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Concomitant Guillain-Barre syndrome and acute transverse myelitis: Case report

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Guillain-Barre syndrome is acute inflammatory peripheral polyneuropathy with rapid onset of weakness, changes in sensation and pain, caused by the immune system damaging the peripheral nerves. Acute transverse myelitis is a rare acquired neuro-immune demyelinating disorder that can present with the rapid onset of weakness, sensory alterations, and bowel or bladder dysfunction. Concurrency of demyelinating diseases of central and peripheral nervous system are rare, but we present a case of dual diagnosis following viral pharyngitis. A 6-year-old girl complaining pelvic, abdominal pain and gait disturbance, was admitted to hospital. The patient had a history of influenza vaccination 1 or 2 months ago and prescription of medication for acute pharyngitis 5 days ago. She presented to the hospital with severe motor weakness on bilateral lower limbs(grade 0~1), hyporeflexia, urinary retention with abdominal pain and distension, but no sensory change. At admission, she did not show any upper motor neuron sign and there was no remarkable finding shown in Brain and Whole Spine MRI. Serological studies for Campylobacter Jejuni Ab, Mycoplasma pneumonia IgM and Anti-Herpes simples IgM were positive. And cerebrospinal fluid tests showed increased WBC and protein. The patient received IVIG 1g/kg/day for 2days, antibiotics and acyclovir for 2 weeks, but motor weakness was not improved and Babinski sign, ankle clonus revealed. Follow up Spine MRI showed that high contrast enhancement in nerve fascicle of conus medullaris area without spinal cord signal change or focal lesion. Thus we concluded conus medullaris inflammation due to GBS concurrent with ATM, we started IV steroid pulse therapy for 3 days followed by oral methylprednisolone 1mg/kg/d for 11 days. 2 weeks later, GI function and lower limbs muscle strength was improved(grade 2). In neurophysiologic study, both peroneal motor amplitudes were lowered and F wave latencies showed delayed responses, which were consistent with acute motor axonal neuropathy(AMAN). And both tibial somatosensory evoked potential(SEP) studies revealed delayed responses suggesting abnormality of somatosensory pathway. The patient's muscle strength on both lower limbs was improved(Rt: grade 3, Lt: grade 1) after receiving physical therapy including muscle strength exercise. At discharge, muscle strength was more improved(Rt: grade 4, Lt: grade 2),and she could ambulate with minimal assist. We report a case of pediatric Guillain-Barre syndrome concomitant with acute transverse myelitis who underwent IVIG and steroid pulse therapy. In particular, this case showed the conus medullaris inflammation in spinal MRI. Although it is rare, it may be triggered by both central and peripheral nervous system demyelination through

impaired immune system. Recognizing dual diagnosis is important to predict prognosis and recovery. So we should consider pediatric GBS combined ATM through precise clinical history and physical examination.

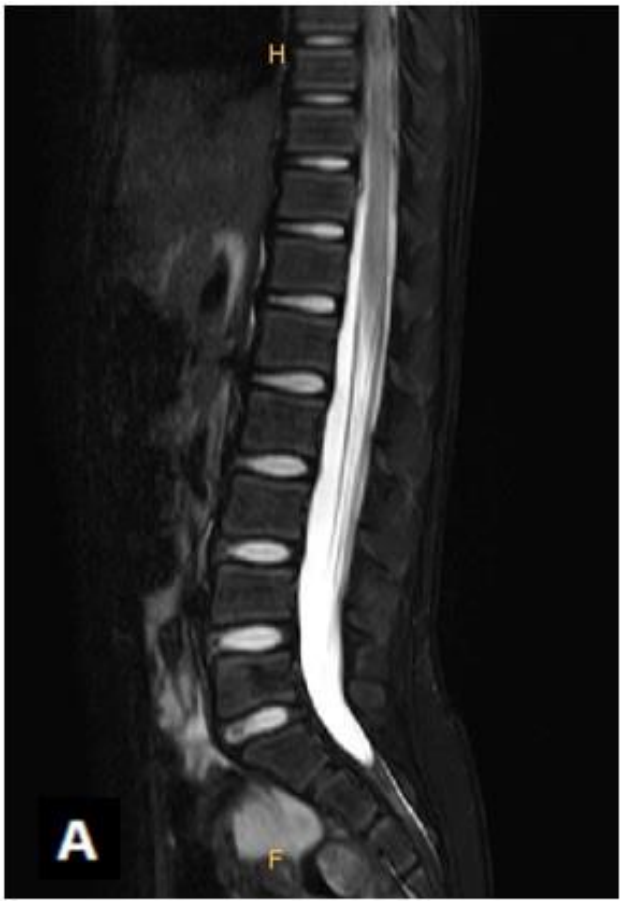

Fig 1. sT2 mDixon SAG water MRI images of the spine, showing prominent hyper-intense lesions in conus medullaris. (A)

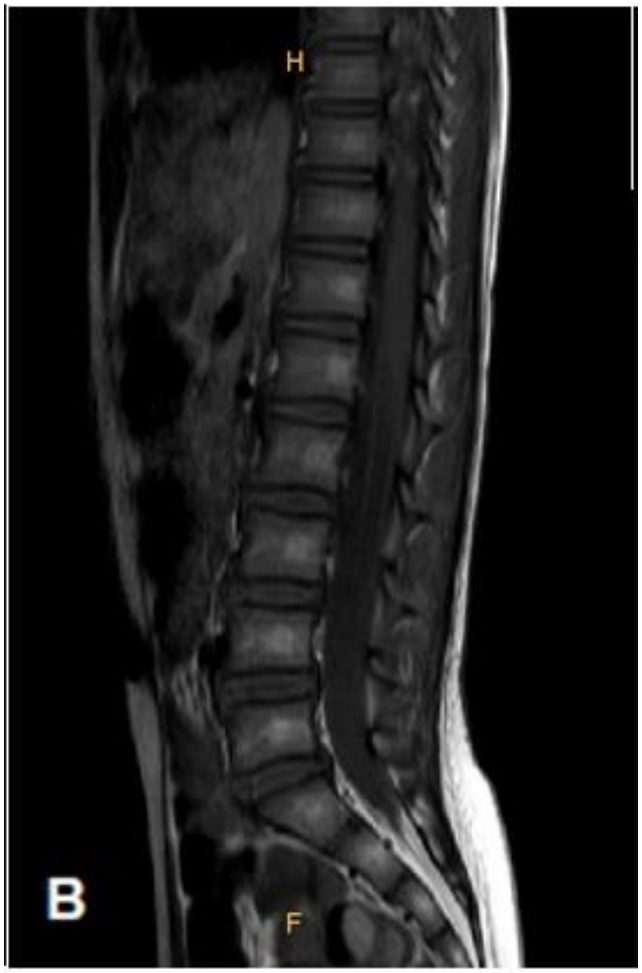

Fig 2. In T1-weighted images (B), same lesions showed low signal intensity.

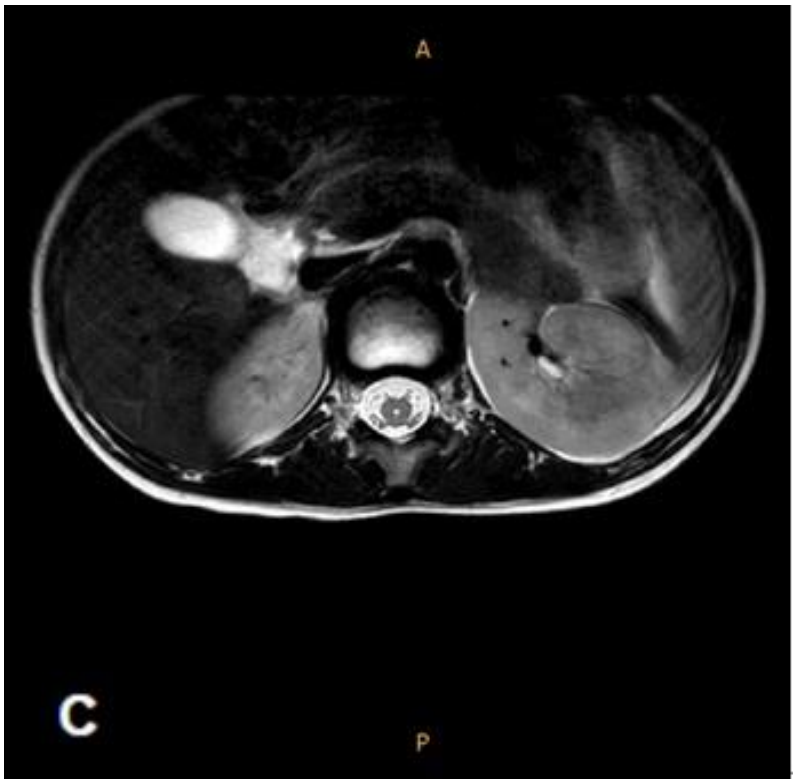

Fig 3. T2 TSE Axial image of L1 level also shows hyper-intense lesions. (C)