CYTOLOGICAL AND PATHOLOGICAL FINDINGS IN A FELINE CHOROID PLEXUS CARCINOMA

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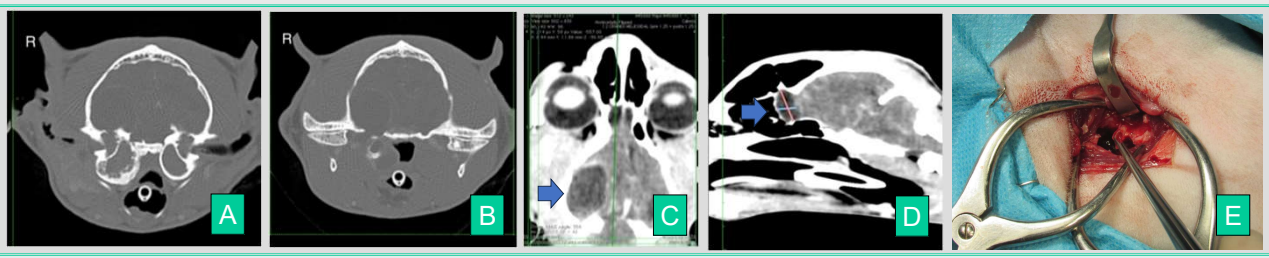
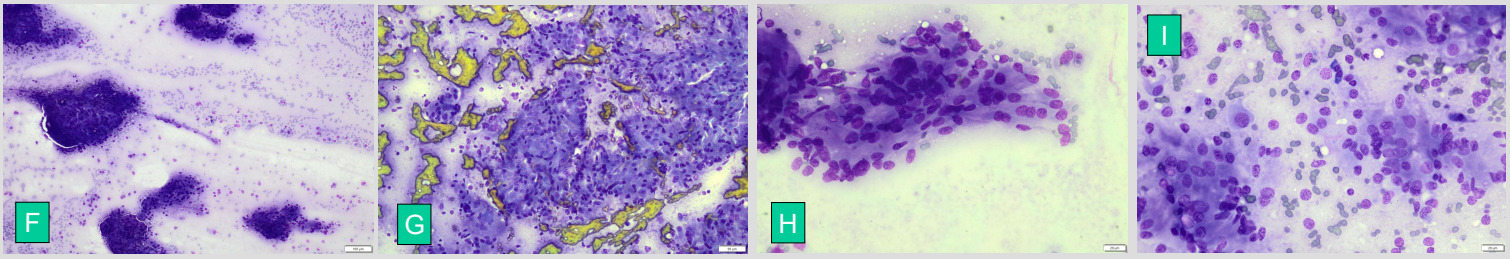
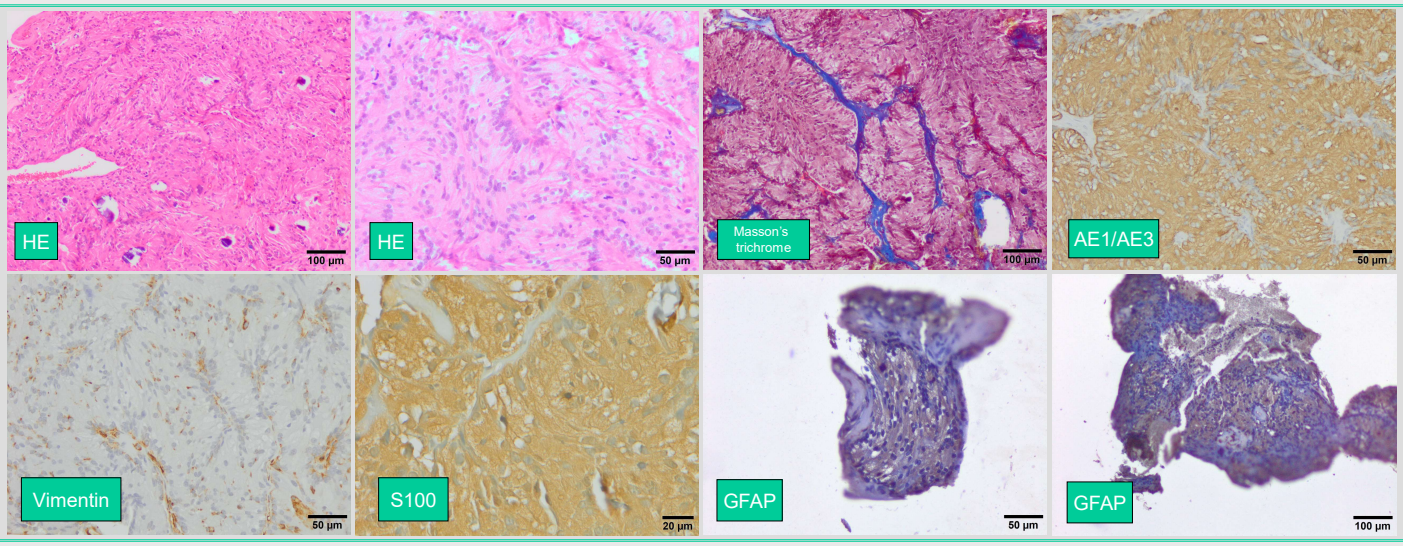
Choroid plexus carcinomas are relatively common in dogs (10% of all primary brain tumors), but rarely described in cat, horse, and ruminants. In dogs, carcinomas are more prevalent than papillomas and the most common location is the fourth ventricle. Besides local compression and invasion, these tumors are frequently associated with secondary obstructive hydrocephalus. A 2-year-old male Angora cat was referred to the Veterinary Teaching Hospital due to sudden blindness. The owners did not disclose any previous clinical signs. Ophthalmological examination did not find significant changes in the fundus which suggested central blindness. No other neurological abnormality or cranial nerve change was noted. Hematology and biochemistry were normal.



Cranial CT scan → Large mass occupying the right auditory bulla and horizontal ear canal, causing adjacent osteolysis and affecting the optic nerve (A-B). The lesion extended intracraneally, compressing the piriform lobe and lateral ventricle (C). There was an accumulation of CSF frontal to the rhinencephalon (D). Ventral bulla osteotomy → The cavity was almost completely filled with friable, caseous to gelatinous material (E).



Cytology (impression smears, May-Grünwald Giemsa) → Moderate-to-high cellularity (F-G). Round to columnar cells forming tight groups, with poorly demarcated borders and a marked anisocytosis with moderate anisokaryosis. Common naked-nuclei, cell debris and capillaries in the background (H-I).



Histology → Multilobulated neoplasia with palisading cells arranged in nests and trabecula separated by scant fibrovascular stroma. Moderate atypia and rare mitoses. IHC→ Positive for Glial fibrillary acidic protein (GFAP), S-100, cytokeratins (AE1/AE3), negative for neurofilaments, vimentin, synaptophysin, calponin.

Choroid plexus tumors usually require several techniques for their final diagnosis. Cytologic preparations are highly cellular and neoplastic cells are round to polygonal. While papillomas usually lack cytological atypia, marked anisokaryosis has been reported in carcinomas. Rosettes and pseudorosettes are not as commonly seen as in ependymomas. On histology, carcinomas are characterized (and differentiated from papillomas) based on frequent mitoses, nuclear atypia, multilayering of the epithelium, increased cell density, loss of papillary pattern with solid sheets, and multiple areas of necrosis. IHC shows positivity to pancytokeratins and, commonly, GFAP. In some cases, papillary ependymomas can be confused with these tumors, although the immunolabelling against AE1/AE3 and the GFAP-immunonegative collagenous stroma are characteristic. Although there is a wide variation between references in regards of its features, this case is an example of the clinical, cytological, histological and IHC findings of this rarely reported feline neoplasia.

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