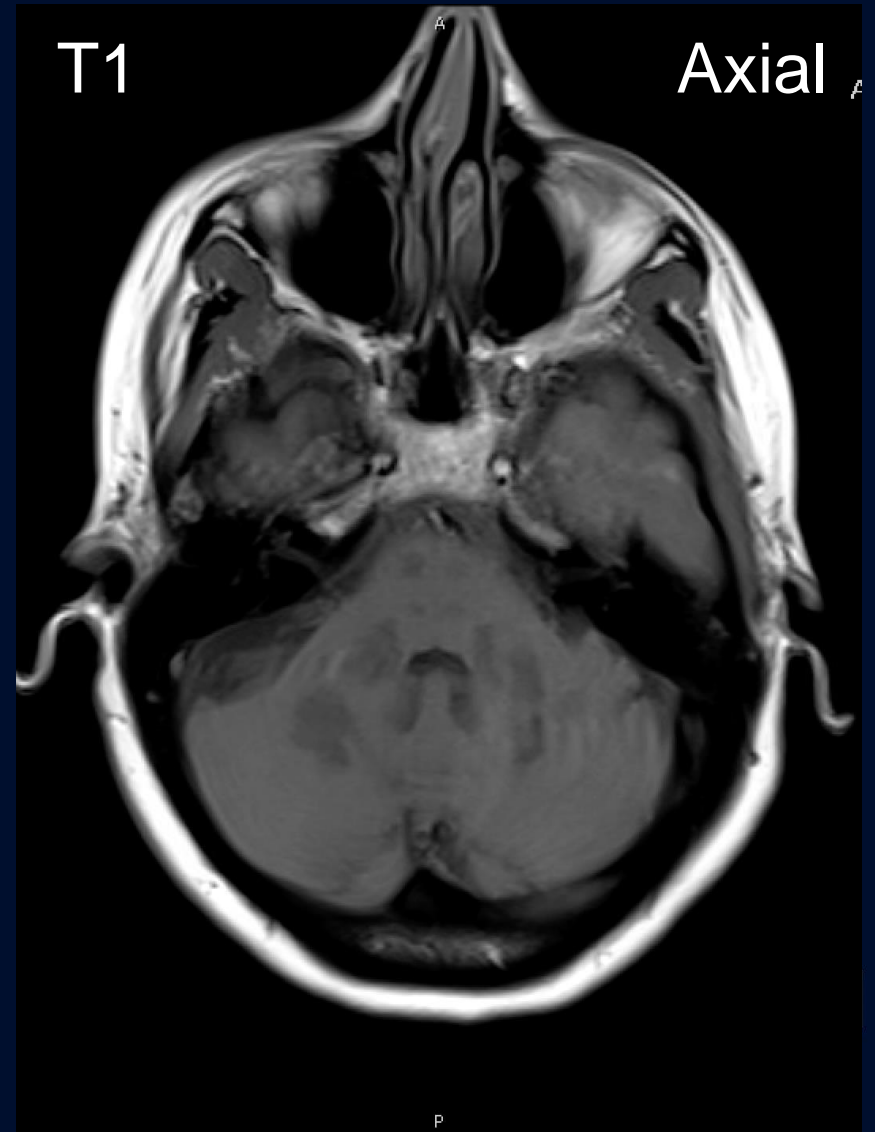
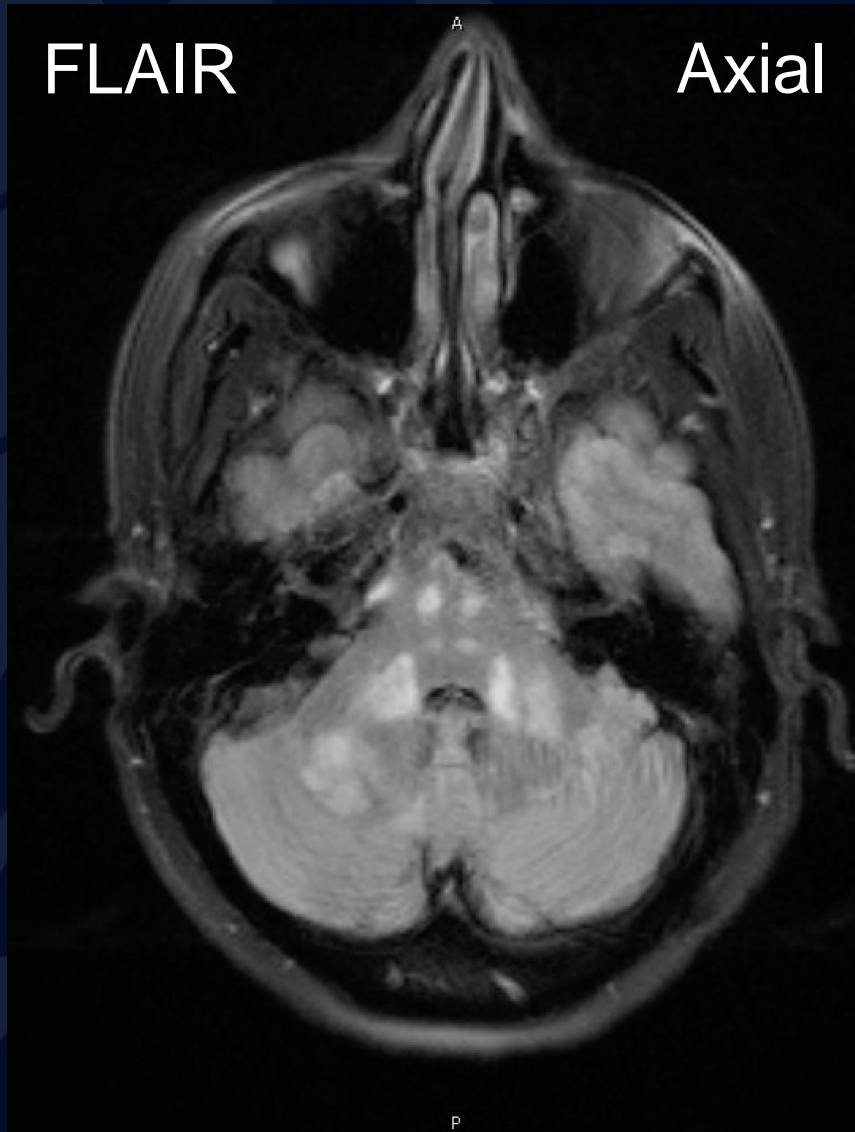


50-year-old female with  
progressive difficulty walking and  
paresthesias

Calvin Park, MS3

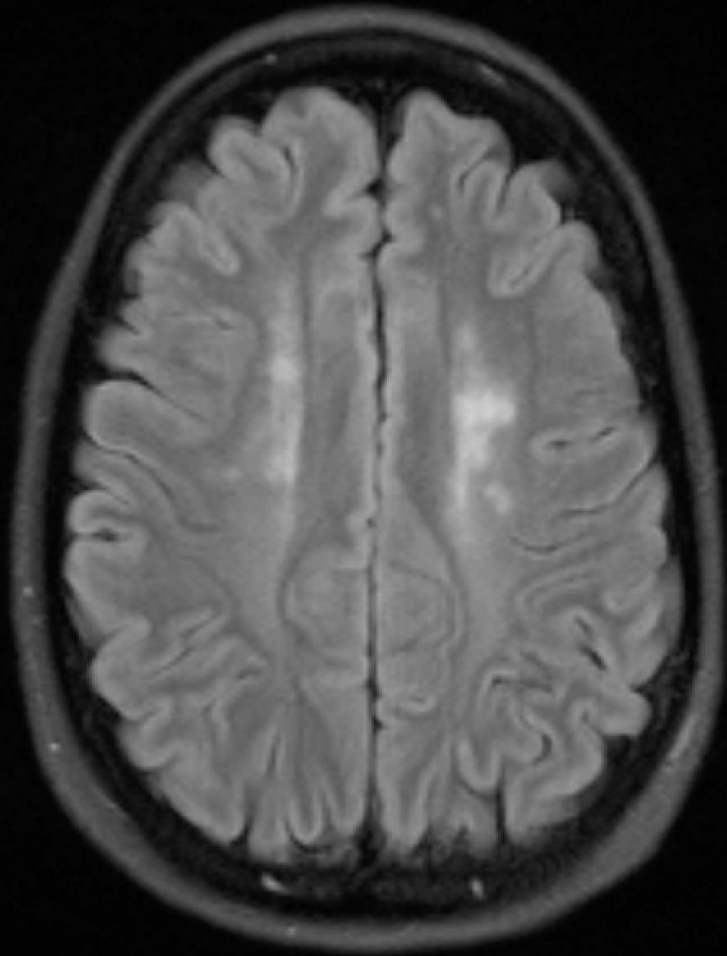
# MRI Brain without Contrast



# MRI Brain without Contrast

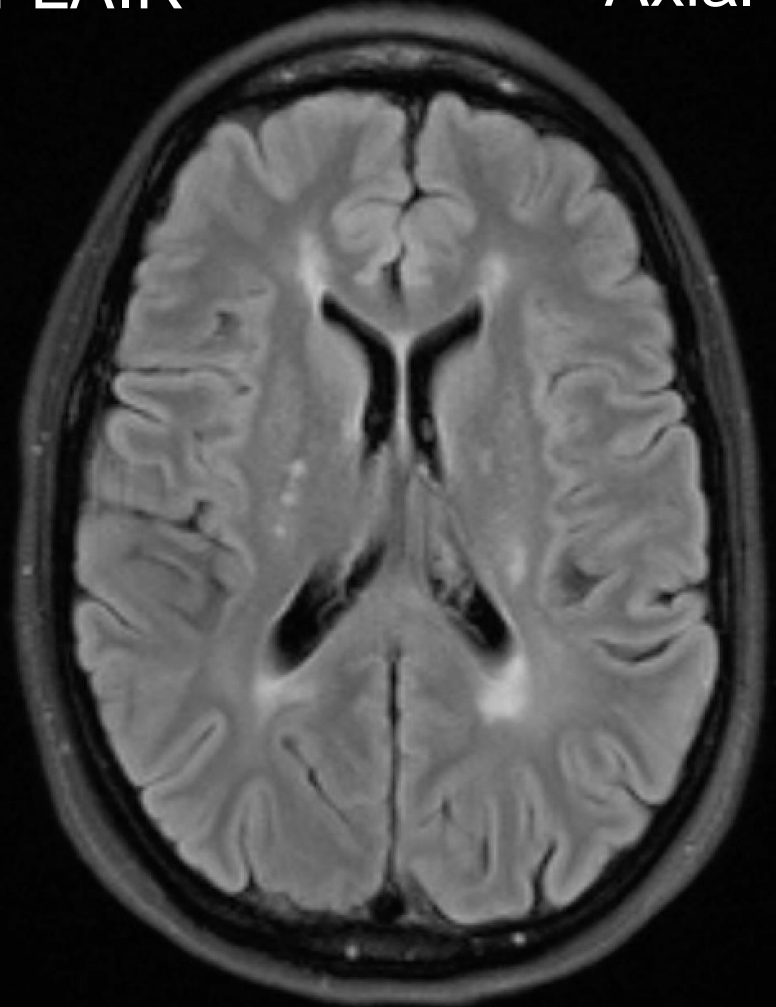
FLAIR

Axial

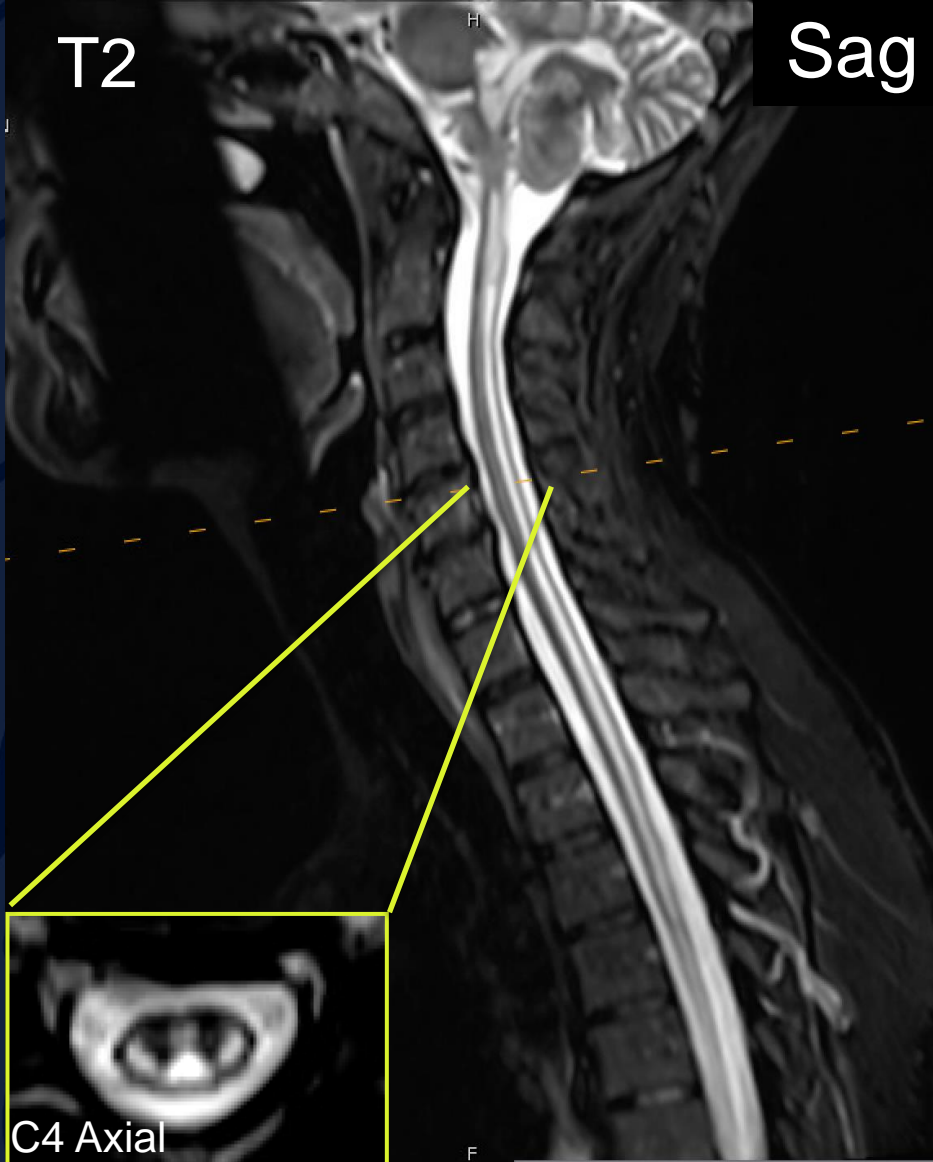


FLAIR

Axial



# MRI Spine without Contrast

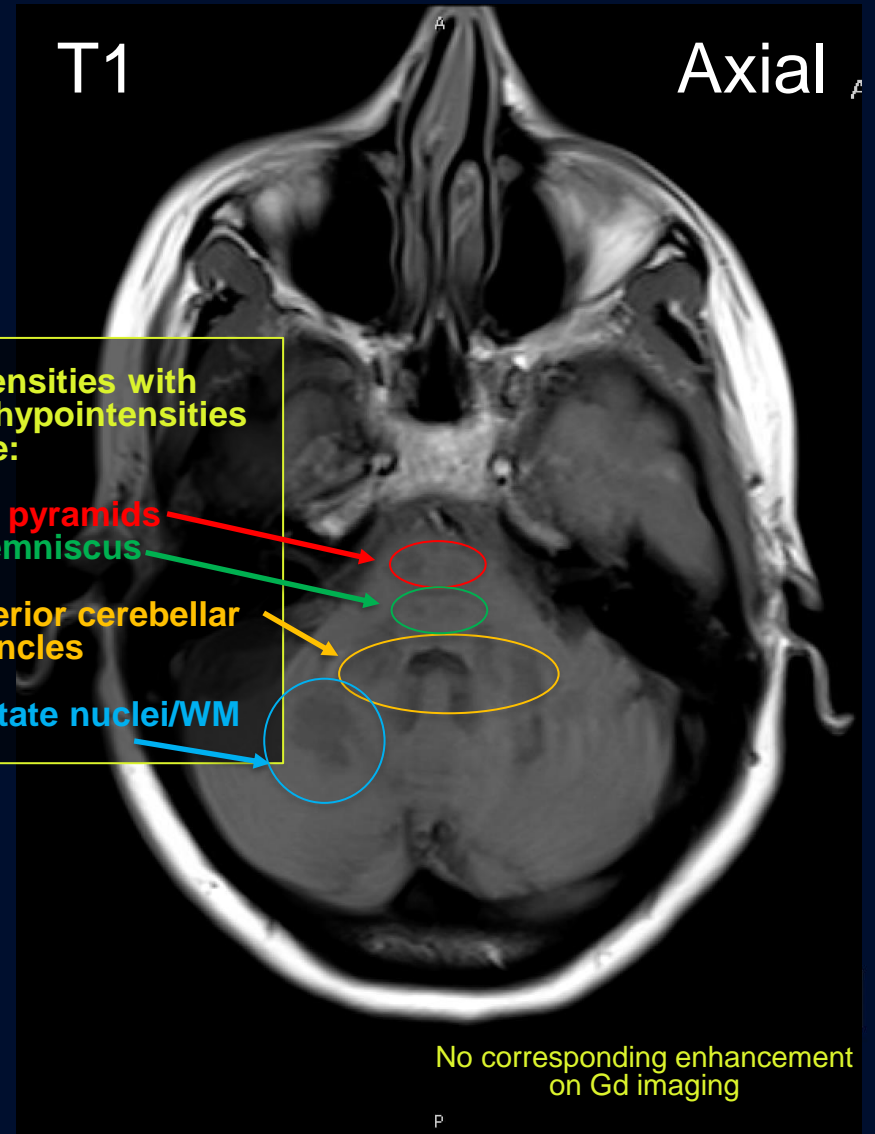
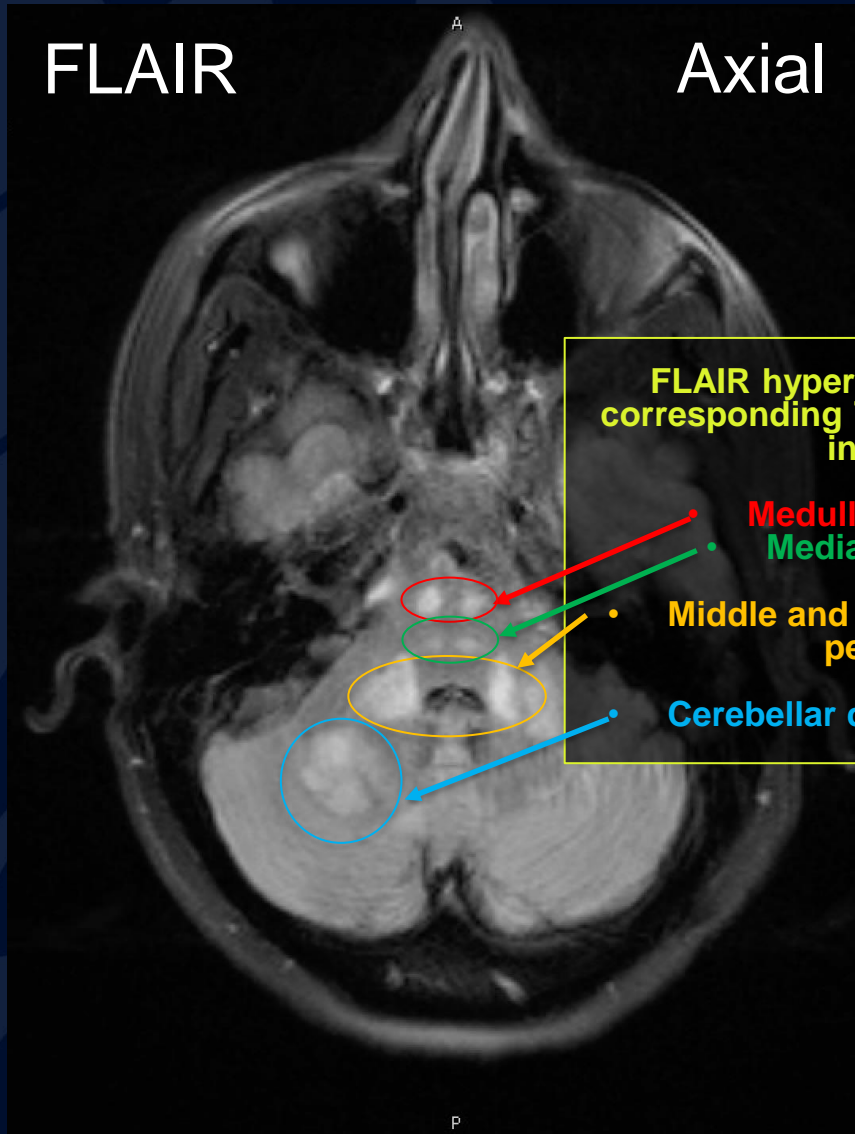


A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. It features detailed vein patterns and a lobed edge.

?

# Leukoencephalopathy with Brainstem and Spinal Cord Involvement and Lactate Elevation (LBSL)

# MRI Brain without Contrast



FLAIR hyperintensities with corresponding T1 hypointensities in the:

- Medullary pyramids
- Medial lemniscus
- Middle and inferior cerebellar peduncles
- Cerebellar dentate nuclei/WM

# MRI Brain without Contrast

FLAIR

Axial

FLAIR

Axial

A

A

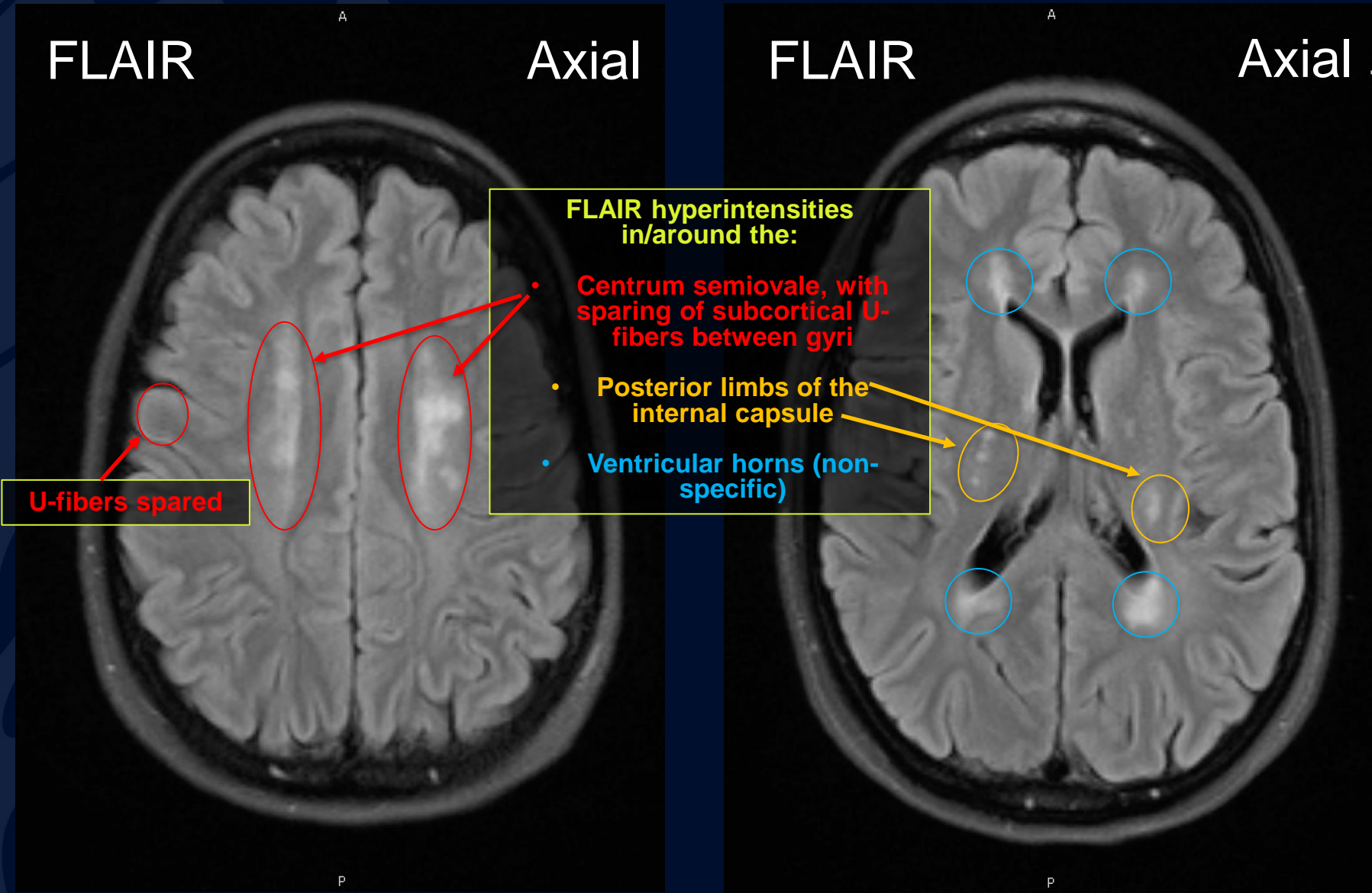
P

P

FLAIR hyperintensities in/around the:

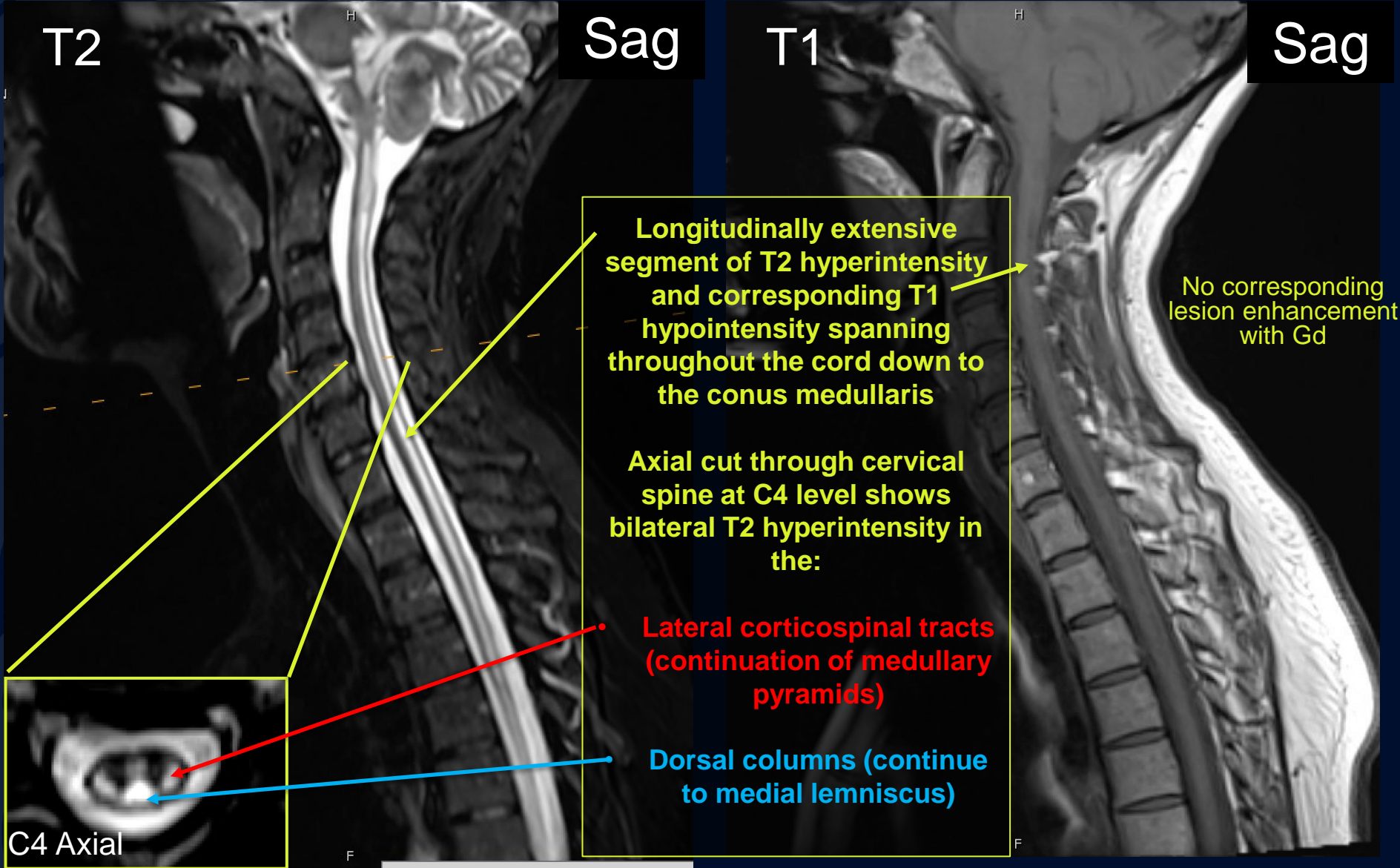
- Centrum semiovale, with sparing of subcortical U-fibers between gyri
- Posterior limbs of the internal capsule
- Ventricular horns (non-specific)

U-fibers spared





# MRI Spine without Contrast



# Leukoencephalopathy with Brainstem and Spinal Cord Involvement and Lactate Elevation (LBSL)

- LBSL is a rare, recently (2003) identified inherited leukodystrophy
  - Mutation in DARS2 gene encoding mitochondrial aspartyl-tRNA synthetase (mt-AspRS)
- Most commonly manifests in children as ataxia, spasticity and loss of proprioception
- Progresses with age, with later onset associated with better prognosis
- Definitive diagnosis by brain and spine MRI plus genetic testing
- Patients are treated symptomatically

# Imaging Findings

MRI Changes	LBSL ( <i>n</i> = 83) <sup>a</sup> , proportion of patients (%)
<b>Supratentorial</b>	
Cerebral WM with subcortical sparing*	92.8
Posterior part of the corpus callosum	77.1
Posterior limb of the internal capsule	81.9
<b>Infratentorial</b>	
Lateral corticospinal tracts or dorsal columns of the spinal cord	89.2
Pyramidal tract and/or medial lemniscus of the brainstem	94.0
Superior cerebellar peduncles	73.5
Inferior cerebellar peduncles	69.9
Intraparenchymal trajectories of the trigeminal nerve	63.9
Mesencephalic trigeminal tracts	47.0
Anterior spinocerebellar tracts of the medulla oblongata	32.5
Cerebellar white matter	88.0

Highlighted features were  
pertinent to this case

Muthiah et al. 2021

# References

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