Clinical Features to Aid in the Diagnosis of Acute Flaccid Myelitis versus Transverse Myelitis

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Background

Acute flaccid myelitis (AFM) is characterized by sudden onset of flaccid paralysis in one or more limbs with MRI showing involvement primarily of the central gray matter. In the acute phase, spinal cord imaging can appear similar to that seen in transverse myelitis (TM). Thus, clinical features that help distinguish the two disease processes are necessary for appropriate diagnosis, treatment, and prognosis. The aim of our study was to outline clinical features that may help distinguish between AFM and TM.

Methods

Retrospective chart review was performed of the nine patients presenting to Texas Children’s Hospital diagnosed with AFM (2018-19) and 32 patients diagnosed with TM (2010-18).

Results

Median age in the AFM cohort was 5.5 years (SD ± 2 years) and 10.5 years (SD ± 2 years) for the TM cohort. 78% were female in the AFM cohort and 63% were female in the TM cohort.

78% of AFM patients had viral symptoms and fever preceding the onset of neurologic symptoms compared to 44% of TM patients. 56% of AFM patients reported neck or extremity pain preceding the onset of weakness compared to 31% of TM patients.

57% of AFM patients had isolated upper extremity (UE) weakness while 44% of TM patients had isolated UE involvement. Of the AFM patients with UE and LE involvement, 86% had asymmetric weakness while 44% had both UE and LE involvement. Only 12% had isolated UE involvement. Of the TM patients with UE and LE involvement, 66% had symmetric weakness.

Urinary symptoms were present in 14% of the AFM patients and 31% of the TM patients. Similarly, only 14% of patients with AFM reported paresthesia and none reported other sensory symptoms. In comparison, 47% of TM patients reported sensory symptoms, such as numbness, tingling, or a sensory level.

Conclusion

In conclusion, evaluation of our cohort of AFM and TM patients suggests that AFM patients are more likely to present with a preceding fever and viral illness prior to their neurologic symptoms. They are also more likely to present with isolated UE involvement with neck or extremity pain preceding the onset of weakness. Other sensory symptoms such as numbness and tingling do not seem to be a predominant part of the presentation of AFM. Urinary symptoms are also more common in the TM population. Consideration of these clinical differences may help expedite diagnosis, therefore guiding management to improve clinical outcomes.