BURKE Rehabilitation Hospital

Montefiore

Rare Case of Guillian-Barre Syndrome with Lyme Neuroborreliosis

Gilad Ghanbari DO [1], Lawrence Chang DO [1], Aaron Greenberg DO [1], Laura Gruber MD [1]

[1] Montefiore Health System: Burke Rehabilitation Hospital
Department of Physical Medicine and Rehabilitation

Introduction

- This study reports on a rare case of Guillain Barre occurring with neuroborreliosis as a manifestation of early disseminated Lyme disease.

.

Case

- A 20 year old female presented with symmetric numbness of bilateral hands and feet, progressive weakness in bilateral extremities, and left sided Bell's palsy.
- Her physical exam was notable for areflexia throughout; 4/5 strength symmetrically in extremities.
- Lyme IgM western blot was positive. CSF was notable for cytoalbuminologic dissociation.
- Nerve conduction study was notable for distal nerve demyelination with no evidence of axonal damage.
- She was started on IVIG and ceftriaxone. She received physical therapy and occupational therapy throughout.
- Following two weeks, her Bell’s palsy was unchanged, reflexes were 1+ and strength had increased to 4+/5.

Images

CSF Volume		11.5	
CSF Appearance		COLORLESS,CLEAR	
CSF WBC		2	
CSF RBC		4	
CSF Lymphocytes %		92 H	
CSF Monocytes %		8 L	
CSF Glucose	60		
CSF Total Protein	122 *H		
CSF Albumin			71.7 *
CSF IgG			10.7 *
Serum IgG			963
Serum Albumin			4.0
CSF IgG Index			0.62
CSF IgG Synthesis Rate			12.3 *
CSF Myelin Basic Protein			<2.0
Ser Oligoclonal Bands			Cancelled
CSF Oligoclonal Bands			see note
Oligoclonal Prot Interp			Cancelled
CSF VDRL			Negative

- Figure 1: Lumbar puncture CSF results revealing the presence of high protein, low WBC consistent with Guillian Barre Syndrome.

References

Teodoro T, Oliveira R, Afonso P. Atypical Lyme Neuroborreliosis, Guillain-Barré Syndrome or Conversion Disorder: Differential Diagnosis of Unusual Neurological Presentations. Case Rep Neurol. 2019;11(1):142-147.

Owens J, Filatov A, Husain-Wilson S. Guillain-Barre Syndrome, Neuroborreliosis, or Both. Cureus. 2020;12(4):e7823.

Fallen BA, Strobino B, Reim S, Stoner J, Cunningham MW. Anti-lysoganglioside and other anti-neuronal autoantibodies in post-treatment Lyme Disease and Erythema Migrans after repeat infection. Brain, Behavior, & Immunity - Health. 2020;2:1-6.

Discussion

- Neuroborreliosis occurs from spirochete invasion of the nervous system causing localized inflammation of nerves and meninges, resulting in axonal damage and lymphocytic CSF pleocytosis.
- AIDP, a common form of Guillain Barre, results from autoantibody-autoantigen complexes on myelin sheath leading ato macrophage activation. This process leads to CSF cytoalbuminologic dissociation and nerve demyelination.
- It is important to distinguish and treat the correct process early. If untreated, Lyme may lead to fatal cardiac arrhythmias, GBS may lead to paralysis of respiratory muscles. To date, there have been extremely rare published cases of GBS with Lyme.

Conclusion

- Physiatrists should be cognizant of Guillain Barre possibly occurring with Lyme. If there is any suspicion, electrodiagnostics serves as a great noninvasive testing method.