and can often be seen having a dural attachment on imaging. They can be located anywhere there are meninges but most often, they are found in parasagittal areas. If the tumor significantly compresses on the motor cortex, contralateral leg weakness may be seen. Seizures are another clinical manifestation. Diagnosis is made by visualization of psammoma bodies and calcifications on histology. Increased bone density may be noticed in bone adjacent to the lesion.



PLAY PICMONIC

### Epidemiology

#### Most Common Adult Primary Brain Tumor

##### [Man Holding Up \(1\) Foam-Finger](#)

This tumor is the most common non-malignant, non-glial primary brain tumor. Even so, although the majority are benign, a small subset of these tumors are malignant. They are more common in women and in patients with neurofibromatosis type 2.

### pathology

#### Benign

##### [Bunny](#)

90% of meningiomas are benign and are easily resected if they are found to be growing superficially on the dura.

#### Originate from Arachnoid Villi

##### [Arachnid-spider with Villi curtains](#)

This tumor is thought to arise from arachnoid villi, which are projections of arachnoid tissue that are involved in CSF absorption.

#### Dural Attachment

##### [Durex-latex Cap](#)

These tumors can arise anywhere along the dura and therefore often have a dural attachment.

#### Parasagittal

##### [Parachuting into Parasagittal region](#)

These tumors are most commonly found in the parasagittal region, but can also be found in the falx and hemispheres.

### Clinical Manifestations

#### Contralateral Leg Weakness

##### [Leg Opposite to Parasagittal Region Weak and Wavy](#)

Given their variable location, meningiomas can compress a range of intracranial structures and therefore present with an array of signs & symptoms. Involvement of the parasagittal region can compress the motor cortex and result in contralateral leg weakness.

#### Seizures

##### [Caesar](#)

Meningiomas may cause seizures as a result of compression on brain tissue resulting in abnormal neuronal excitability. Examples of other focal neurologic signs include unilateral vision loss with compression of the optic tract, or hearing loss with compression of the cerebellopontine angle.

### Diagnosis

### **Psammoma Bodies**

#### **Samoans**

Histological examination often shows psammoma bodies which are concentric, ring-like patterns of calcification characteristic of meningiomas. The tissue appears in a whorled pattern. Spindle-shaped cells may also be seen.

### **Calcifications**

#### **Calcified-cow**

Calcifications or concretions may be seen on histological specimens. CT or MRI imaging typically show a dural-based mass which may contain calcifications.

### **Increased Bone Density**

#### **Up-arrow Bones**

Meningiomas can often incite an osteoblastic reaction in the overlying cranial bone resulting in increased bone density. This hyperostosis is not well understood, though theories include a reaction of the bone to the tumor itself, as well as invasion of the bone by the tumor.