Other Brain Tumors

Brain Tumors

This section will not review ALL types of brain tumors, and instead will provide enough information to identify a tumor that is not a meningioma, which has it's own dedicated page due to its highly identifiable qualities, and other highly characteristic brain pathologies covered in this wiki. Brain tumors may present with symptoms such as seizure, vision changes, circling, head pressing, dull or obtunded affect, ataxia, or behavior changes. The symptoms will depend on severity and location. **Primary brain tumors** arise from brain tissue, such as supporting glial cells such as astrocytes, oligodendrocytes, ependymal cells, and may include:

- Ependymoma
- Glioma
- Oligodendroglioma

There are some. albeit variable, broadly common qualities or primary brain tumors that can separate them from other pathologies in this wiki:

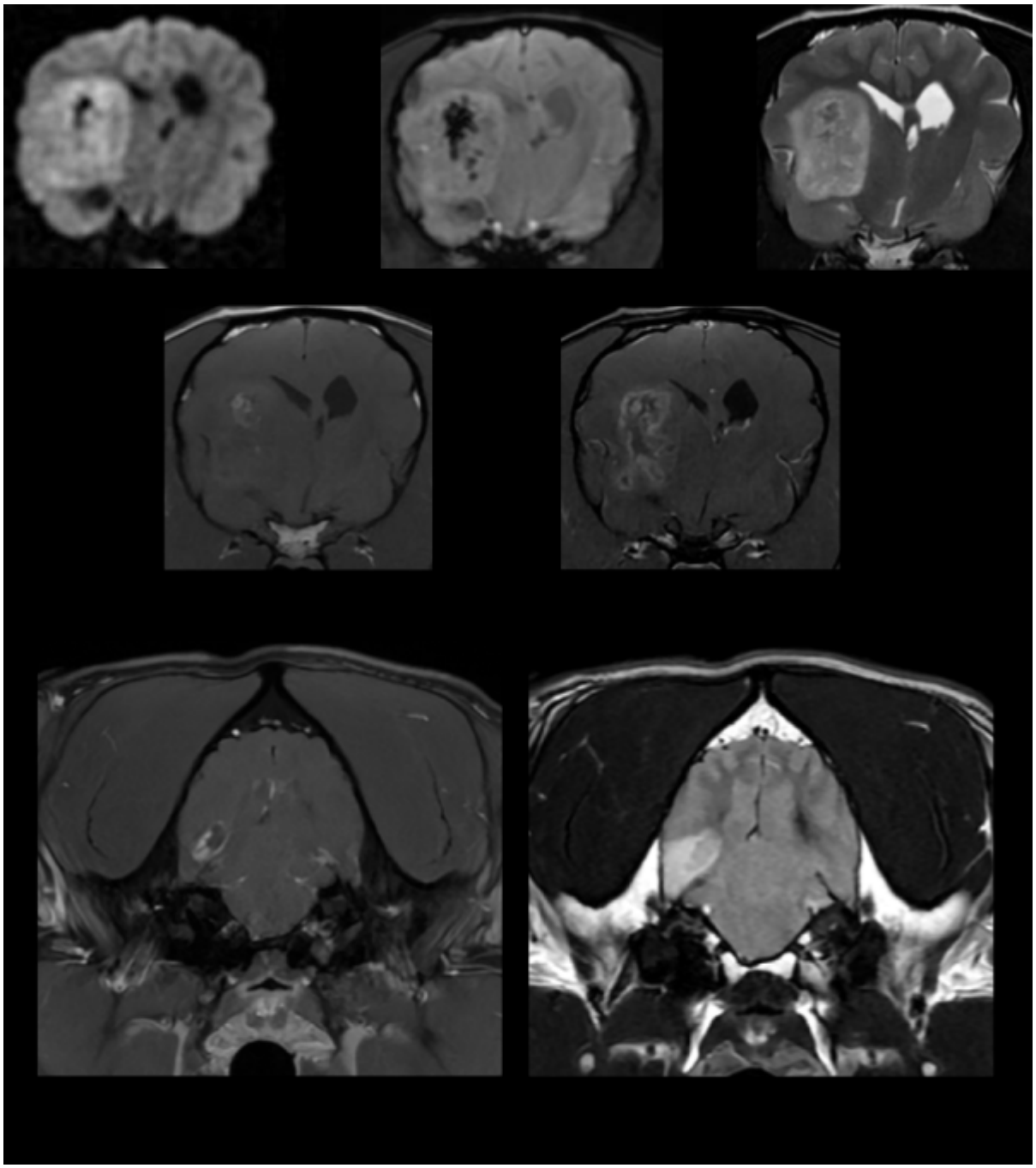
- More commonly focal; only one spot
- Intra axial; inside the brain tissue
- May be poorly circumscribed; less defined or blurry edges
- May have cystic or hemorrhagic components
- Edema
- Mass effect
- May be common in one area of the brain
- May or may not display contrast enhancement
- Heterogenous; different signal intensities across the tumor over different weightings
- Necrotic core

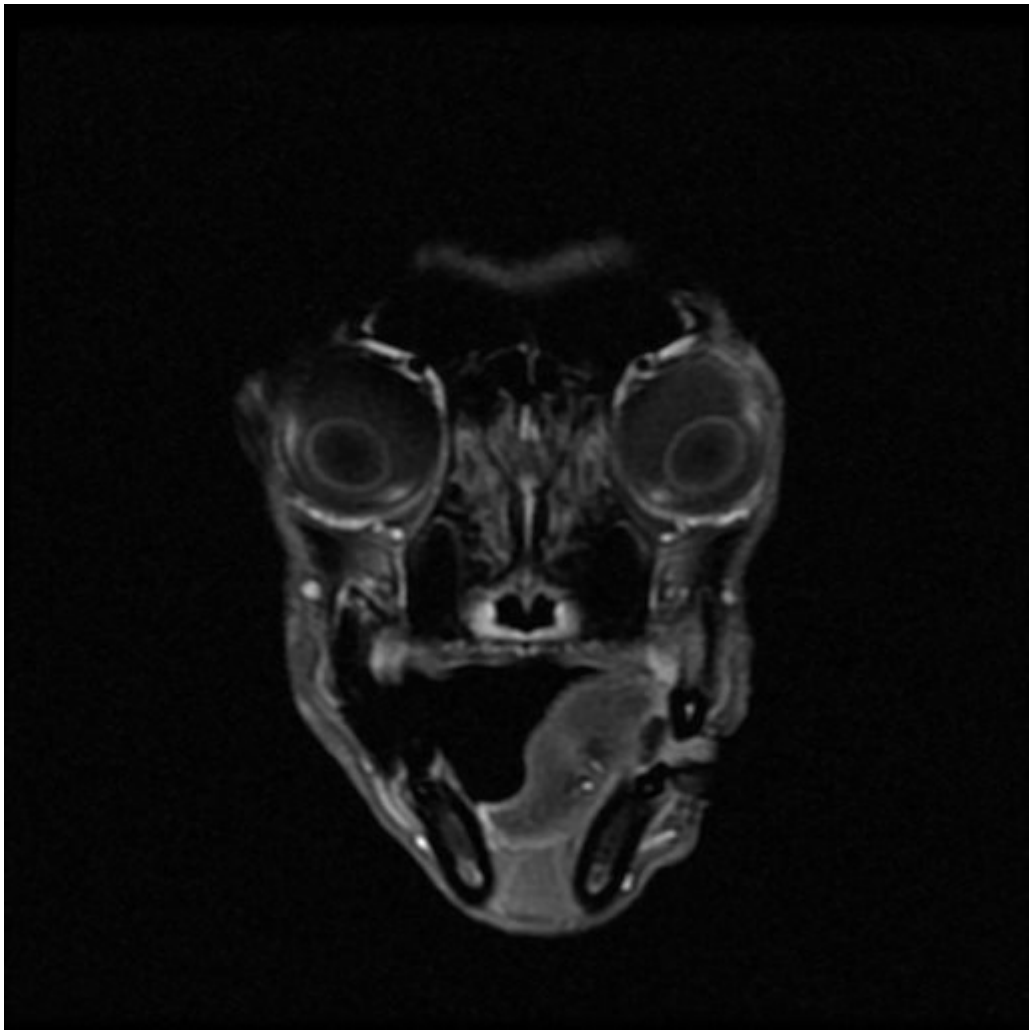
Primary Brain Tumors on MRI

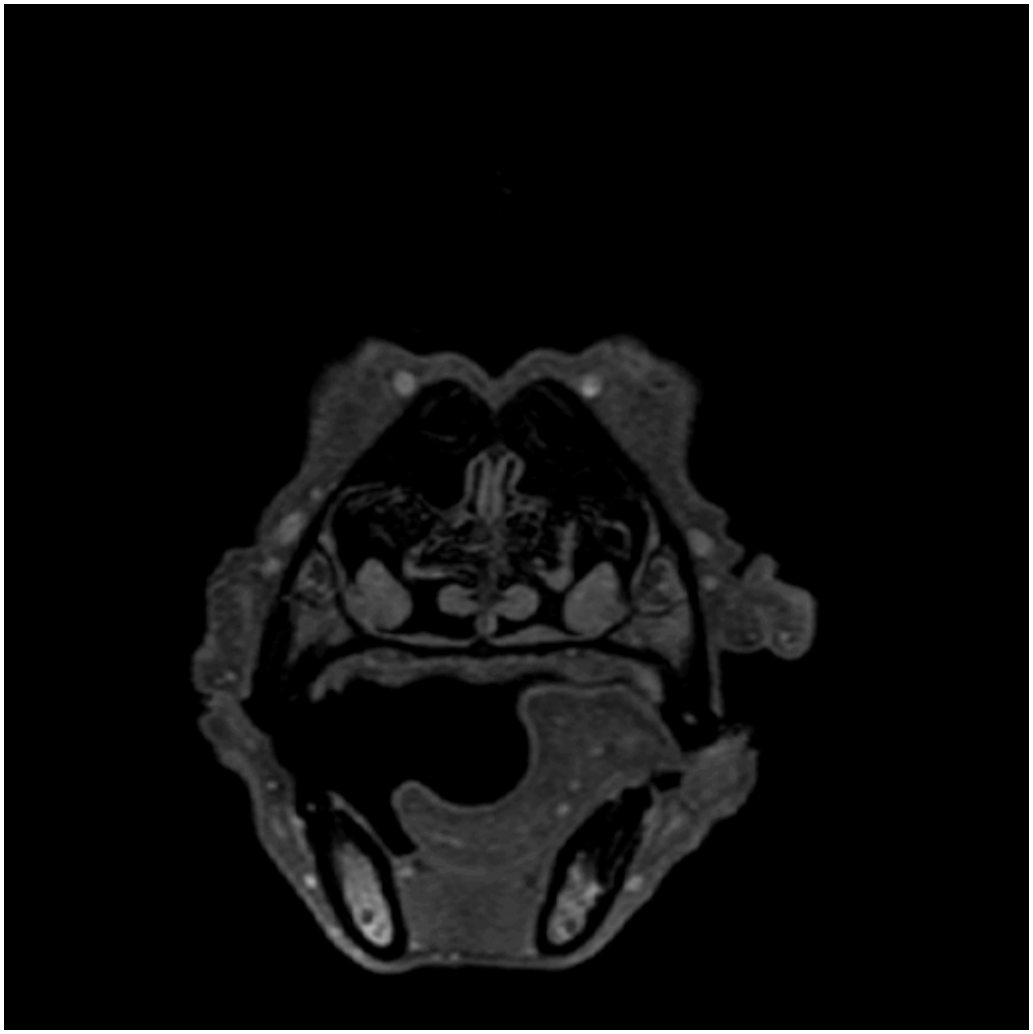
There is no one best pulse sequences to identify a primary brain tumor, the complete brain MRI protocol is required to characterize the tumor. Below is a sample brain protocol and which information each sequence may provide in characterizing a tumor:

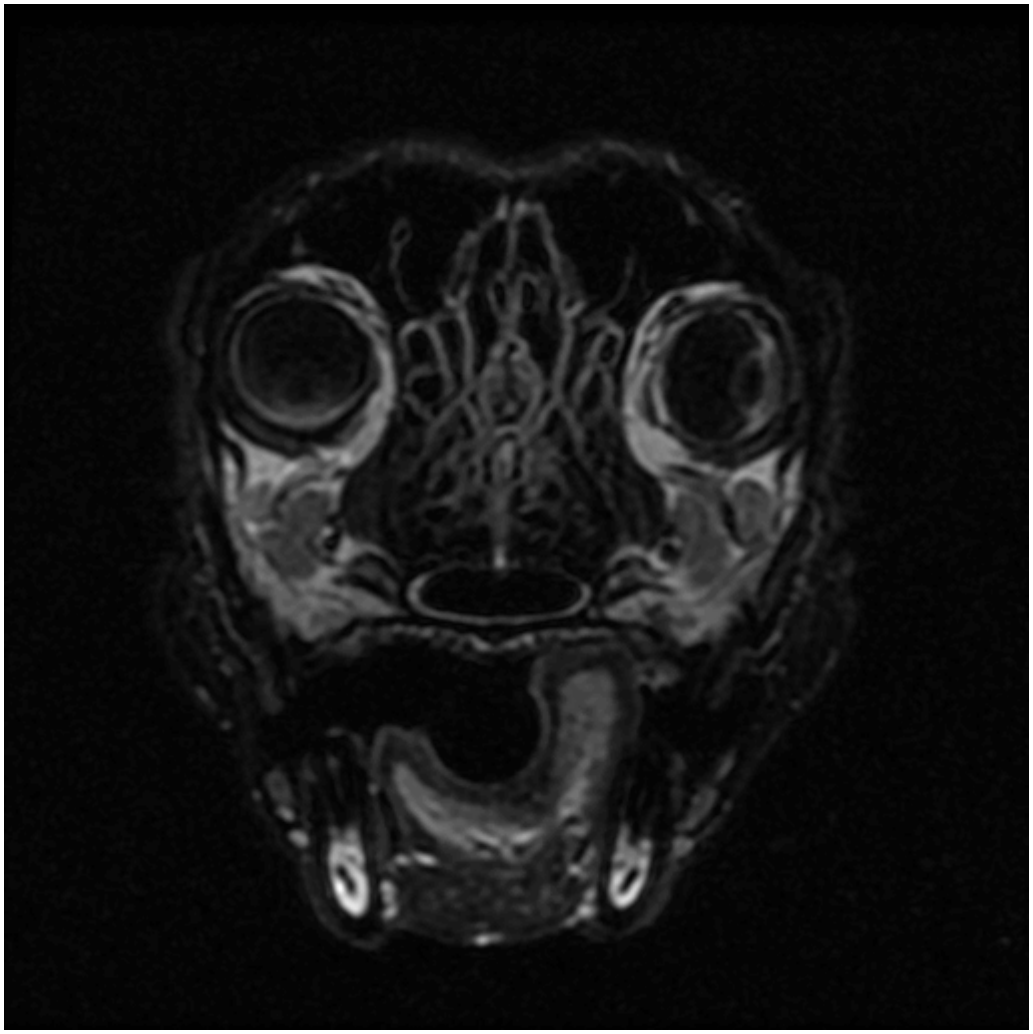
- **Sag T2**: Identify tonsillar herniation
- **Ax T2**: Identify edema and fluid components
- **Ax T2 FLAIR**: Identify edema, check is fluid is nulled
- **Ax T2* GRE**: Identify hemorrhage
- **Ax DWI**: Confirm vasogenic edema, rule out ischemia, identify abscess, diffusion properties of the tumor
- **Ax T1**: Confirm if hemorrhage is subacute, compare to post gad imaging
- **Post Gad T1**: Check for presence and pattern of any enhancement; gad enhancement means blood brain barrier is broken down or tumor is vascularized

Examples of Primary Brain Tumors









Metastatic Brain Tumors

Metastatic disease occurs when a tumor elsewhere in the body breaks of small cancer cells that travel through the bloodstream to other parts of the body. Often called 'mets', when occurring in the brain there may be many overlapping imaging characteristics with primary brain tumors but with a tendency for a few exceptions:

- Commonly contrast enhancing
- Multifocal; more than one spot
- Commonly well demarcated; edges of the tumor are clear

Hemangiosarcoma is a tumor that often metastasizes into the brain and can demonstrate many small hemorrhages in the brain tissue on T2* weighted imaging: