

Introduction

The pituitary gland is an unusual site for metastatic spread from any primary malignancy, with reported prevalence varying depending on the method of assessment; 0.4% radiological, 1%-3.6% surgical and between 0.14 and 4% in autopsy studies in patients with advanced cancer. (1,3,4,7).

The first case of metastasis to the pituitary gland was described in 1857 by Benjamin in an autopsy of a patient with disseminated melanoma and later in 1913, Cushing reported this unique phenomenon as the cause of diabetes insipidus. Since then, there are reports of various primary malignancies metastasizing to the pituitary gland. (1,6).

The following case describes a patient with rapidly progressive vision loss, who subsequently was diagnosed with Pituitary adenocarcinoma secondary to prostate metastasis.

Initial Presentation

64 year old male presented to the Emergency Department with complaints of right eye visual disturbance for one week duration and left eye vision loss for the past three weeks, with gradual vision decline since onset. Prior to admission, was evaluated by two different ophthalmologists told his presentation was concerning for stroke, which prompted his presentation to the ED. On arrival reported complete blindness in his left eye and a gradual diminishment in his right eye.

Past medical history, labs and imaging on admission

Past Medical History

Acute primary angle-closure glaucoma of left eye
Hypertension
Prostate Cancer
History of intravenous drug abuse
History of hepatitis C

Social History

10 cigarettes/day >30 years
No alcohol use for 9 years
No drug use for 9 years, however "did multiple drugs"

Medications

Lisinopril 10 mg daily
Aspirin 81 mg daily

Surgical History

Prostatectomy with radiation 3 years prior

Physical Exam

HCF: Awake and alert. Follows simple commands, language intact.

CN: **L eye pupil does not react to light but does accommodate**, R eye pupil reacts to both light and accommodation, external ocular movements intact, **visual field full to confrontation on R eye, peripheral vision not intact in L eye**, L blink test negative, corneal reflex intact b/l, face symmetric, facial sensation intact, hearing intact to whisper, tongue and palate are in the midline. Rest of Neuro exam within normal limits.

Pertinent Labs

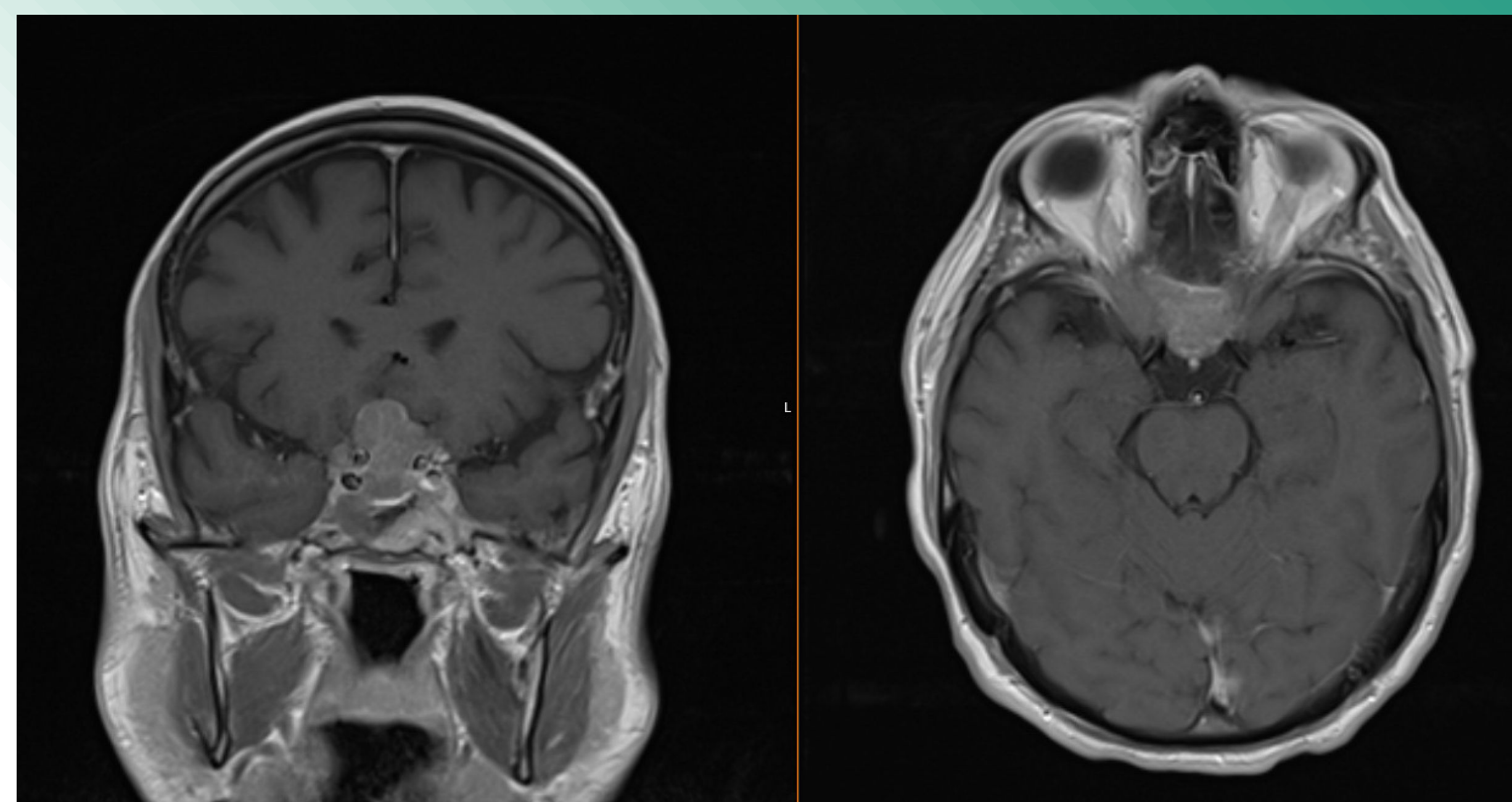
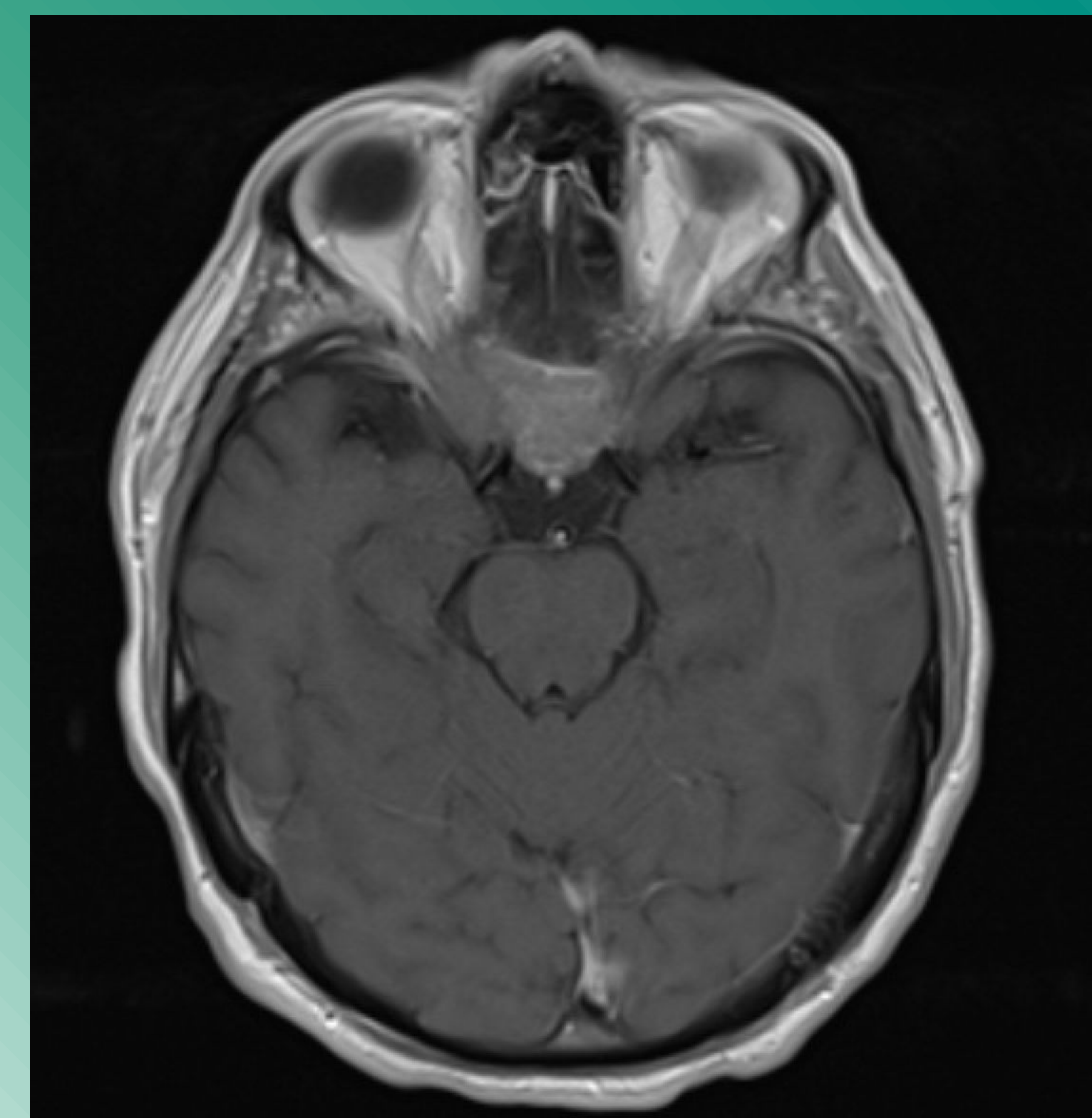
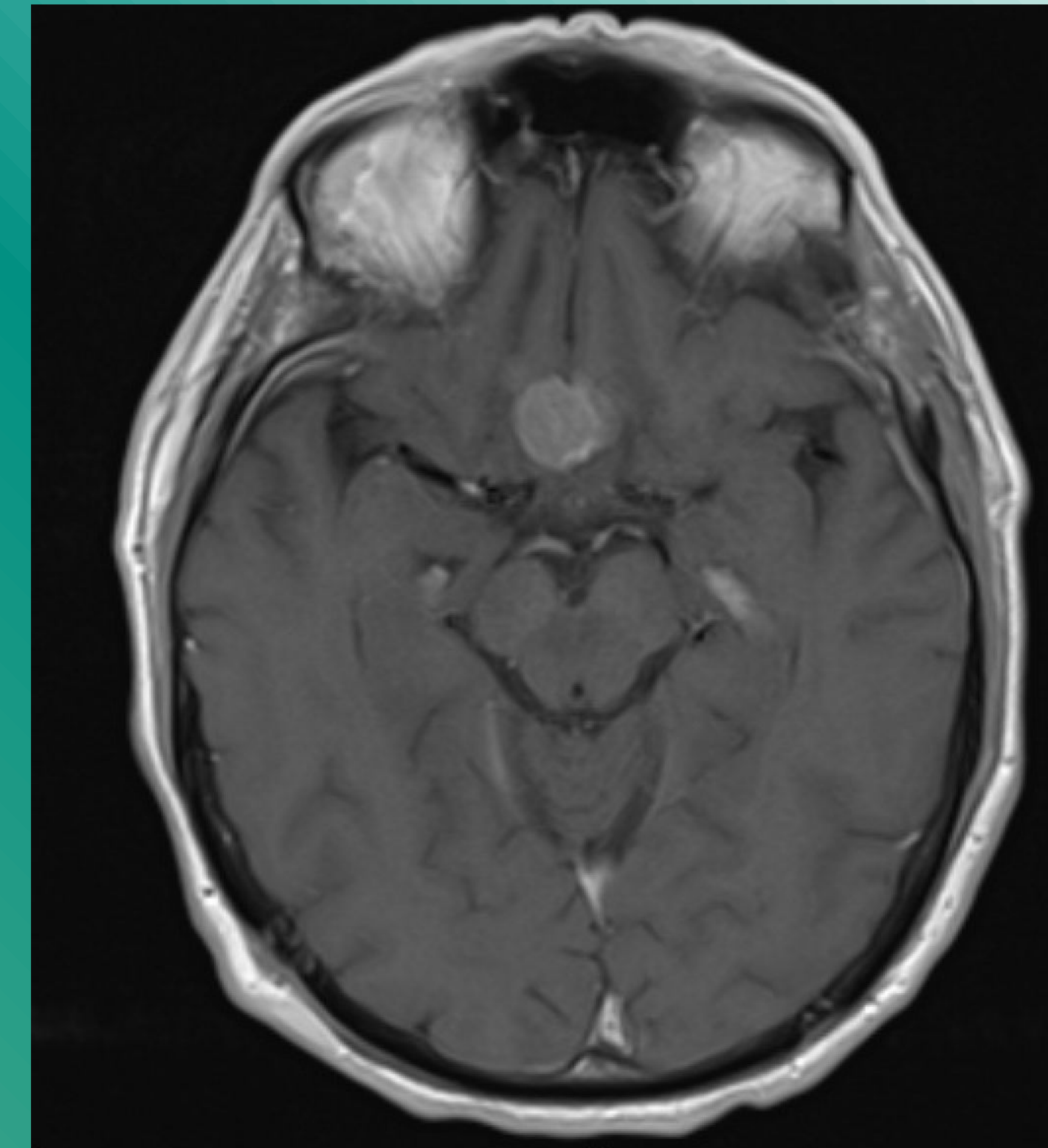
PSA: 21.96

Imaging

Non contrast CT head negative for acute findings. CT angio showed 0-49% stenosis in the ICA bilaterally and no other concerning findings. TTE with negative bubble study

MRI: lobulated locally invasive intrasellar tumor measuring 2.2cmx4.2cmx3.8cm. Characteristics of an invasive pituitary macroadenoma, with differential diagnosis skull base lesion such as chordoma, metastasis and myeloma

Clinical Imaging



Hospital Course and discharge

Due to vision loss, 1 g methylprednisolone IV was started daily for three days. Neurology, Ophthalmology and Neurosurgery consulted. Neurology recommendations:

- Obtain Pituitary panel: ACTH, GH, Prolactin, LH, FSH, and TSH

Ophthalmology recommendations:

- By eval his visual deficits had begun to improve Right eye vision was almost baseline Beginning to see nasally in left eye

Neurosurgery recommendations

- Patient will require multidisciplinary team both for inpatient and outpatient. Recommended Transfer to Tampa General Hospital.

Patient was transferred to Tampa General Hospital, with sphenoid mass biopsy confirming metastatic adenocarcinoma with prostatic primary, PET scan demonstrated metastasis to the bone. Patient began 10 cycles of radiation, with 98% of tumor eradication. Started on Relugolix 120 mg daily and Darolutamide 300 mg BID.

Literature Review and Conclusion

Pituitary metastasis (PM) is rare, accounting for only 0.4% of secondary intracranial tumors. With breast, lung and thyroid by far the most common primaries, with prostatic carcinoma being one of the least common causes (1,2,4,6,8). Most cases are asymptomatic and are incidentally discovered during end-stage malignant course. Symptoms include: visual field impairment or optic neuropathy, cranial nerve palsies, anterior pituitary dysfunction and diabetes insipidus. (3,6,7,8) Trans-sphenoidal surgery resection being the first line of therapy followed by adjuvant chemoradiotherapy and endocrinological evaluation for hormonal supplementation or a conservative approach. (3,5,7)

With the advent of novel medical treatments and imaging studies for early detection, pituitary metastasis are now discovered more frequently and should not be overlooked as a site for metastasis in patients with history of cancer. Patients should be treated using a multimodal approach, which has been shown to extend median survival of 16 months.

References

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