Craniopharyngioma Diagnosis

- Quality of life in pediatric patients treated with adjuvant proton radiation for craniopharyngiomas
- Patterns, clinical presentations, and time to diagnosis in pediatric central nervous system tumors: insights from a pediatric neuro-oncology tumor board team at a tertiary referral hospital in Ethiopia
- Prolactin serum concentrations in childhood-onset craniopharyngioma patients
- Machine learning method based on radiomics help differentiate posterior pituitary tumors from pituitary neuroendocrine tumors and craniopharyngioma
- Incidental paraganglioma of sella : A case report and literature review
- Assessment of Clinical and Neurological Alterations Before Radiation Therapy in Children With Malignant Brain Tumours
- Pituitary Blastoma: Expanding the Spectrum of Histopathological Findings in a Young Adult With DICER1 Mutation
- In Reply to the Letter to the Editor Regarding "Artificial Intelligence-Based Radiomic Model in Craniopharyngiomas: A Systematic Review and Meta-Analysis on Diagnosis, Segmentation, and Classification"

The evaluation of craniopharyngioma requires an interprofessional approach with evaluation by an endocrinologist, neuro-opthalmologist, and neurosurgeon.

Imaging

Craniopharyngioma is diagnosed with computerized tomography (CT) and or magnetic resonance imaging (MRI) during the evaluation of visual symptoms. MRI is the standard of care in identifying craniopharyngiomas or any other pituitary tumors as it provides better information on the tumor, its location, and association to the surrounding structure. The cystic area is visible on both modalities, but calcification is primarily seen with CT imaging. Craniopharyngioma is heterogeneous in texture; the combination of solid, cystic, and calcification components is a clue to its diagnosis on imaging modalities. ACP is primarily large irregular with 90% calcification and a cystic area, while PCP is mostly solid and rarely with cysts and calcifications.

Visual Exam

A complete visual exam, including acuity and visual field, should be done by a neuro-opthalmologist in patients with visual disturbances.

Endocrine Evaluation

All patients should be evaluated for hormonal deficiencies. Laboratory tests should include fasting morning cortisol, ACTH, TSH, free T4, follicle-stimulating hormone (FSH), estradiol (females), testosterone (males), GH, insulin-like growth factor-1, prolactin, serum sodium, and urine specific gravity and osmolality. Dynamic testing like a cosyntropin stim test can be done in selected patients where morning cortisol is equivocal or indeterminate.

Radiographic features

Pituitary neuroendocrine tumors tend to enlarge the sella, in contrast to craniopharyngiomas which erode the posterior clinoids.

Although similar in terms of location, radiographic features depend on the type, although due to a significant minority of tumors having both adamantinomatous and papillary components, they may show overlapping features.

Location

In the vast majority of cases, craniopharyngiomas have a large suprasellar component (95%), with most involving both the suprasellar and intrasellar spaces (75%). A minority are purely suprasellar (20%), whereas purely intrasellar location is quite uncommon (<5%), and may be associated with the expansion of the pituitary fossa. Larger tumors can extend in all directions, frequently distorting the optic chiasm, or compressing the midbrain with resulting obstructive hydrocephalus.

Occasionally, craniopharyngiomas appear as intraventricular, homogeneous, soft-tissue masses without calcification (papillary subtype). The third ventricle is a particularly common location.

Rare or ectopic locations reported include: nasopharynx, posterior fossa, extension down the cervical spine.

Adamantinomatous craniopharyngioma diagnosis

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Papillary craniopharyngioma diagnosis

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