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Title of the presentation: A rare case report on clival meningioma

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Introduction:

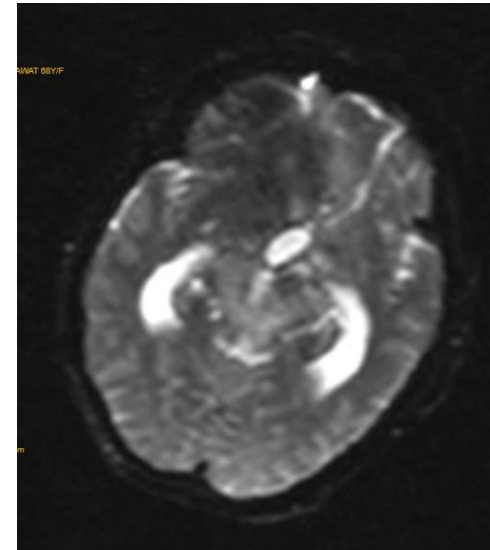
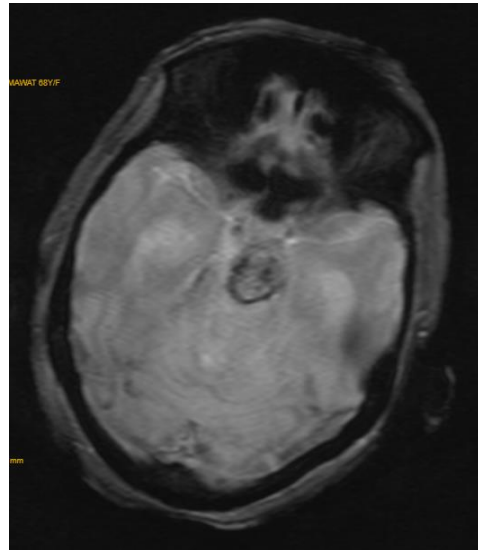
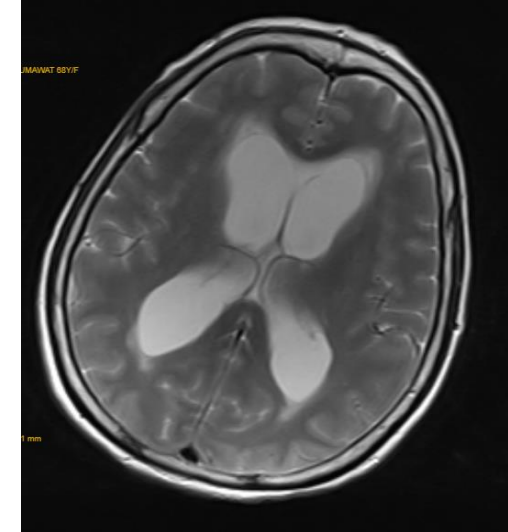
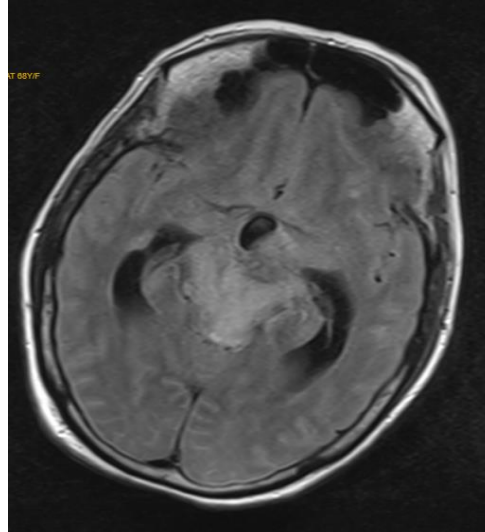
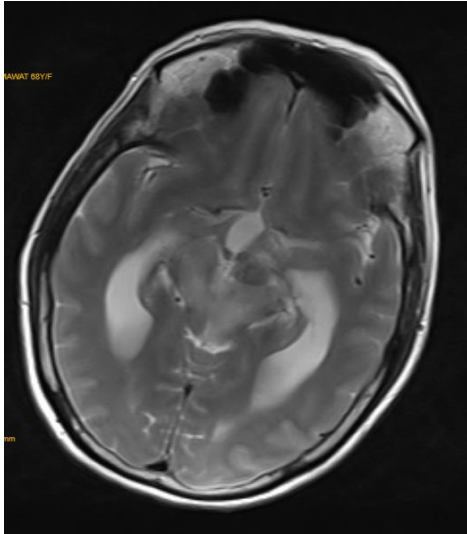
Meningiomas are the most common primary brain tumors, accounting for approximately 30% of all intracranial neoplasms. These tumors originate from the meninges, the protective membranes surrounding the brain and spinal cord, and are typically classified as benign, although some may exhibit atypical or malignant characteristics. Meningiomas are more prevalent in adults, particularly in women, and often arise in areas such as the convexity of the brain, the sphenoid ridge, and along the falx cerebri. Symptoms can vary widely, depending on the tumor's location and size, and may include headaches, seizures, and neurological deficits. While many meningiomas are asymptomatic and discovered incidentally, treatment options often involve surgical resection and, in certain cases, radiation therapy. Understanding the imaging characteristics and clinical implications of meningiomas is crucial for accurate diagnosis and effective management.

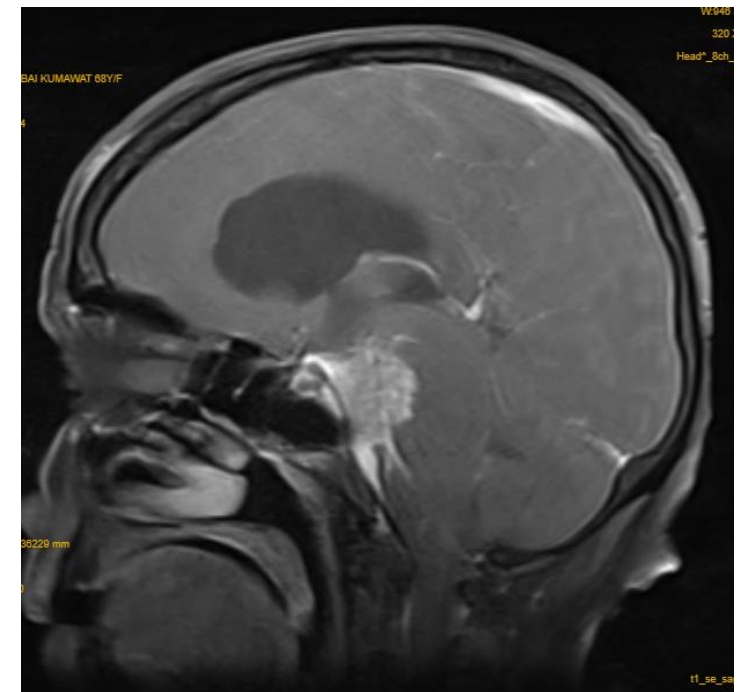
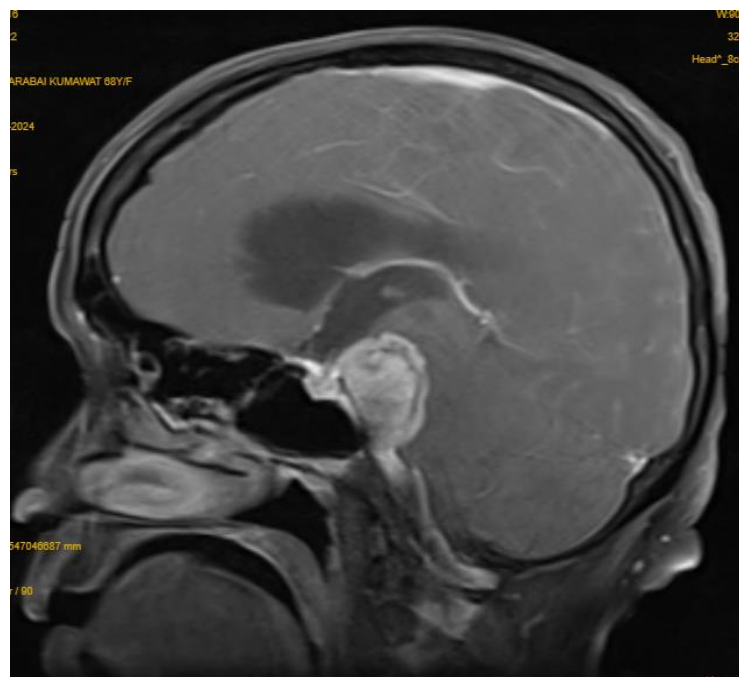
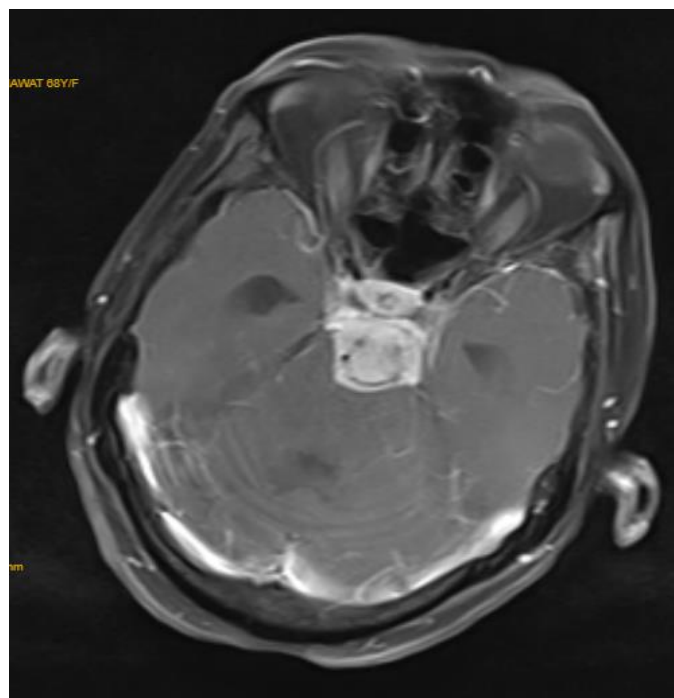
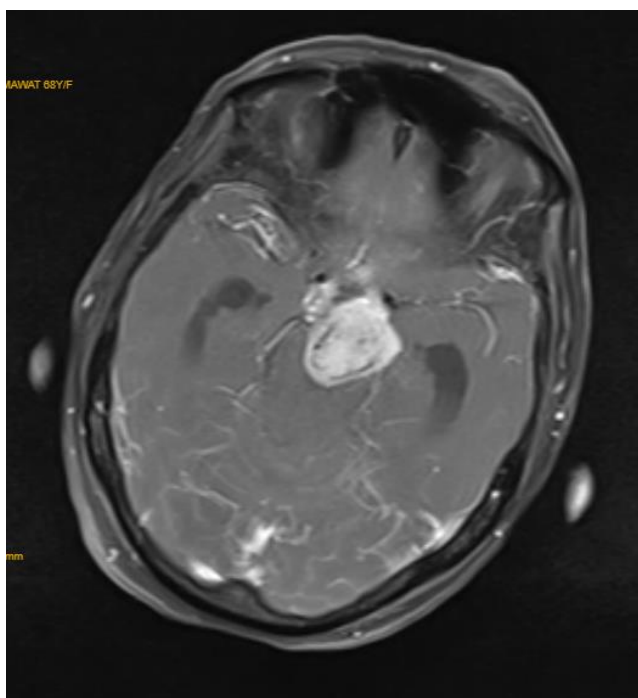
Methodology:

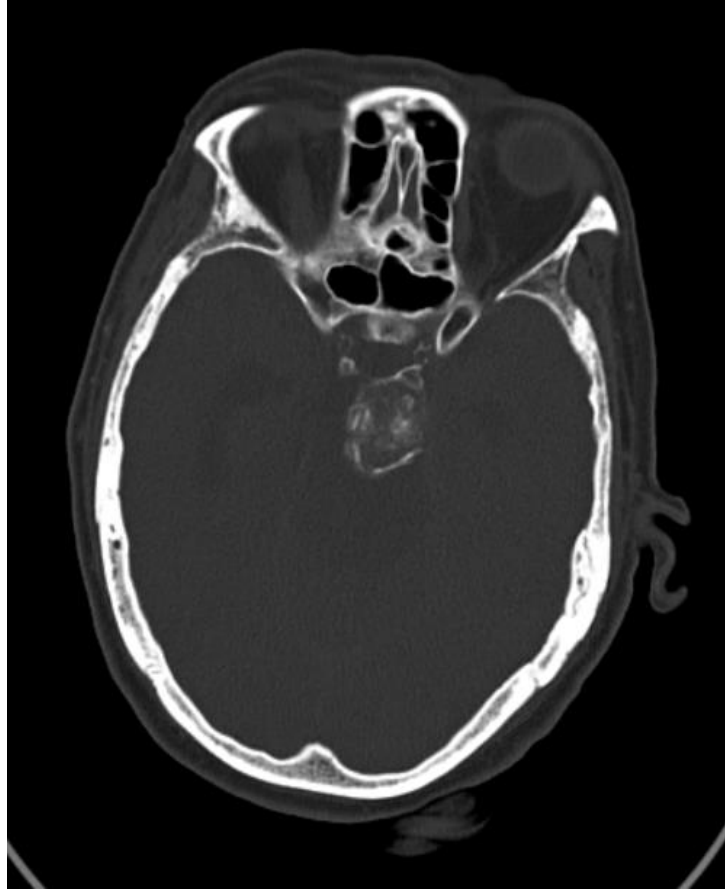
Case presentation-

We present the case of a 68-year-old female with headaches and seizures. CT brain plain and MRI scan of the brain was performed using T1 & T2 weighted sequences in multiple planes. A large well-defined prepontine extra-axial space occupying lesion was in relation to the posterior aspect of the clivus and extends into the left cerebellopontine angle. It was eliciting isointense signal to grey matter on both T1 and T2 sequences and demonstrated vivid contrast enhancement with enhancing meningeal dural base known as dural tail sign. Anteriorly the mass was causing erosions on clivus & bilateral temporal bones. Mild mass effect was in the form of mild compression on midbrain, pons, and 3rd ventricle & left medial basal temporal lobe. Mild dilatation of all four ventricles with minimal periventricular CSF seepage suggestive of perilesional vasogenic oedema and communicating hydrocephalus. Large areas of cerebral edema was noted in both thalami, midbrain, pons superior & middle cerebellar peduncles and anterior cerebellar hemispheres on both sides. It was showing foci of blooming on SWI suggesting intralesional calcification. Features are suggestive of clival meningioma.

Representative images:







Discussion:

Meningiomas are common intracranial tumors that can be identified based on their radiological and histological characteristics. However, meningiomas can also mimic other brain tumors. Females are more likely to have meningiomas, and the incidence rate increases with age. Meningioma development has been linked to specific molecular changes and ionizing radiation. Meningiomas are divided into 15 subtypes and are categorized into three classes, with survival and re-occurrence rates getting worse as the grade rises.⁵ Atypical meningioma (WHO Grade II) is a more aggressive form of meningioma with a higher five-year re-occurrence rate (41%), than grade I (benign) meningiomas (12%), and the diagnosis is mainly on histopathologic findings on biopsy as it is difficult to differentiate between grade I and II meningioma based on radiologic criteria. ⁸The Symptoms include headache, seizures, change in personality or behavior, development of a localized neurologic impairment, drowsiness, confusion, loss of hearing or tinnitus, fatigue on exertion, projectile vomiting and visual disturbances. If a meningioma is left untreated, it can cause problems such as loss of neurological function, weakness/numbness, hearing or vision loss, and balance problems. Sometimes there is worsening of the signs of persistent headache, the origin of new episodes of seizures, or increased intracranial pressure (e.g., vomiting, swelling of the 2nd cranial nerve), initially a neurological evaluation should be performed followed by radiological studies if necessary initial diagnoses are made using contrast-enhanced CT or MRI. A wait-and-see strategy is used for tiny, asymptomatic tumors, but total surgical removal is the best course of action for symptomatic meningiomas.⁵

Intraoperative MRI helps to obtain tissue samples and remove the tumor during surgery. The biochemical profile and nature of the tumor can be better visualized using on MR spectroscopy. In adults, prognosis is mostly age-dependent. In general, early diagnosis has a better prognosis. If the entire tumor is operable, the outcome is better. Tumor removal is the main goal of surgery, however the patient's neurological capabilities must be preserved or improved first.⁶ Preoperative embolization of the tumor is widely performed for patient safety throughout the surgical process. In patients when the total tumor is removed, there is a comorbidity risk (any side effect that can cause deterioration in the quality of life) and it may be preferable to leave some of the tumors in place and monitor future growth with routine imaging examinations.⁷ In the case of a GRADE II atypical meningioma, an MRI scan should be performed every 6-12 months. After 5 years, MRI is performed every 2 years.

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