Sella Vision: A Pictorial Review of Rare Sellar and Suprasellar Tumours

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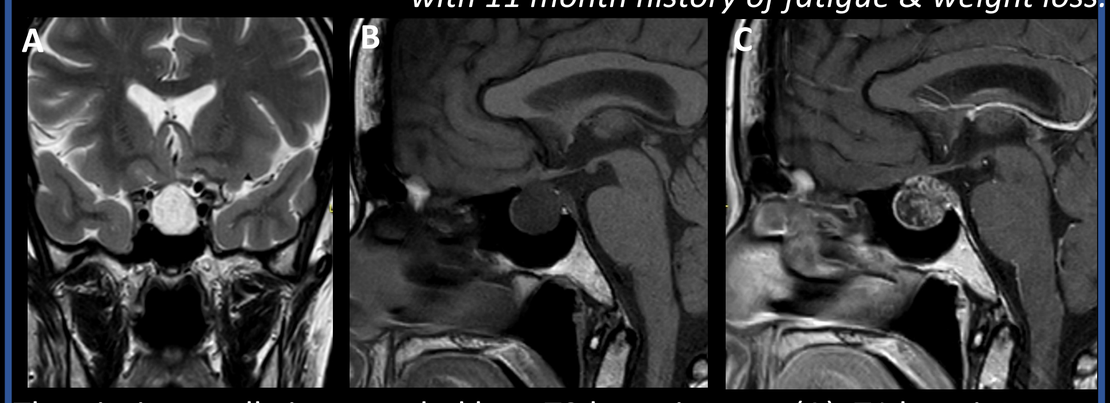
PURPOSE: To educate the reader about rare and unusual sellar and suprasellar tumours. We aim to highlight pertinent imaging features which may suggest these alternative differentials- including multifocal intracranial abnormalities, rapid growth of tumour and heterogeneous, atypical signal characteristics.

CHONDROSARCOMA

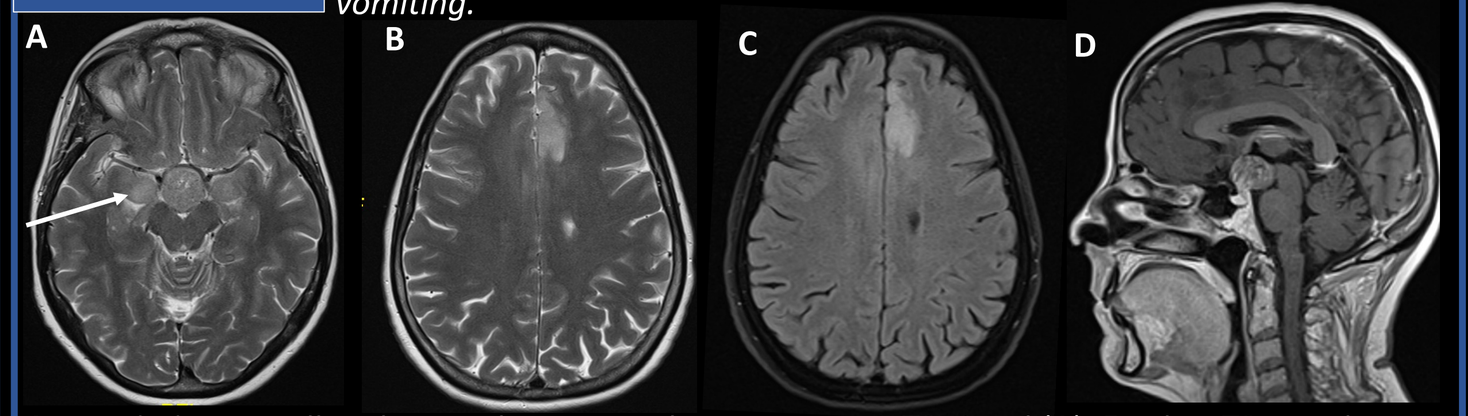
50 year old female presents in adrenal crisis, with 11 month history of fatigue & weight loss.



The pituitary sella is expanded by a T2 hyperintense (A), T1 hypointense (B) lesion. The lesion contacts the underside of the optic chiasm. Following contrast, there is heterogeneous, somewhat "speckled" enhancement (C). *Complete macroscopic resection of the lesion confirmed a tissue diagnosis of chondrosarcoma.*

GLIOBLASTOMA

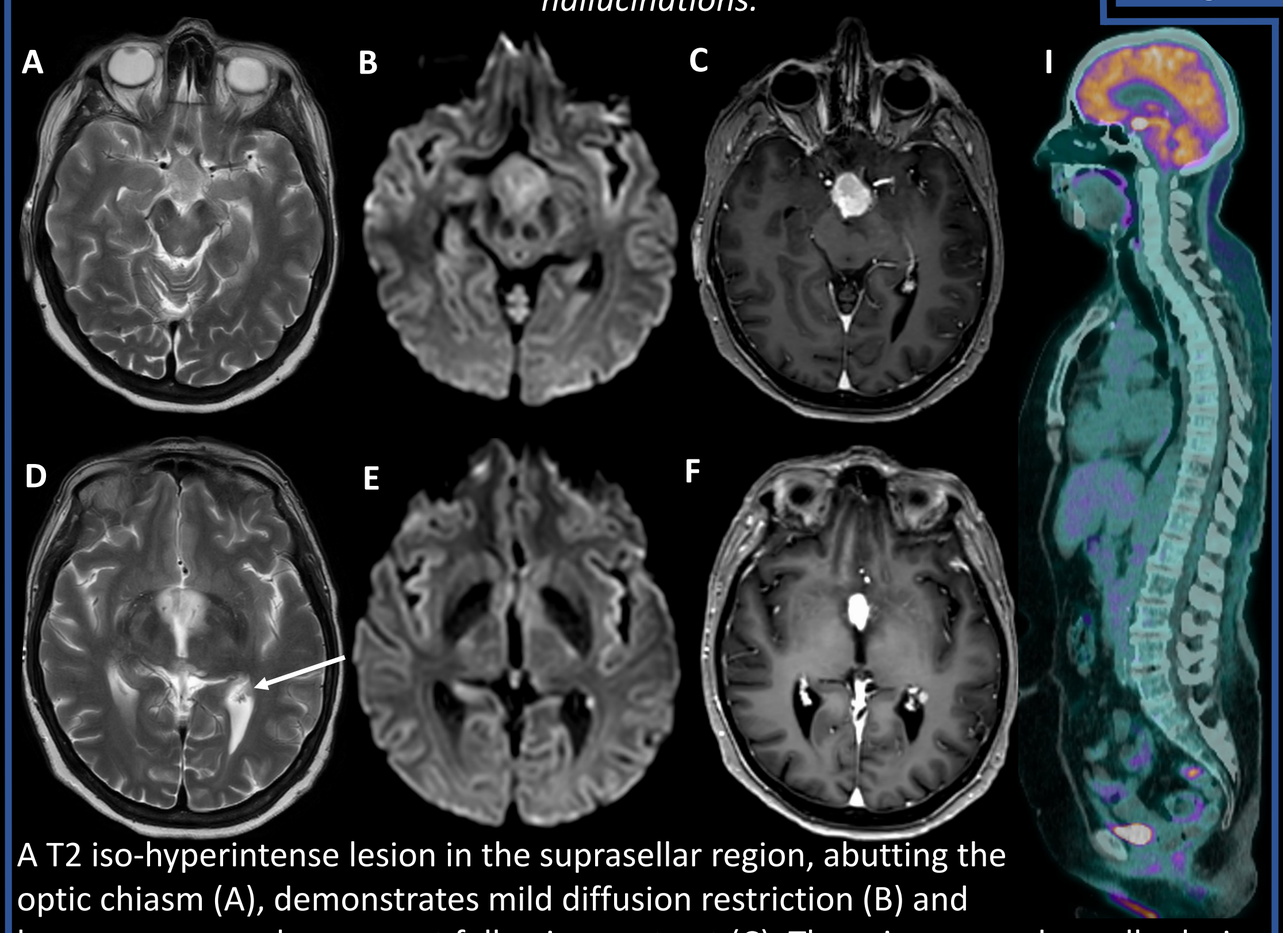
58 year old female presents with malaise, blurred vision, and nausea and vomiting.



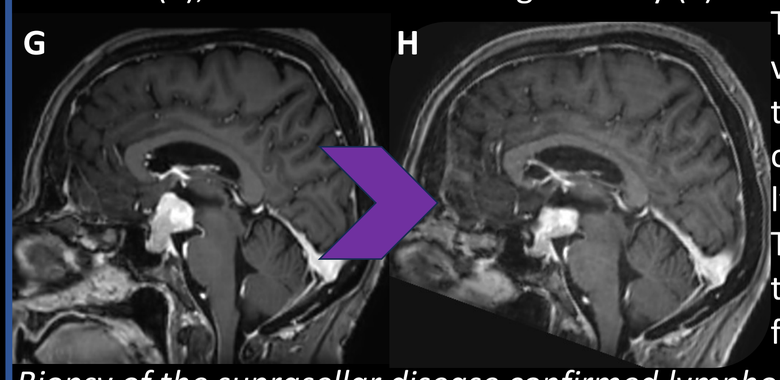
A rounded suprasellar abnormality returns heterogeneous T2 signal (A). Further T2 signal hyperintensity is noted in the adjacent mesial temporal structures (R>L) (arrow). A second T2/FLAIR hyperintense abnormality is noted involving the cortex and subcortical white matter of the medial left frontal lobe (B and C). Following contrast, there is heterogeneous enhancement through the suprasellar lesion (D). The left frontal lesion does not enhance.
Biopsy of the suprasellar lesion confirmed a high-grade glial tumour; the bland T2 hyperintense changes were interpreted on imaging as multifocal sites of infiltrative low grade disease.

PRIMARY CNS LYMPHOMA

71 year old female presents with hallucinations.



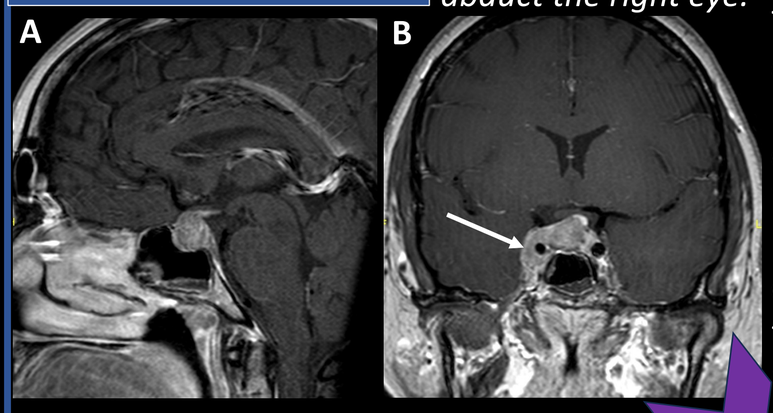
A T2 iso-hyperintense lesion in the suprasellar region, abutting the optic chiasm (A), demonstrates mild diffusion restriction (B) and homogeneous enhancement following contrast (C). There is a second, smaller lesion along the ependyma of the left ventricular trigone (D, arrow). The lesion restricts diffusion (E), and enhances homogeneously (F).



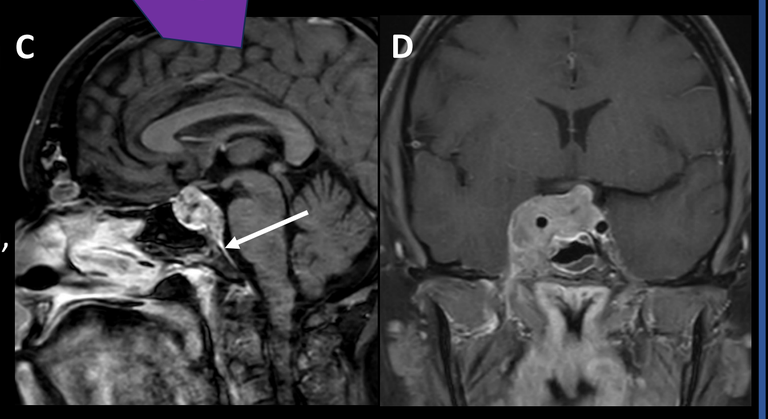
The suprasellar lesion reduced in volume over 2 weeks following a trial of steroids(G→H), supportive of an imaging diagnosis of lymphoma.
The lesion also demonstrates avid tracer uptake on ^{18}F FDG PET (I), further suggestive of lymphoma.
Biopsy of the suprasellar disease confirmed lymphoma.

ATYPICAL TERATOID/RHABDOID TUMOUR (AT/RT)

43 year old female presents with 3-4 week history of headache, believed to be sinusitis, and a new persistent diplopia. On examination, she is unable to abduct the right eye.



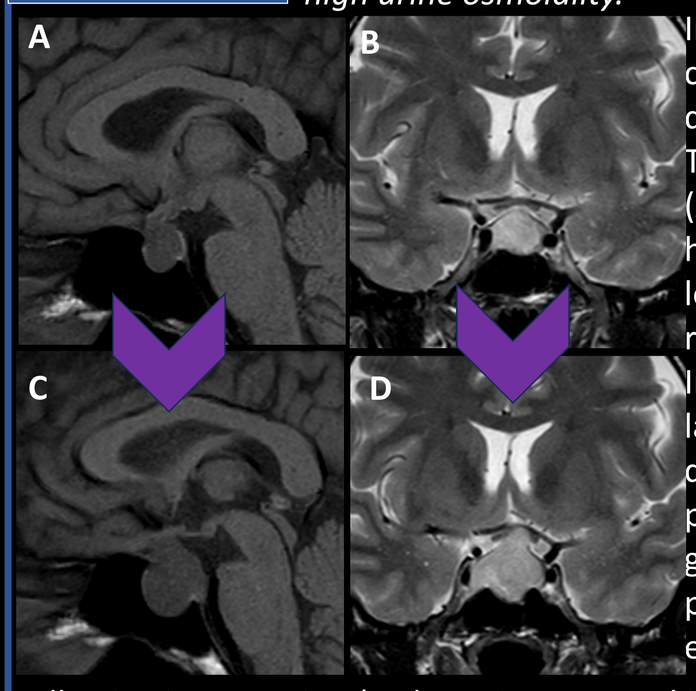
The presentation MRI demonstrates a sellar/suprasellar lesion with heterogeneous enhancement (A). The coronal image (B) demonstrates the right parasellar extension, with circumferential encasement of the right internal carotid artery (arrow).



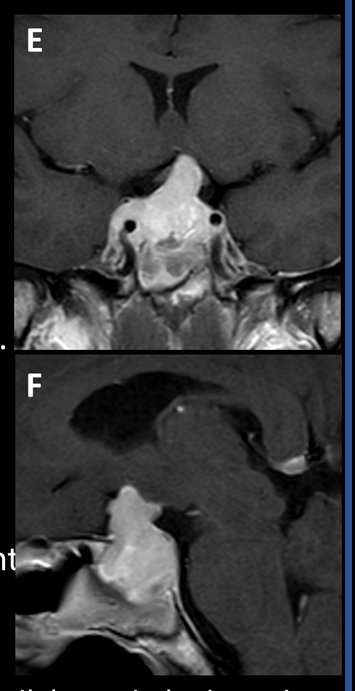
Repeat imaging 3 weeks later demonstrates rapid short-interval growth of the locally aggressive lesion. There is new retroclival extension (C) (arrow), growth upwards in the suprasellar cistern, as well as increased tumour bulk through the right parasellar/ cavernous regions (D).
Histological diagnosis is of ATRT.

SPINDLE CELL SARCOMA

43 year old female presents with headache and collapse. Endocrine work-up demonstrates serum hyponatraemia and a high urine osmolality.



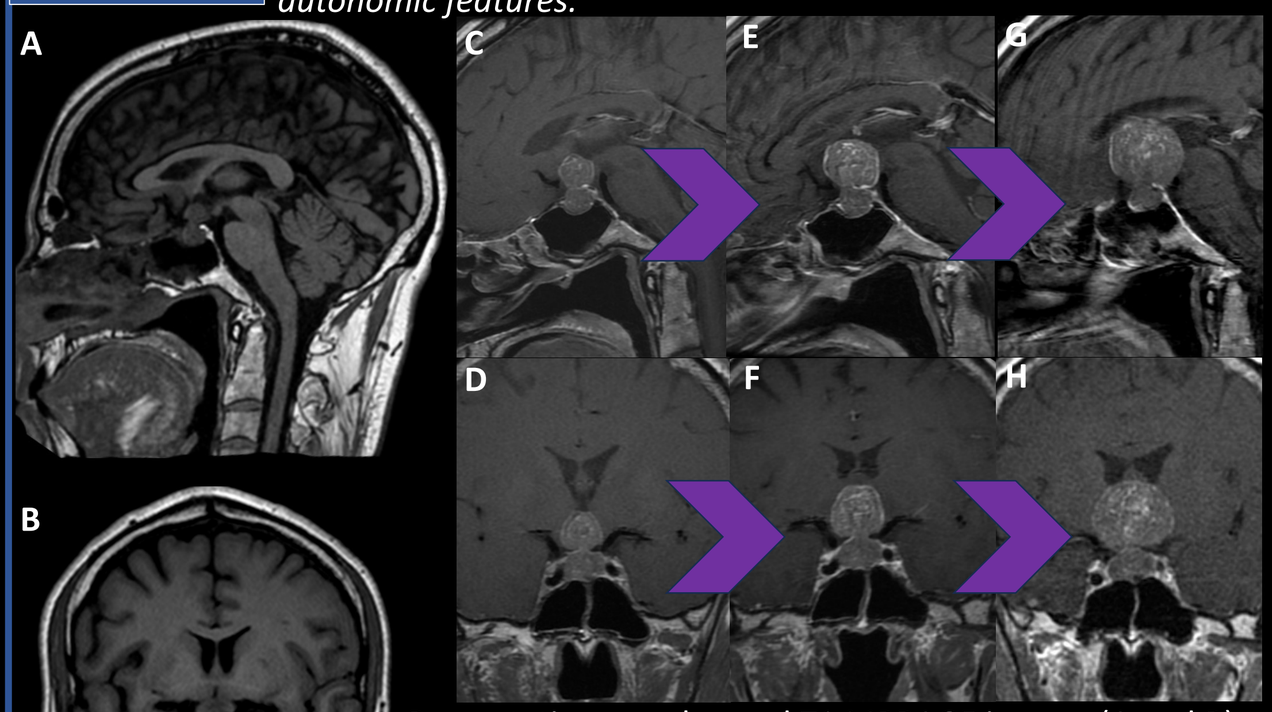
Initial non-contrast MRI demonstrates a T1 hypointense (A), T2 hyperintense (B) lesion within a remodelled sella. Imaging 4 weeks later (C and D) demonstrates progressive growth, with right paracavernous extension.



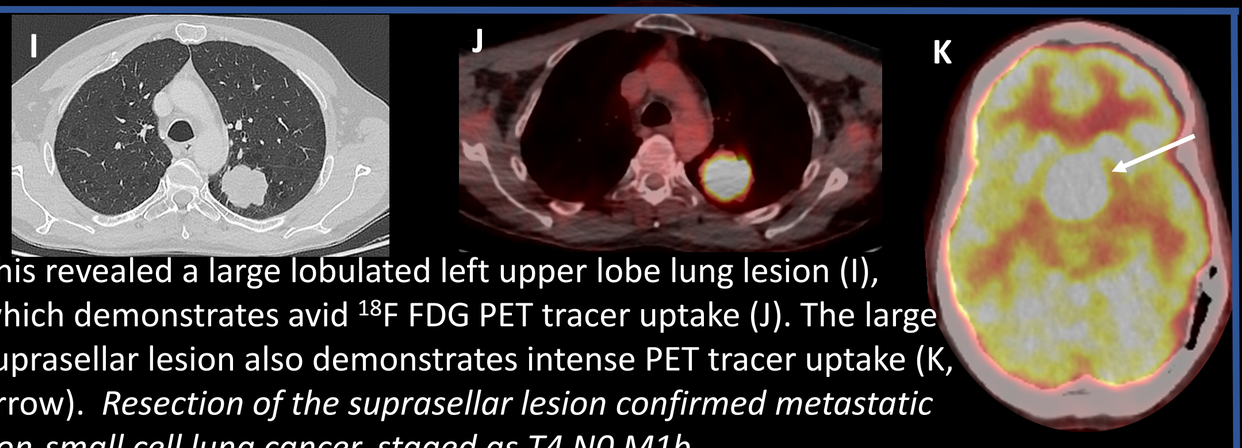
Following intervention (T1 hyperintense packing material noted) (E and F), there has been further growth of the homogeneously enhancing lesion.
Histology initially classified the tumour as high grade NOS, with final diagnosis reported as a spindle cell sarcoma.

METASTASIS

52 year old male presents with new right-sided headaches and autonomic features.



Presentation unenhanced T1 MPRAGE images (A and B) demonstrate a sellar/suprasellar lesion, initially thought to be a macroadenoma. Sequential pituitary MRIs at 2-weekly intervals demonstrates significant enlargement of the suprasellar component (C and D→E and F→G and H). Given the rapid growth, the patient had full-body imaging.



This revealed a large lobulated left upper lobe lung lesion (I), which demonstrates avid ^{18}F FDG PET tracer uptake (J). The large suprasellar lesion also demonstrates intense PET tracer uptake (K, arrow). *Resection of the suprasellar lesion confirmed metastatic non-small cell lung cancer, staged as T4 N0 M1b.*