

Rare Case of Metastatic Pituitary Disease

Anitha Somasundaram¹ MD, Kevin D Judy² MD, Kevin J Furlong¹ DO

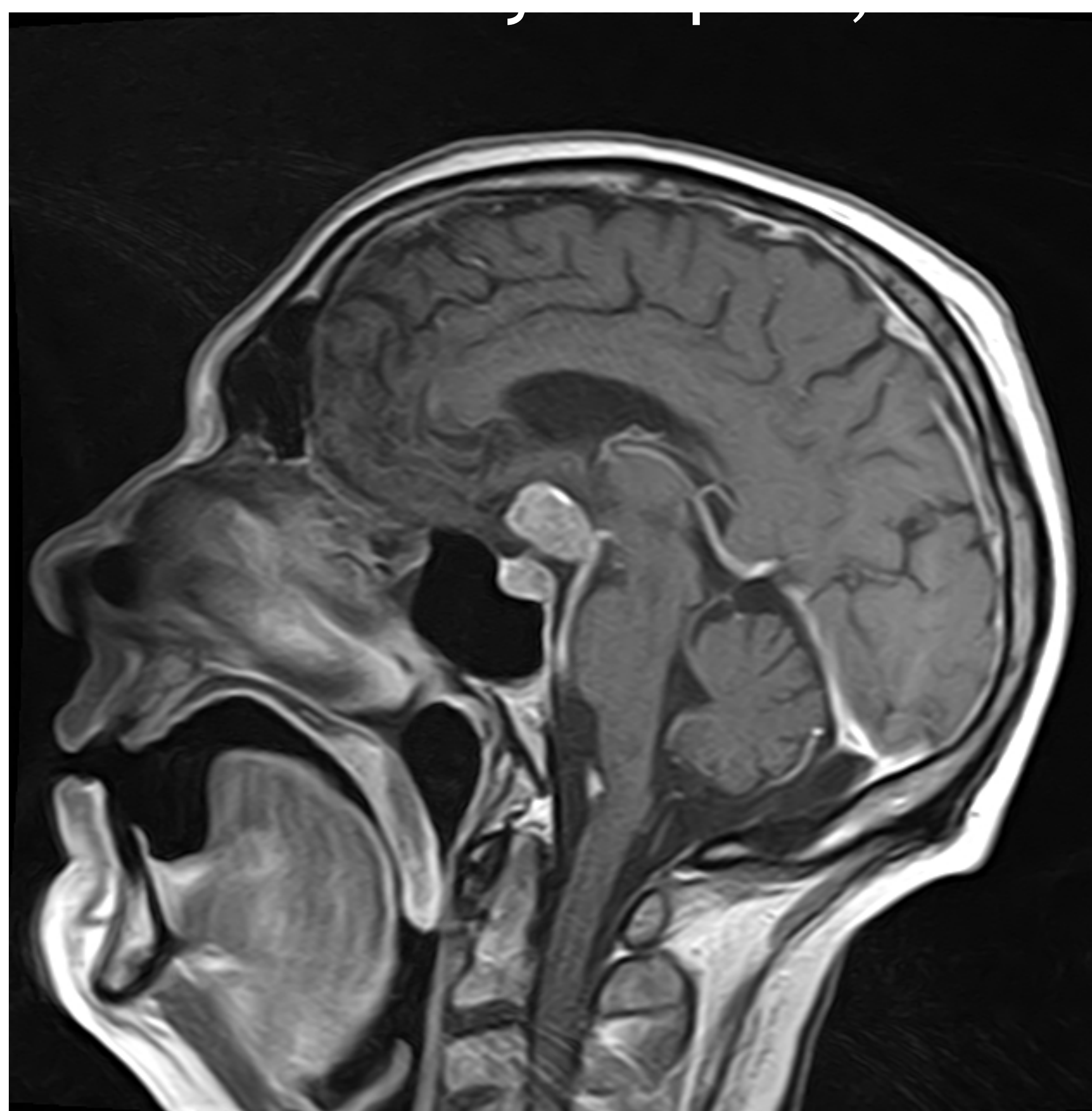
¹Department of Endocrinology, ²Department of Neurosurgery,

Background

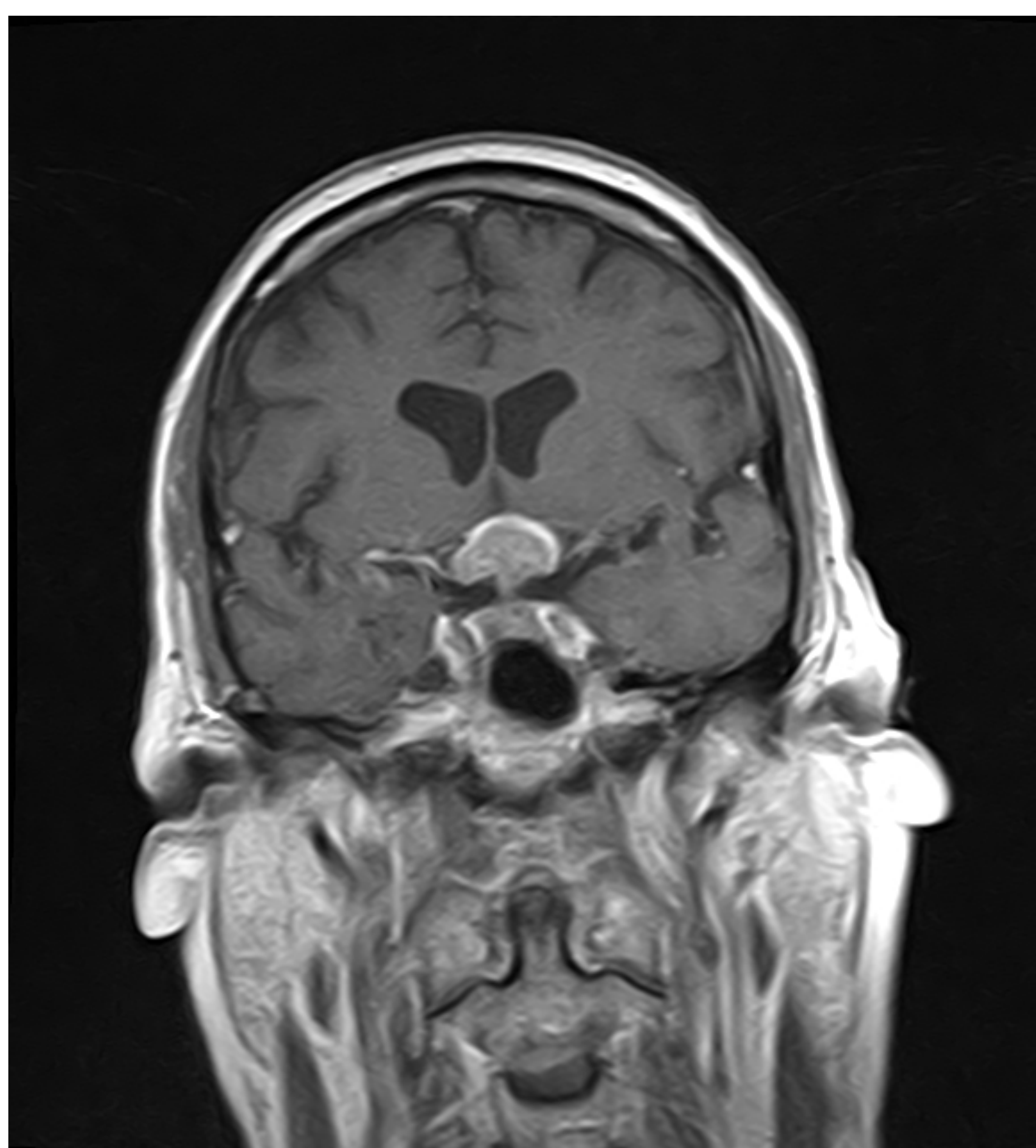
Metastatic involvement of the pituitary gland is extremely rare. We present a case of metastatic pituitary disease with panhypopituitarism and diabetes insipidus.

Clinical Case

A 60 year old male was transferred to the neurosurgery service from an outside hospital for further evaluation of a suprasellar mass. He initially presented to the outside hospital with confusion and fatigue. He was recently diagnosed with locally advanced stage 4-esophageal cancer and underwent minimally invasive esophagectomy and neoadjuvant radiotherapy with chemotherapy. Family history was significant for breast cancer in his mother. Social history was positive for smoking 15 pack year's cigarettes. Vitals were stable with PR of 80/minute and BP of 101/60. Physical exam was normal. On labs, CBC showed Hb of 10.8 g/dL (14-17) with normal MCV of 94 fL (80-94). On BMP, sodium was 152 mmol/L (135-146), creatinine 0.9 mg/dL (0.7-1.4) with serum osmolality of 320 mOsm/kg (275-295) and Urine osmolality of 136mOsm/ kg. Endocrine labs revealed TSH of 0.39 IU/mL (0.4-4.5), free T4 of 0.5 ng/dL (0.7-1.7) prolactin of 4 ng/mL (0-19), ACTH <9 pg/mL (9-46), AM cortisol 3.6 mcg/dL (16-20), GH 0.1 ng/mL (<10), LH 0.1 mIU/mL, FSH 0.3 mIU/mL (1.5 -12.4), free testosterone 1.1 pg/mL (35-155). MRI of brain with contrast showed 2.2cm extra axial lesion in the floor of the 3rd ventricle and hypothalamus. It was also extending in suprasellar and interpeduncular cisterns. There was thickening and abnormal enhancement of pituitary stalk and regional mass effect with superior elevation of optic chiasm. The patient was placed on stress dose steroids and underwent stereotactic tumor biopsy. Post procedure steroids were tapered and he was started on nasal desmopressin for central diabetes insipidus. Levothyroxine was also started for central hypothyroidism. Pathology of the suprasellar tumor was positive for metastatic carcinoma with positive immunohistochemical results for CDX2 and CK20 double staining suggesting gastro intestinal origin of the tumor.



MRI pituitary post contrast showing enhancing tumor in supra sellar region



MRI pituitary post contrast – coronal view of supra sellar mass

Conclusion

Breast (37.2%) and lung (27.2%) cancers are the most primary malignancies producing pituitary metastasis¹. Posterior pituitary lobe involvement is seen more commonly in pituitary metastasis, with diabetes insipidus being the common presentation¹. It is difficult to differentiate pituitary adenoma from metastasis through radiological imaging alone and often require clinical picture and biopsy for confirmation. Prognosis of pituitary metastasis is poor and related to the histological subtype and stage of the primary malignancy rather than to the presence of such metastasis².

References

1. W. He et al. (2014) Metastatic involvement of the pituitary gland: a systematic review with pooled individual patient data analysis. *Pituitary* 18:159-168
2. Delattre JY et al. (1990) Metastasis to the pituitary stalk in a case of breast cancer. *Rev Neurol (Paris)* 146:455-456

No potential conflict of interest to disclose