81-year-old male with history of cancer on chemotherapy presents with right sided hemiparesis and dysarthria

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CT Head w/o contrast
MRI Brain w/o Gd
Axial T2 FLAIR
MRI Brain w/o Gd

DWI

ADC
Axial T1 Post-Gd
Intracranial Metastases from Prostate Carcinoma
CT Head w/o contrast

Isodense to Hyperdense superficial mass (blue arrows) with adjacent vasogenic edema (yellow arrow)
Axial Post-Gd

Extensive nodular dural thickening with areas of enhancement over left cerebral convexity (arrows)
DWI MRI Brain w/o Gd

Mass is diffusion restricting (arrows)
Intracranial Metastases from Prostate Cancer

- Most common intracranial location of prostate cancer metastases: Meninges (67%)
- Neurologic features: Headache, seizures, motor deficits, intracranial hemorrhage, subdural hematoma, mental status changes, gait disturbance, nausea/vomiting, vertigo, multiple CN palsies
Imaging Characteristics

- CT Head
  - Mass may be isodense, hypodense or hyperdense in comparison to normal brain parenchyma
  - Variable degree of vasogenic edema
  - Post-contrast: enhancement can be variable and intense, nodular, punctate or ring-enhancing
Imaging Characteristics

- MRI brain
  - T1: Iso to hypointense, intrinsic high signal if hemorrhagic or occasionally, if calcified
  - T1 + contrast: Enhancement uniform, punctate, ring-enhancing
  - T2: variable
  - FLAIR: hyperintense typically, hyperintense peritumoral edema of variable amount
  - DWI/ADC: Lesion often diffusion restricting. Edema, if present, demonstrates increased diffusivity
Differential Diagnosis

• Meningioma
  – Extra-axial, homogenous enhancement
  – Often calcification
  – Dural mass with “dural tail” is typical but not specific
  – Hyperostosis,

• Chronic subdural hemorrhage
  – Trauma history, fluid-fluid levels, varying density or intensity

• CNS lymphoma
  – Diffusely enhancing dural mass, often multifocal
  – Low T2 signal due to hypercellularity
References


Citation: Krothapalli N, Wolansky L. Intracranial Metastases from Prostate Carcinoma. Radiology Online. (2022).