57-year-old male presents with rapidly ascending weakness of 2 months duration, skin hyperpigmentation and leukonychia

John J. DeBevits IV, MD
Leo Wolansky, MD

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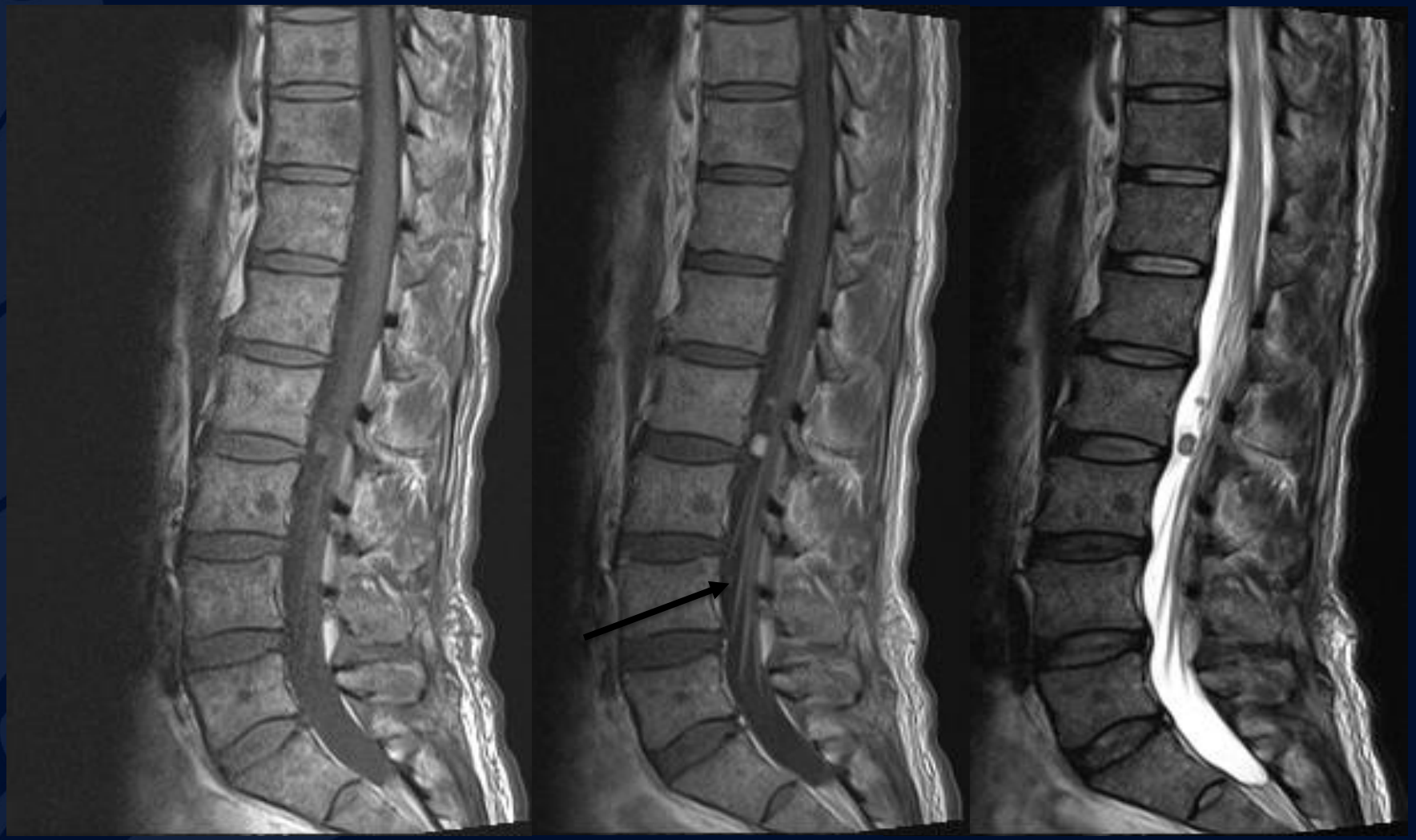

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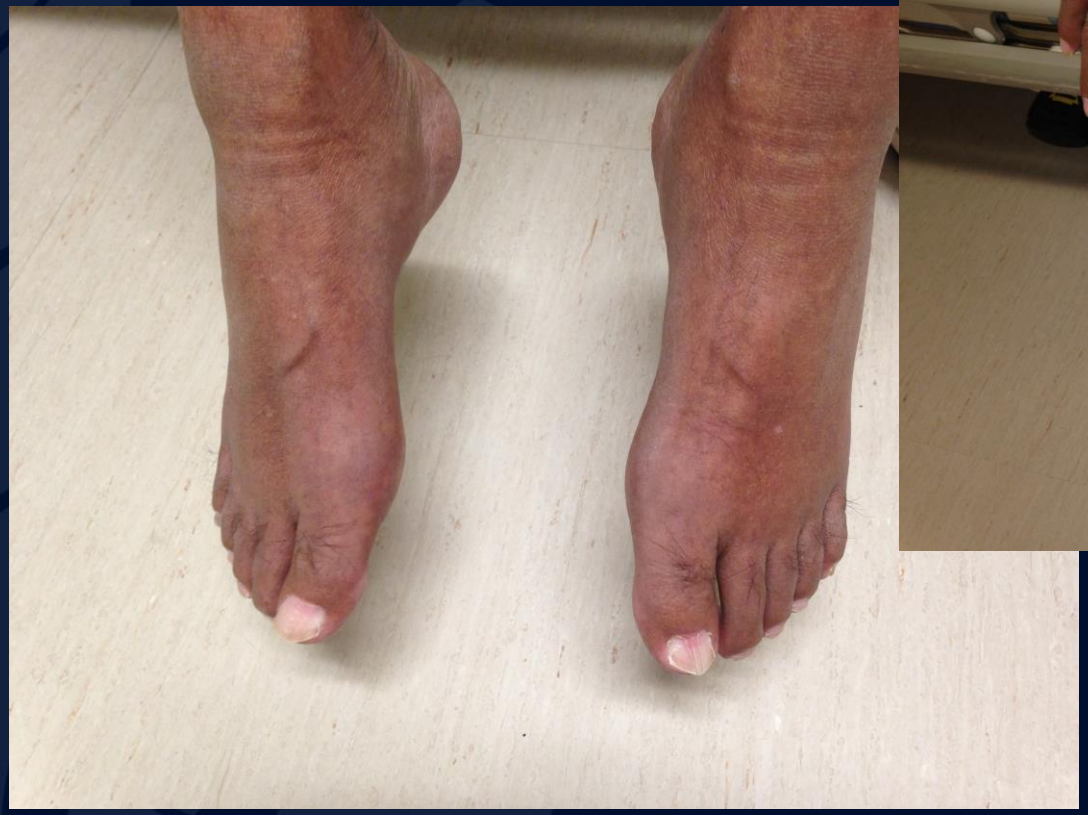

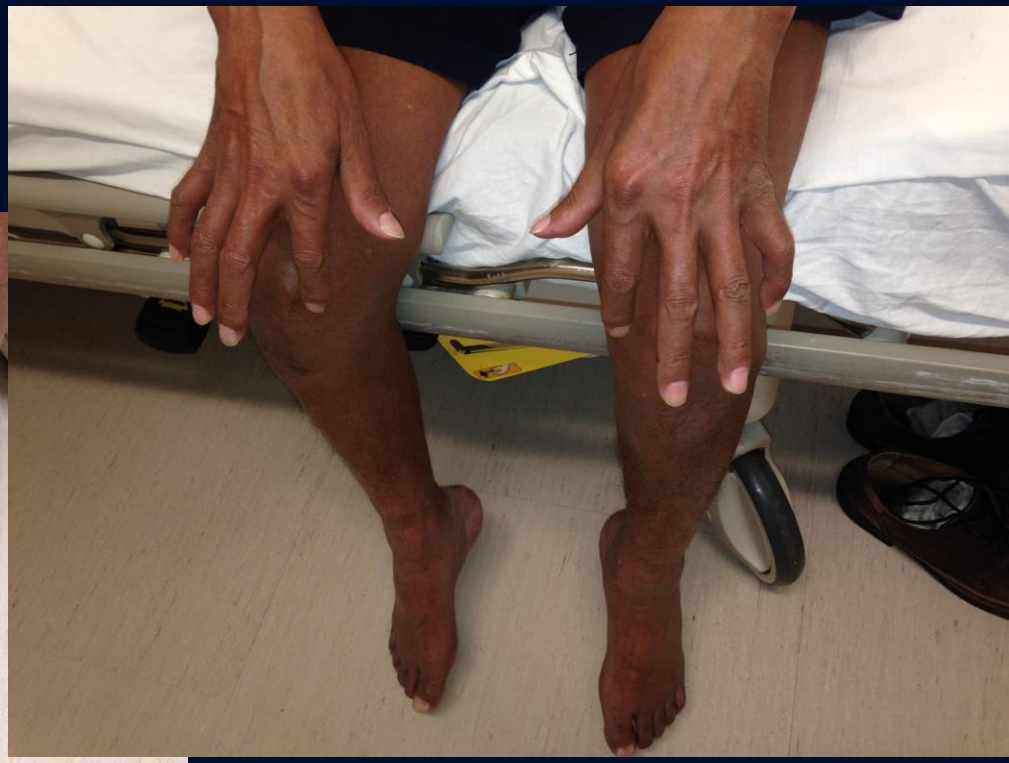

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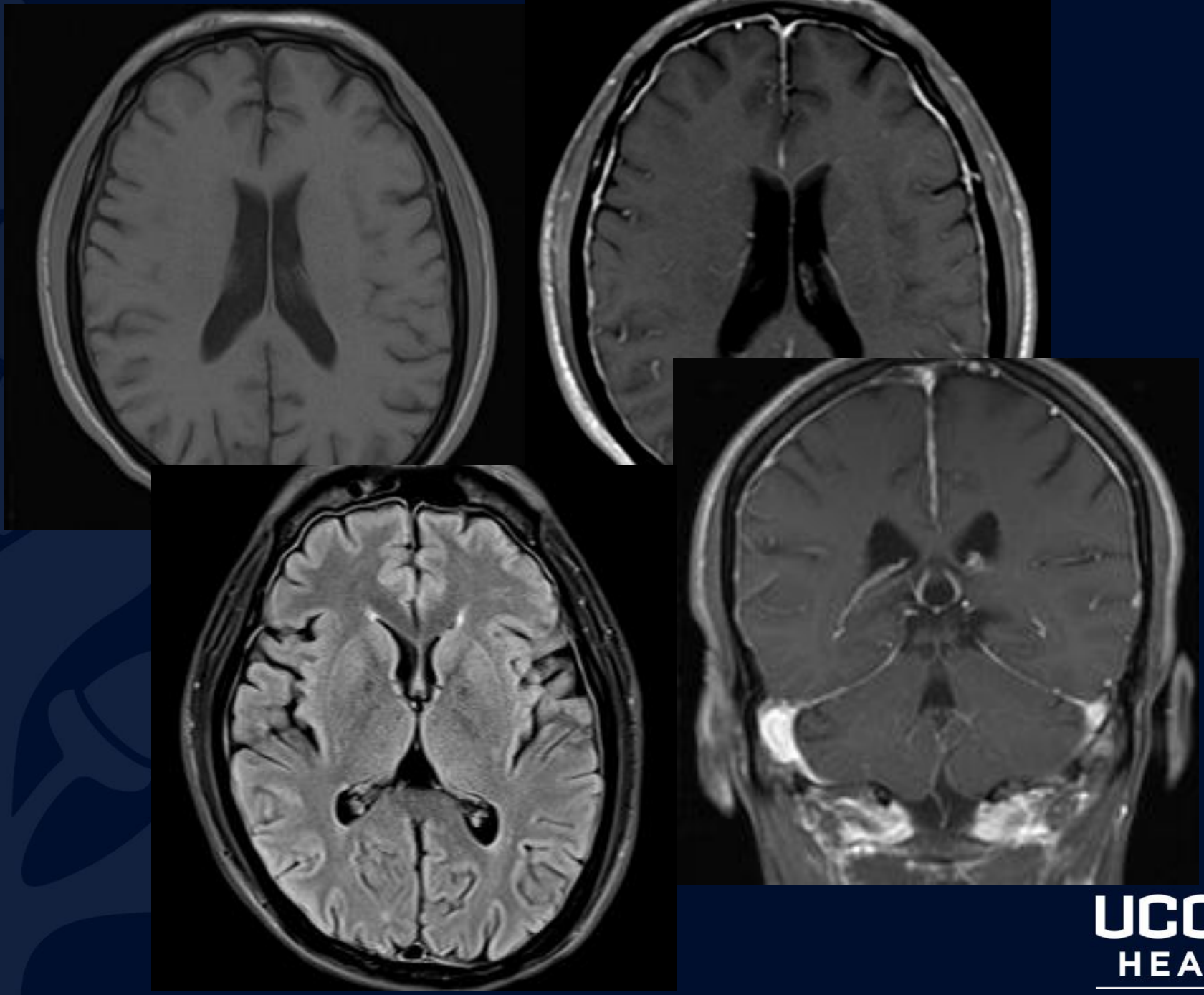

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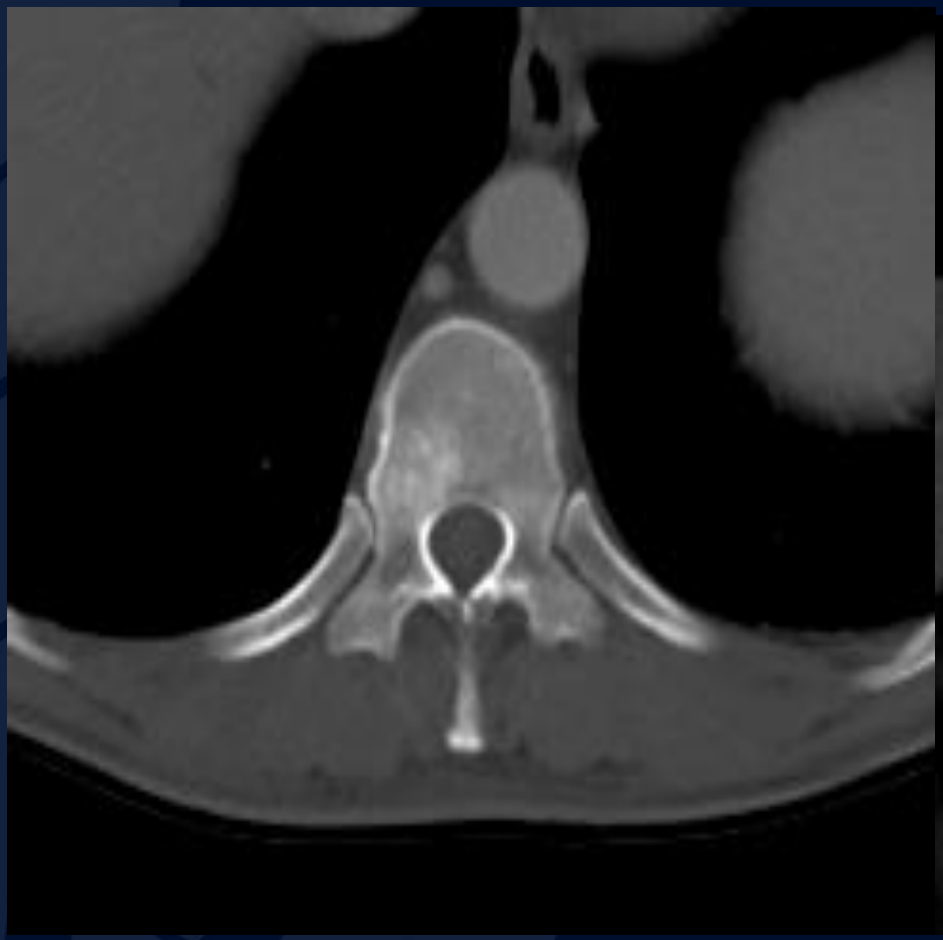

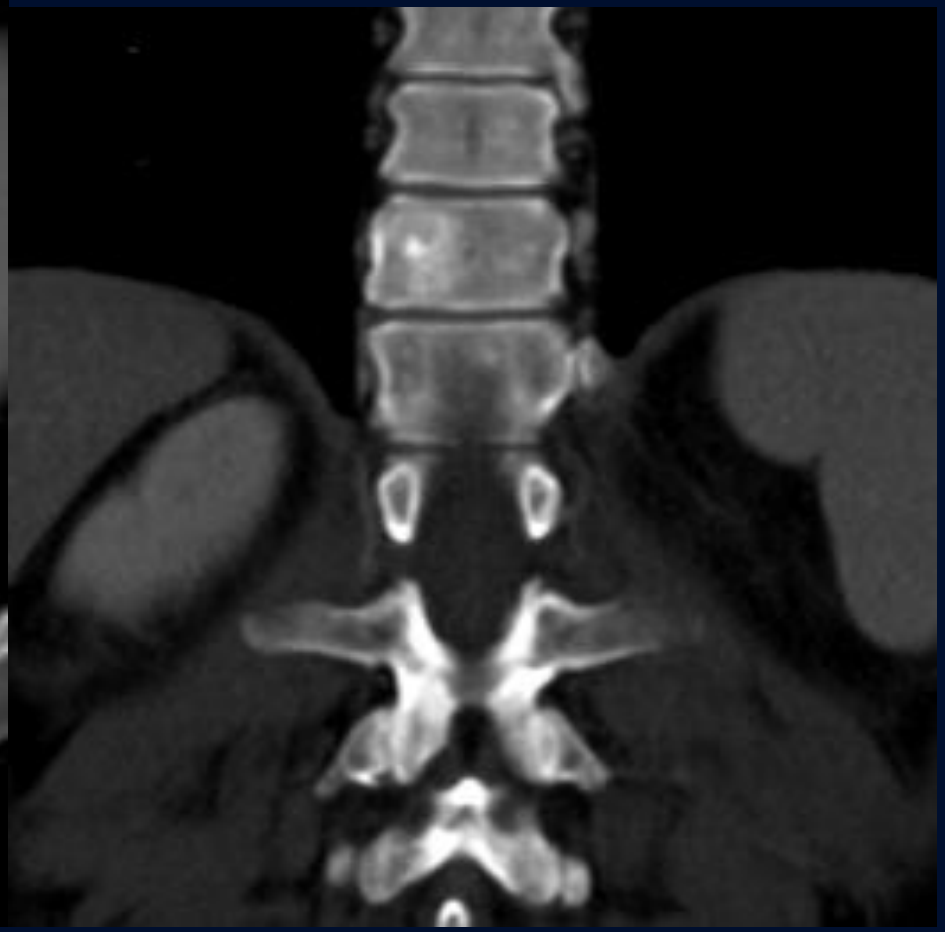

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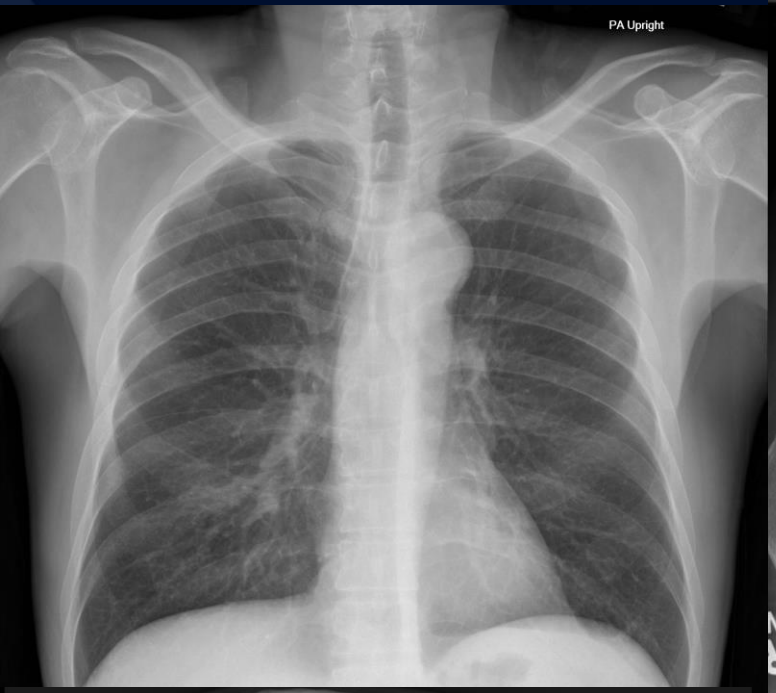

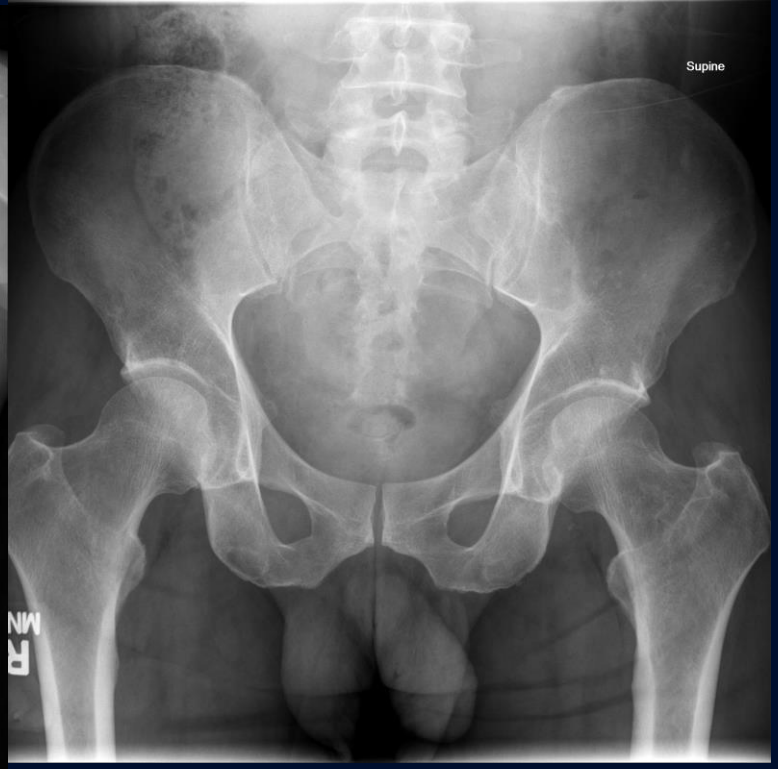

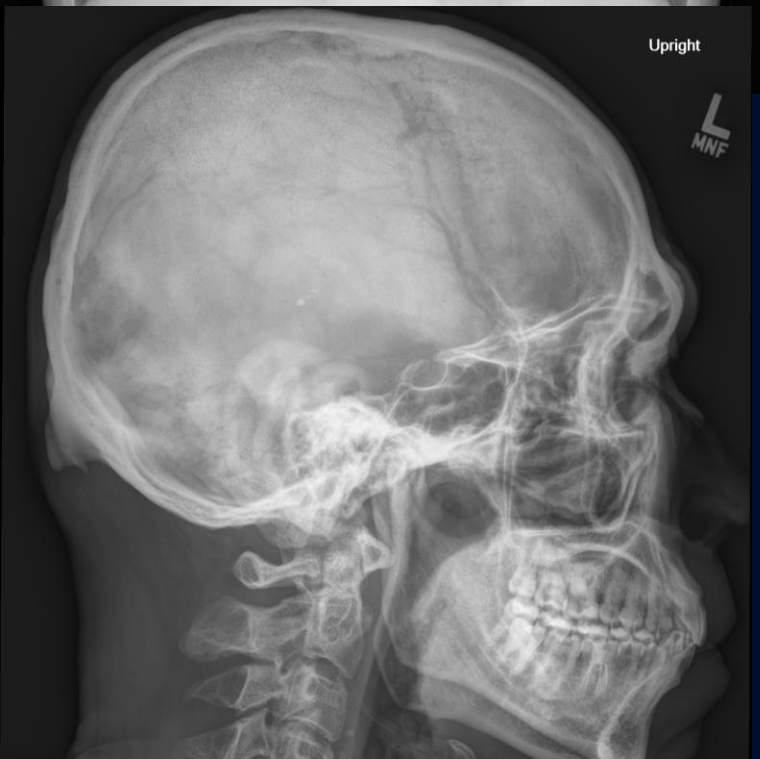

By this time, the patient was discovered to have a plasma dyscrasia, so a skeletal survey was performed. Representative images shown.

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POEMS syndrome

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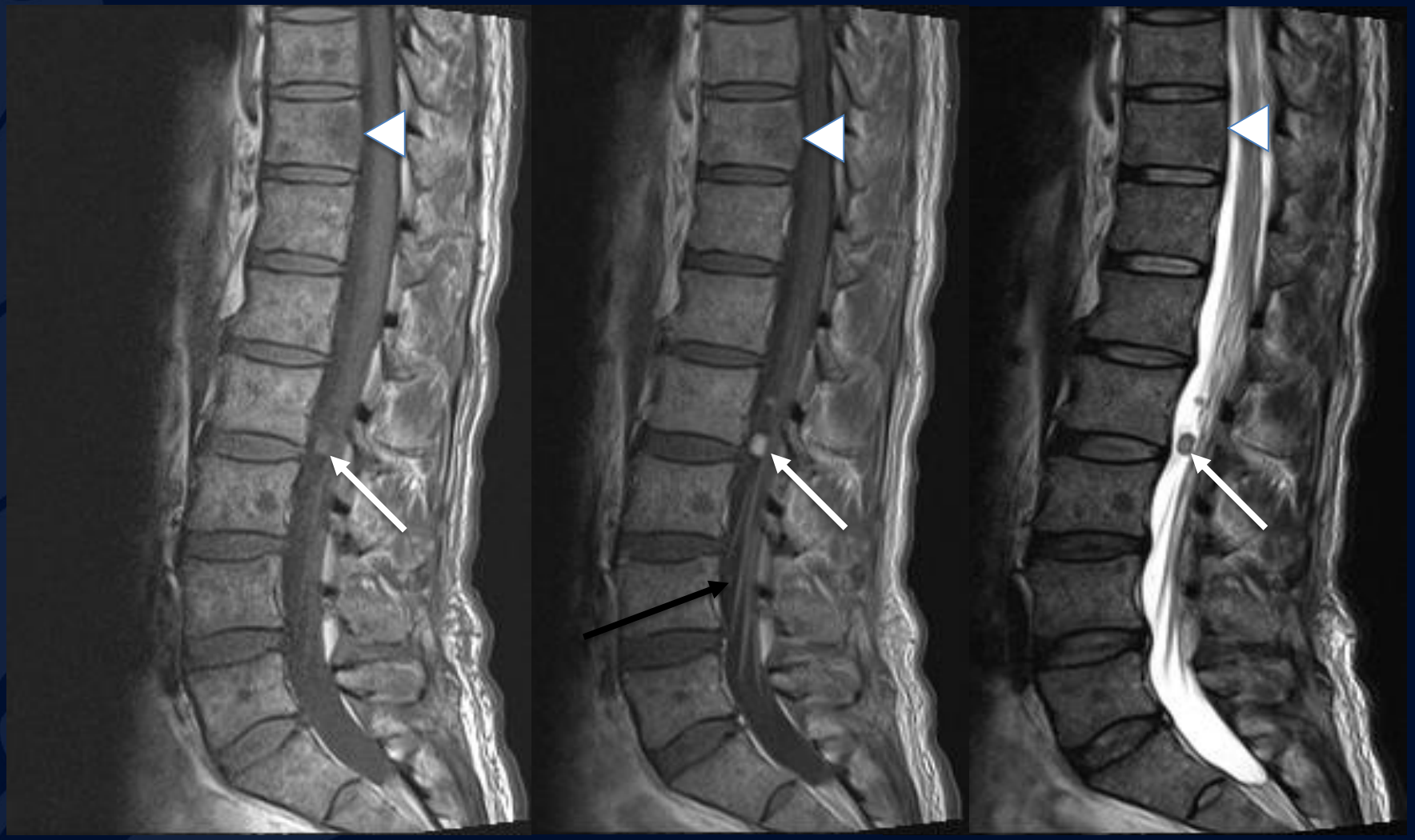

Pre- and postcontrast T1 sagittal images of the lumbar spine demonstrate discrete enhancing lesions on the cauda equina.

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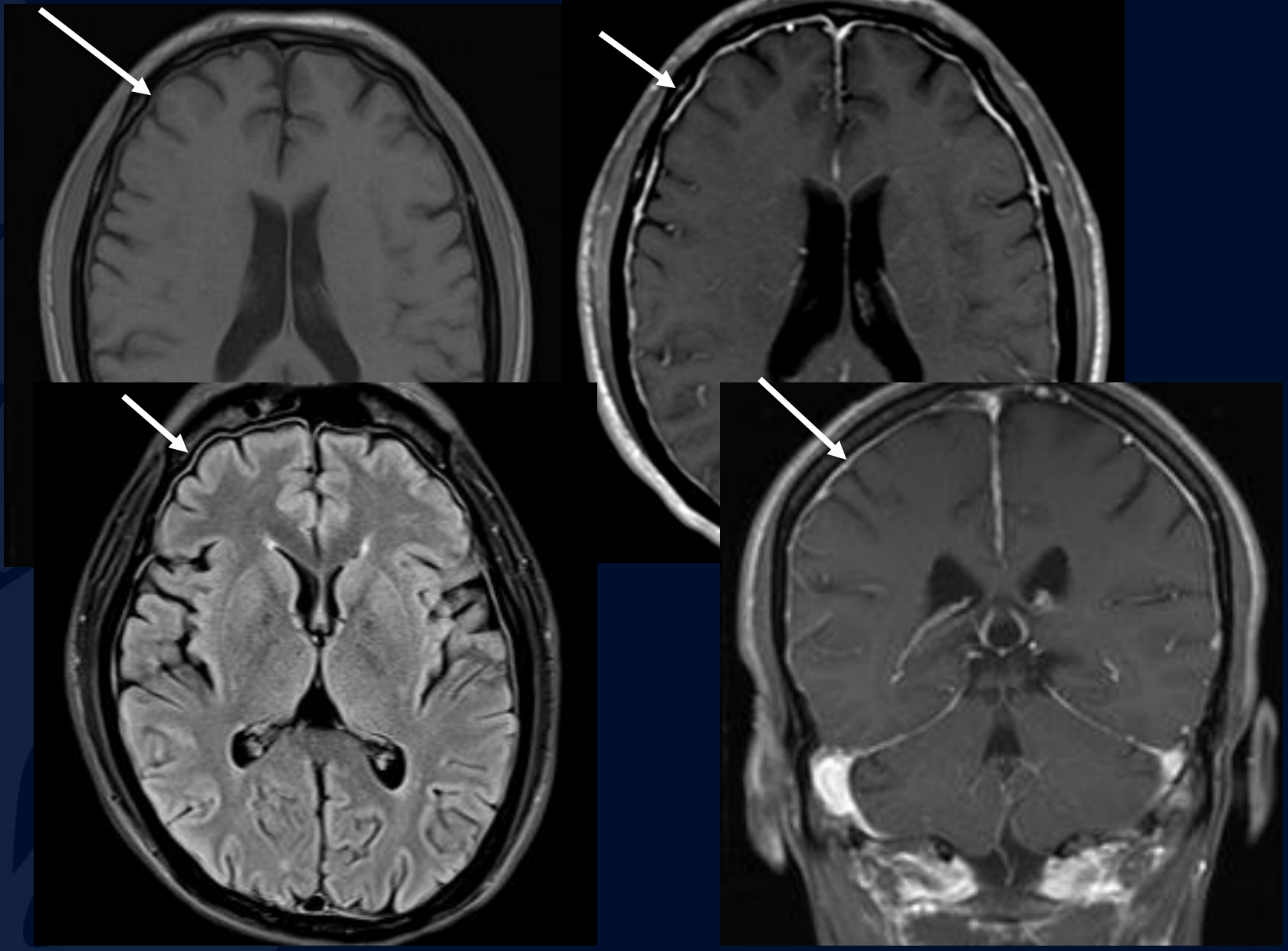

CE axial T1 MRI demonstrates diffuse linear enhancement of the dura. No intraparenchymal lesions were seen.

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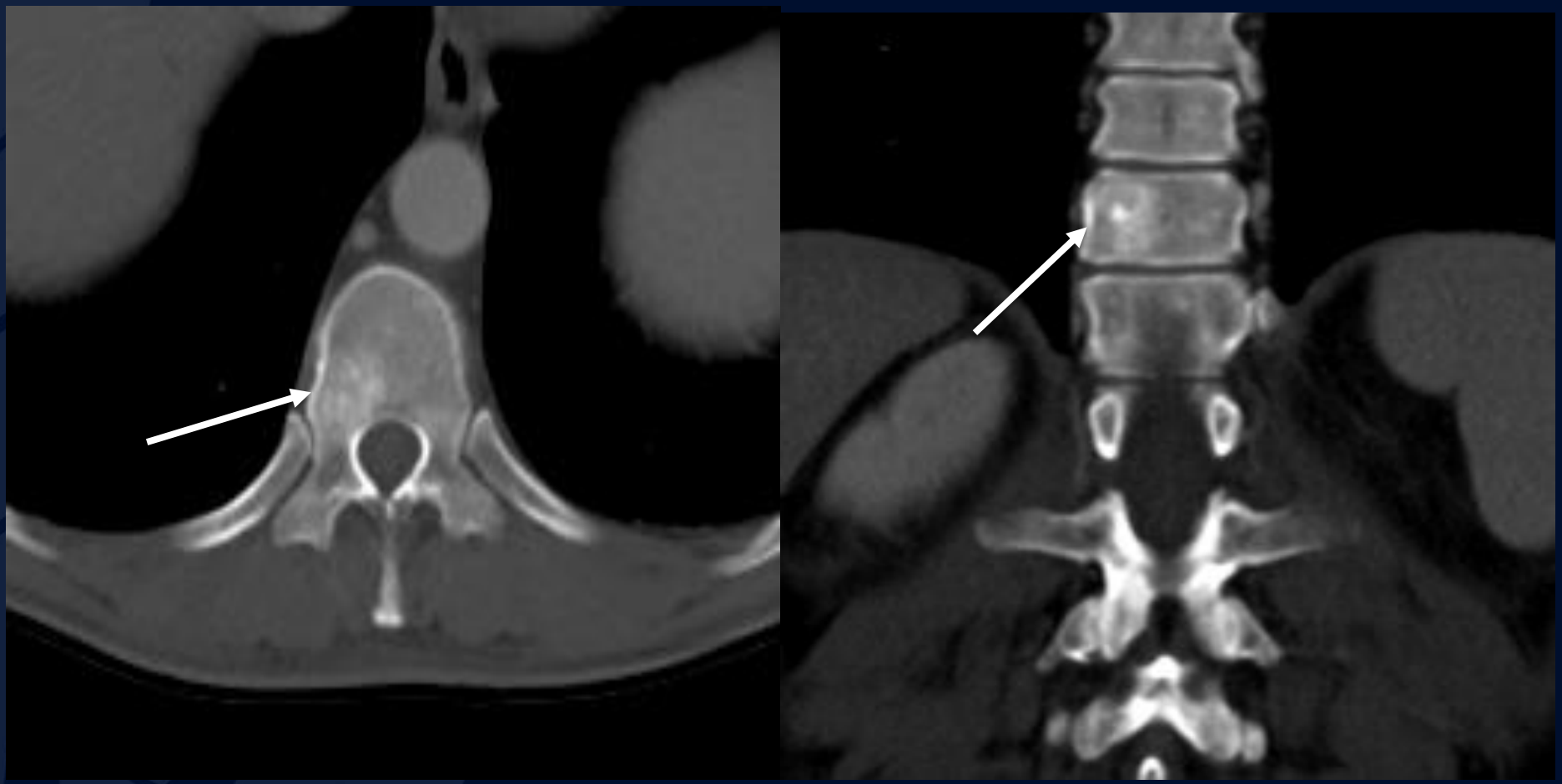

Ill-defined sclerotic lesion within the posterior vertebral body and pedicle of a mid-thoracic vertebra.

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POEMS syndrome

Clinical syndrome comprised of the constellation of **P**olyneuropathy, **O**rganomegaly, **E**ndocrinopathy, **M**onoclonal gammopathy, **S**kin changes

The etiology is unknown, but proinflammatory cytokines seem to be involved, including increased VEGF in blood, as well as IL-6, TNF-α, and Interleukin-1β

The prognosis and response to treatment of POEMS has even been tracked using VEGF levels, which, in addition, is also a minor criterion for diagnosis of the disease

This case was atypical in that initial images suggested lumbar metastatic disease a primary intracranial CNS malignancy, triggering further work-up

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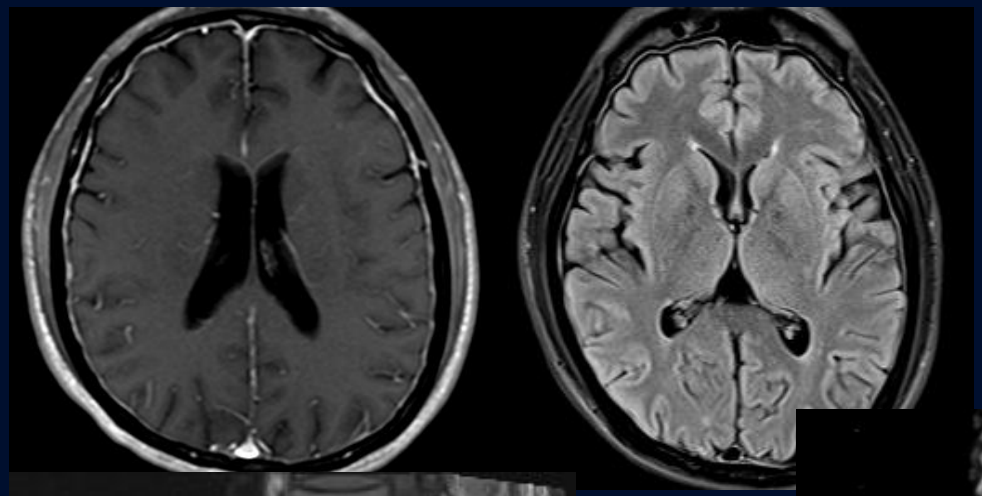
Imaging findings

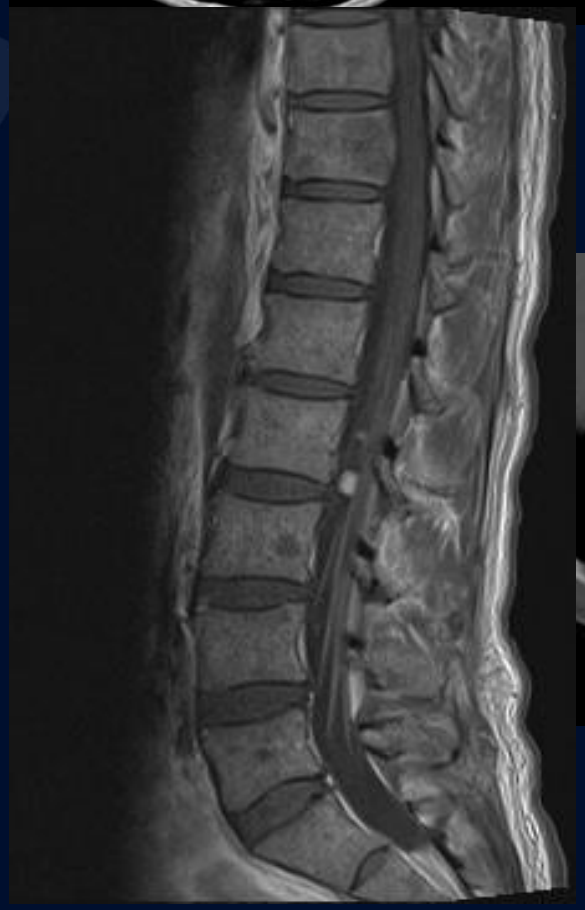
Most common in the setting of osteosclerotic myeloma, typically single lesions, found in the axial skeleton, flat bones, and long bones. A mixed lytic-blastic type of osseous involvement may also be seen. Predominantly lytic lesions are atypical in this entity.

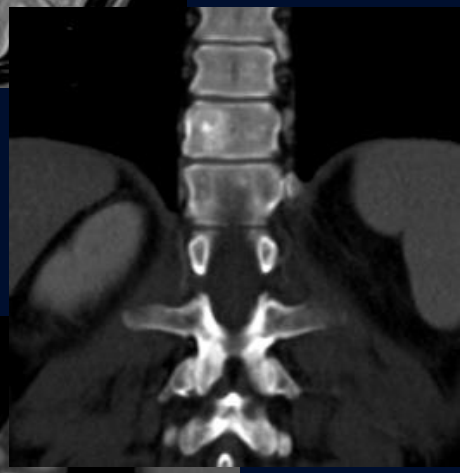
T2 and FLAIR MRI imaging has shown to be very useful, demonstrating diffuse thickening of the dura and spinal nerve roots

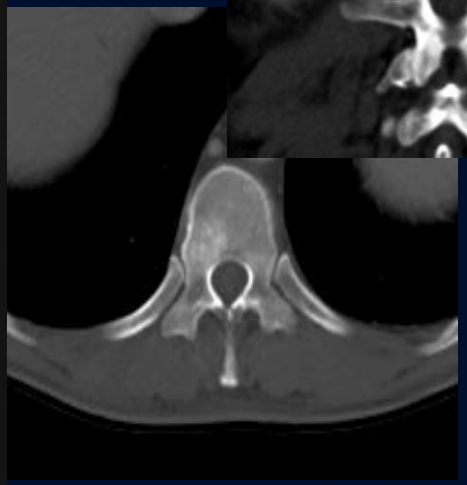
Post-contrast T1-weighted MRI images demonstrate thickened, enhancing dura and spinal nerves

Additional findings may mimic CNS malignancy like a “drop” metastasis appearance, such as in this patient









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Differential diagnosis

Dural enhancement

- Meningitis
- Metastasis
- Intracranial hypotension
- Neurosarcoidosis
- Post-op/post-trauma

Spinal nerve thickening/enhancement

(in relative order of chronicity, starting with most acute)

- Guillain-Barre syndrome
- Chronic inflammatory demyelinating polyneuropathy
- POEMS syndrome

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