



Introduction

- Acute febrile encephalopathy is a common complication in prolonged hospital stays
- Bacterial meningioencephalitis should always be in the differential in any febrile encephalopathic patient
- Listeria monocytogenes is an uncommon cause of rhomboencephalitis
- Flu-like symptoms rapidly progress to altered mentation and progress to sensory and motor deficits

Presentation

A 75-year chronically ill immunocompetent male presented to the ED with non-specific symptoms and was admitted for multiple lab abnormalities include renal failure, transaminitis, tropininemia, and acute respiratory failure. Initial neurological examination was unremarkable and he was alert and oriented. CT Head was unremarkable upon admission.

His laboratory data improved and respiratory status improved, but he became increasingly encephalopathic with fevers and signs of sepsis.



Figure 1. Unremarkable CT Head upon admission.

Work-Up

Neurological work-up including CT Head and EEG were unremarkable. He had no nuchal rigidity and intact brainstem reflexes. Concern for alcohol withdrawal was noted and he was loaded with phenobarbital. He failed to improve. He was also started on broad-spectrum antibiotics and an infectious work-up was unremarkable.

His encephalopathy worsened, prompting intubation. He developed clonus shortly after, prompting an LP, which was consistent with bacterial meningitis, and PCR revealed Listeria monocytogenes.

CEREBRAL SPINAL FLUID	
Tube Counted	Tube 3
Volume, Tube Counted	3.0
Appear Pre-Centrif...	Slightly hazy
Color Pre-Centrifu...	PALE YELLOW
Color Post-Centrif...	Supernatant is ...
RBC	671
WBC	3,246
Neutrophils	97
Lymphocytes	1
Monocytes	2
Other Cells	0
Reactive Lymphocytes	0
Histiocytes	0
Glucose, CSF	7
Protein, Total, CSF	246
WNV IgG Ab, CSF	0.52 *
WNV IgM Ab, CSF	0.03 *
VDRL, CSF	Nonreactive
CYTOLOGY, CSF (2.0ML)	

Figure 2. CSF and PCR Data demonstrating Listeria Monocytogenes meningioencephalitis.

E. coli K1	Not Detected
H. influenzae	Not Detected
L. monocytogenes	Detected
N. meningitidis	Not Detected
S. agalactiae	Not Detected
S. pneumoniae	Not Detected
Cytomegalovirus	Not Detected
Enterovirus	Not Detected
H. simplex 1	Not Detected
H. simplex 2	Not Detected
Herpes virus 6	Not Detected
Parechovirus	Not Detected
V. zoster	Not Detected
C. neoformans/gattii	Not Detected

Outcome

Shortly afterwards, his pupils became asymmetrical and his brainstem reflexes were absent. MRI revealed findings consistent with rhomboencephalitis. His pupils then were dilated bilaterally, prompting repeat MRI, which revealed multifocal ischemia. Shortly afterwards, the patient was terminally extubated.

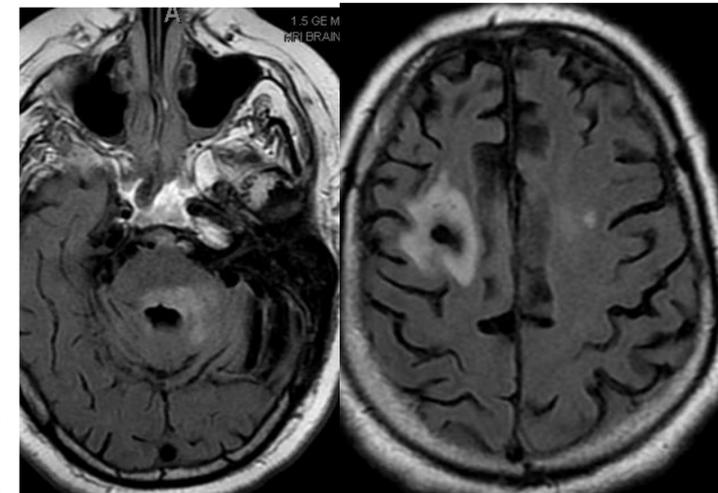


Figure 3. Brain MRI consistent with rhomboencephalitis

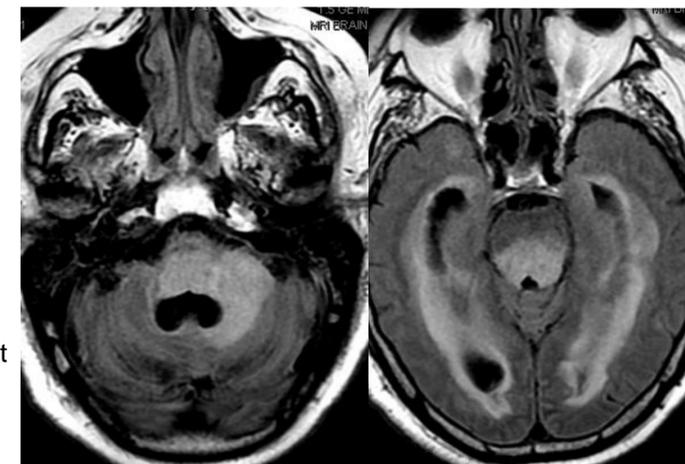


Figure 4. Brain MRI demonstrating findings consistent with multifocal ischemia.

Discussion

- Listeria monocytogenes accounts for 20% of all cases of bacterial meningitis in adults over the age of 60; the majority of these patients are immunocompromised
- Rhomboencephalitis is a rare complication if Listerial meningioencephalitis
- Imaging often reveals brain abscesses
- Rhomboencephalitis usually occurs in immunocompetent hosts (as seen in our patient)
- Initial symptoms are vague and non-specific
- Most patients do not have typical meningeal examination findings
- CT scans are usually unremarkable
- Symptom progression is biphasic, and neurological deterioration develops rapidly
- Always administer antibiotics if concerned for meningioencephalitis, even if LP cannot be obtained
- Obtain MRI if truly concerned as soon as possible

Conclusion

Listeria should be concerned for all patients with febrile encephalopathy who develop rapidly worsening neurological sequelae. Diagnosis begins with an LP with rapid antibiotic administration. MRI should not be delayed.

References

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