

Anaplasmosis in the brain

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<https://danielcameronmd.com/anaplasmosis-in-the-brain/>

Welcome to another **Inside Lyme Podcast** with your host Dr. Daniel Cameron. In this episode, Dr. Cameron will be discussing the case of a 64-year-old woman with central nervous system involvement of the brain.

By [Dr. Daniel Cameron](#)

The case was first described by Mullholand and colleagues in the *British Medical Journal* in a paper entitled "[Central nervous system involvement of anaplasmosis.](#)"¹

A 64-year-old woman was hospitalized with a 24-hour history of confusion and lethargy. The following morning, her lethargy had worsened and she developed subjective fever, mild headache, nausea, vomiting and increased confusion, according to the authors.

The physical exam showed "aphasia and memory lapse of the past 24 hours and an engorged tick behind the knee."

Her tests revealed leptomeningeal enhancement and bilateral frontal lobe subarachnoid hemorrhage (SAH).

Note: Leptomeninges are the two innermost layers of tissue that cover the brain and spinal cord. The causes of leptomeningeal enhancement can include infectious meningitis of bacterial, fungal, and viral etiology; autoimmune and inflammatory diseases such as encephalitis, vasculitis, and sarcoidosis; trauma; and metastatic disease.¹

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The Anaplasmosis PCR test of the serum was positive. A spinal tap was not performed.

The authors point out that the time from transmission to symptom onset in anaplasmosis can be within 24 hours. And typically, neurologic involvement is seen more often in Lyme disease and Ehrlichia.

Tests for Lyme disease or other co-infections were negative. However, the authors acknowledged that these tests might not be positive in early disease.

Treatment for Anaplasmosis

The woman was treated with doxycycline and discharged home.

“However, the patient was again hospitalised 6 weeks later due to persistent headache, word finding difficulties, memory loss and generalised fatigue,” wrote the authors.

“Repeat MRI and MRA of the brain showed significant increase in the FLAIR hyperintensity and hypointensity involving bilateral frontal, parietal occipital lobes, consistent with SAH with persistent left MCA anterior division vasospasm.”

She was discharged without retreatment and speech therapy was arranged.

“The patient has had marked improvement and returned to her cognitive baseline 3 months later,” wrote the authors.

The following questions are addressed in this Podcast episode:

1. What is Anaplasmosis?
2. What is leptomeningeal enhancement?
3. What is subarachnoid haemorrhage (SAH)?
4. How quickly can tick-borne infections be transmitted?
5. How long does it take for Anaplasmosis symptoms to appear?
6. What other treatments are there for Anaplasmosis?

Thanks for listening to another Inside Lyme Podcast. Please remember that the advice given is general and not intended as specific advice to any particular patient. If you require specific advice, please seek that advice from an experienced professional.

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References:

1. Mullholand JB, Tolman N, De Obaldia A, et al. Central nervous system involvement of anaplasmosis. *BMJ Case Reports CP* 2021;14:e243665.

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