

An Unusual Pain Management Diagnosis:

Incidental discovery of low-grade glioma in a patient with cervicothoracic pain

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Background

Low-grade gliomas (LGGs):

- Primary central nervous system tumors originating from glial cells.¹
- Characterized by indolent growth and generally favorable prognosis.²
- Variable clinical presentations, often with nonspecific symptoms.¹
- Incidental discovery is not uncommon.^{1,2}

Pertinent Negative Laboratory Tests			
Serum autoimmune/paraneoplastic panel			CNS Demyelinating panel
AMPA-R Ab CBA	GABA-B-R Ab CBA	PCA-1	NMO/AQP4 (serum)
Amphiphysin Ab	GAD65 Ab Assay	PCA-2	MOG (serum)
AGNA-1	GFAP IFA	PCA-Tr	MOG (CSF)
ANNA-1	LG11-IgG CBA	Septin-7 IFA	
ANNA-2	mGluR1 Ab IFA	DPPX Ab CBA	
ANNA-3	Neurochondrin IFA	IgLON5 CBA	
CASPR2-IgG CBA	NIF IFA	PDE10A Ab IFA	
CRMP-5-IgG	NMDA-R Ab CBA	TRIM46 Ab IFA	

TABLE 1. An assortment of pertinent negative neuro-immunology studies.

Discussion

- Management of LGGs hinges on early identification due to unpredictable growth patterns and potential for malignant transformation.^{1,2}
- The patient's history of previously noted FLAIR signal abnormalities raised additional diagnostic complexities, suggesting a potential underlying neuroinflammatory component or coexisting pathology.
- Multidisciplinary involvement of specialists facilitated comprehensive patient management, expedited care and optimized sequencing of interventions.

Case Description

A 45-year-old female with history of chronic fatigue syndrome, anxiety, and remote prior left insular brain imaging abnormality initially presented for chiropractic management of left cervicothoracic and periscapular pain. Examination was notable for hyperreflexia. Cervical MRI revealed multilevel spondylosis and moderate C4-C5 left foraminal stenosis; no spinal canal stenosis or cord compression. The patient was referred to pain management; exam confirmed bilateral Hoffman's sign, ankle clonus and lower extremity predominant hyperreflexia. The patient's pain was suspected to be of myofascial origin due to cervical spondylosis. Left-sided cervical trigger point injections were performed. Thoracic and brain MRIs were ordered to further evaluate upper motor neuron signs. T-spine MRI was negative for cord compression or signal abnormality (Figure 1), however non-contrast MRI brain revealed left frontal lobe lesion highly suspicious for LGG (Figure 2A). An MRI brain with contrast further characterized the non-enhancing lesion in the left middle frontal gyrus (Figure 2B). The patient was referred for neurosurgical evaluation, subtle left-hand weakness was noted discordant with the presumed lesion location. Differential included glioma, inflammatory process, or concomitant secondary process. The patient was referred to neuro-immunology, who recommended serum autoimmune panel and CNS demyelinating panel. Autoimmune workup was reassuring against an inflammatory cause of the lesion (Table 1). The patient underwent awake left frontal craniotomy for resection and pathological confirmation.

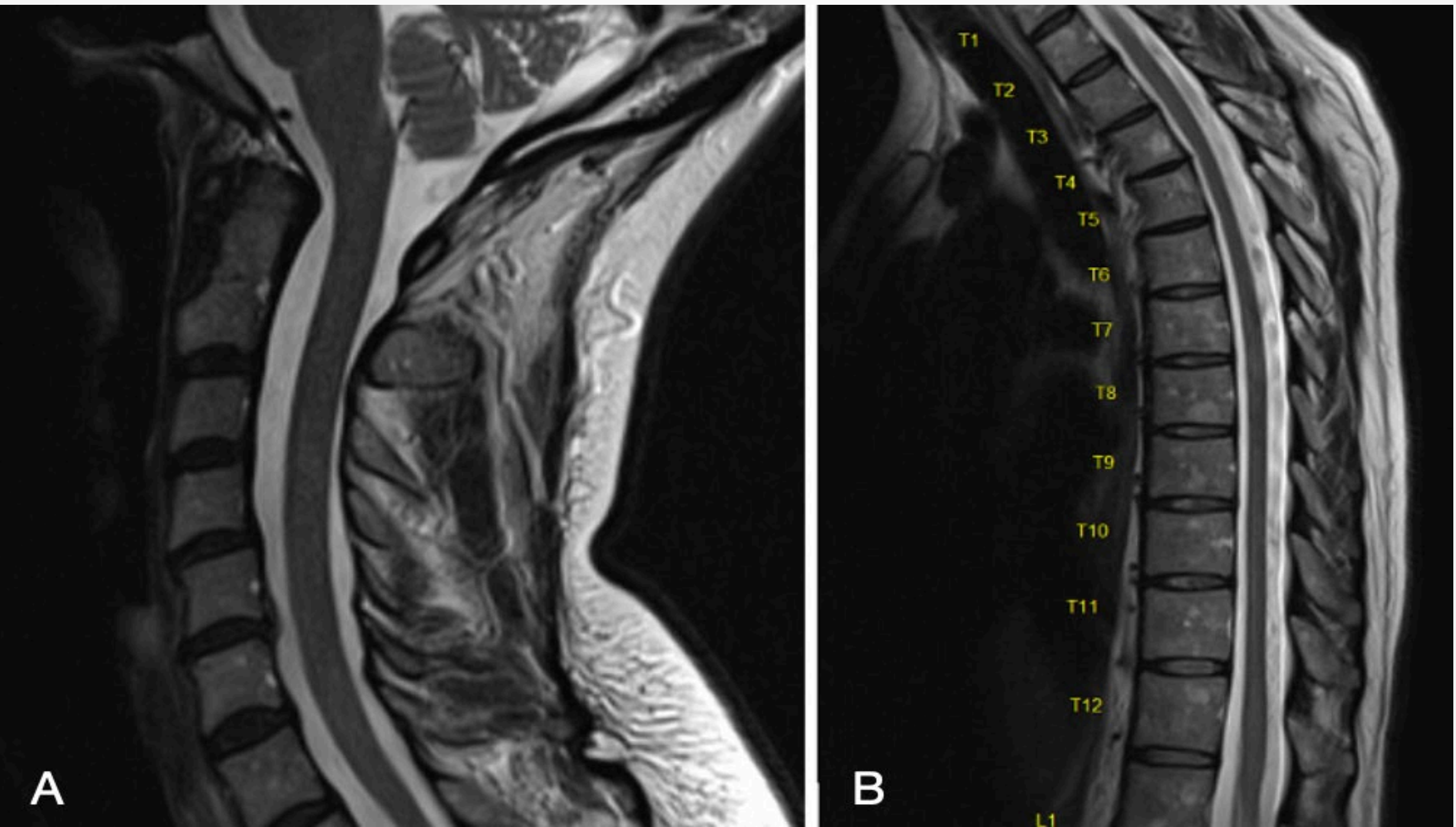


FIGURE 1. Sagittal T2 cervical (A) and thoracic (B) MR image demonstrating multilevel spondylosis without neural element compression or cord signal abnormality.

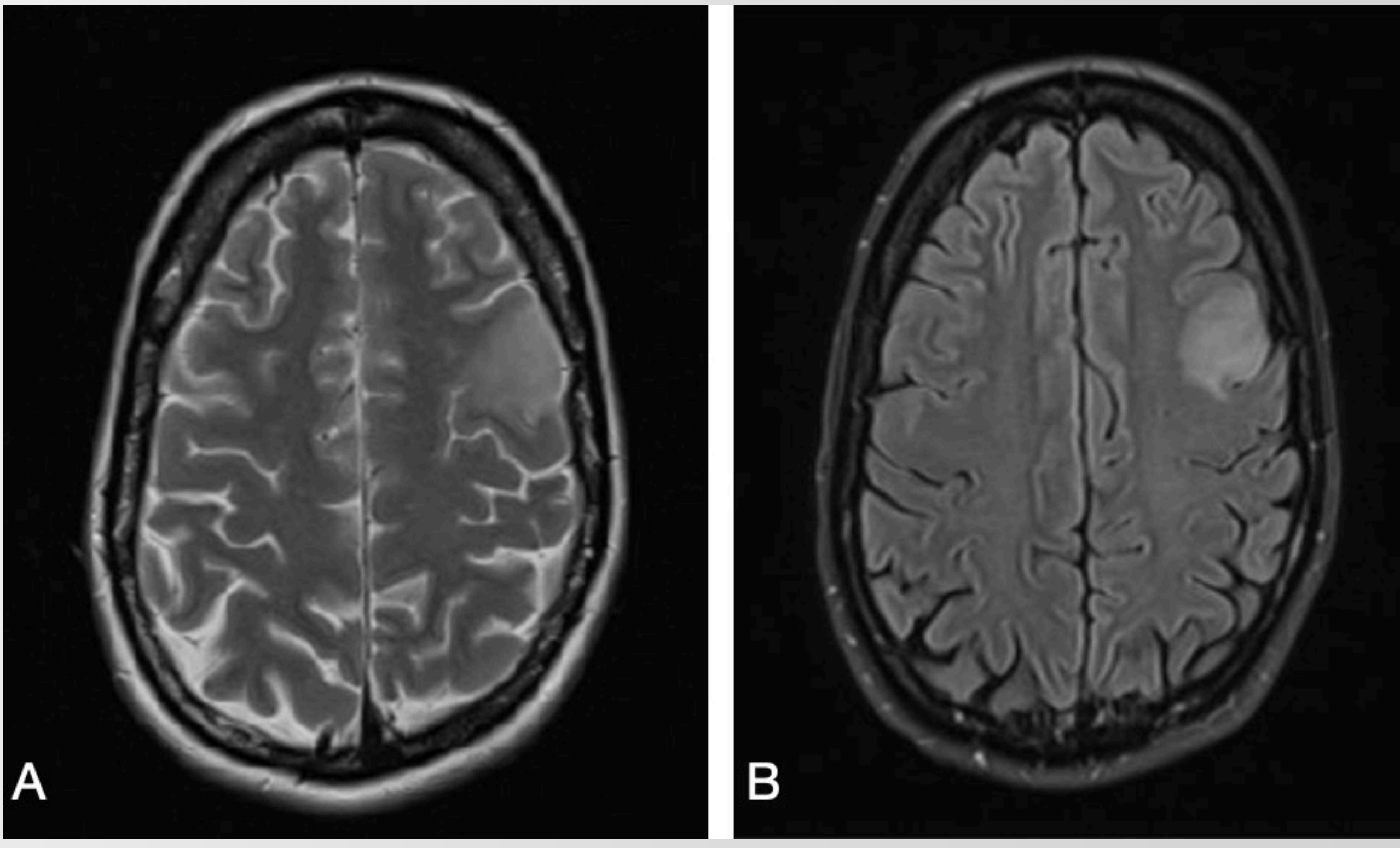


FIGURE 2. Axial non-contrast T2 sequence (A) and post-contrast FLAIR MR sequence (B) demonstrating 26 x 25 mm masslike non-enhancing lesion in the left middle frontal gyrus most concerning for low-grade glioma.

Conclusions

- This case emphasizes the importance of thorough physical examination and underscores the importance of maintaining a broad differential diagnosis in a subspecialty clinic, especially in patients presenting with seemingly incongruent signs and symptoms.

References

- 1) Louis, D. N., Perry, A., Reifenberger, G., von Deimling, A., Figarella-Branger, D., Cavenee, W. K., & Ellison, D. W. (2016). The 2016 World Health Organization classification of tumors of the central nervous system: a summary. *Acta Neuropathologica*, 131(6), 803-820. doi:10.1007/s00401-016-1545-1
- 2) Ostrom, Q. T., Gittleman, H., Fulop, J., Liu, M., Blanda, R., Kromer, C., & Kruchko, C. (2015). CBTRUS statistical report: Primary brain and central nervous system tumors diagnosed in the United States in 2008-2012. *Neuro-Oncology*, 17(Suppl 4), iv1-iv62. doi:10.1093/neuonc/nov189