

## A CASE OF SEVERE ANAPLASMOSIS FOLLOWED BY PROVOKED DVT IN AN ELDERLY PATIENT WITH COGNITIVE DECLINE

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### Introduction:

*Anaplasma phagocytophilum* is an obligate gram-negative, intracellular bacterium that causes an illness known as anaplasmosis (2). *Anaplasma phagocytophilum* is transmitted by the Ixodes tick (*Ixodes scapularis* in the Northeast and Midwest regions of the United States with *Ixodes pacificus* being the primary vector in the western United States) (3).

“Anaplasmosis generally presents with nonspecific symptoms such as fever, chills, malaise, headache and myalgias” after an incubation period of one to two weeks (2).

“Clinical manifestations range from mild to severe” (2). “Less than 50% of cases present with nausea, vomiting, diarrhea, cough, arthralgias, stiff neck, and confusion” (2).

### Case Report:

76 year old male presented to telehealth visit due to lightheadedness and dizziness with standing up over the prior two weeks as well as general malaise and having “no energy” for a few weeks prior. Wife also noticed patient’s memory had gotten worse over the last year and wife was the one who now paid their bills. Patient had also been to a telehealth visit a few weeks prior due to fatigue and weakness that started the day before. One the day of my telehealth visit patient had CBC and CMP done which were mostly noncontributory (patient did have a slightly low platelet count of 128). Patient did however, present to the ED two days later with altered mental status. Platelet level was found to be 45. Patient was admitted to the hospital and patient’s platelet level recovered to 160 by day of discharge three days later.

Tick borne panel that was ordered during patient’s admission tested positive for anaplasmosis and patient was started on a three week course of doxycycline. I saw patient again in another telehealth visit towards the end of his three week course of doxycycline. Patient at the time still felt tired and fatigued at that visit. A little over two months after his hospitalization patient was also started on Eliquis for a left lower extremity DVT. When I saw patient again almost six weeks after starting Eliquis (and about three and a half months after his hospitalization) patient’s confusion was much better compared to a few months prior and patient was back to doing physical activity, albeit not as much compared to prior to his anaplasmosis infection.

### Discussion:

*Anaplasma phagocytophilum* is one of multiple organisms including Lyme, babesiosis, ehrlichiosis and Powassan encephalitis that can be transmitted to humans via the *Ixodes* tick (2).

CBC with anaplasmosis will usually show leukopenia and thrombocytopenia while transaminases can be elevated up to 70% of the time. “PCR on blood samples is widely used and is able to provide diagnostic results during the acute setting”(3). If PCR is negative and suspicion for anaplasmosis remains high one can also order two sets of serologic tests spaced two to four weeks apart and confirm a diagnosis based on a fourfold rise in the antibody titers between the acute and convalescent tests.

The first line treatment for anaplasmosis is a 14 to 21 day course of doxycycline which should be initiated in all symptomatic patients suspected of having anaplasmosis (2).

### Conclusion:

Anaplasmosis generally presents with nonspecific symptoms including malaise (2). This patient also had thrombocytopenia which is a typical peripheral blood finding (along with leukopenia) with anaplasmosis. This case demonstrates the importance of considering anaplasmosis in areas where it is endemic when a patient has nonspecific symptoms such as malaise. General blood work (i.e. CBC and CMP) can also often provide information to help support the diagnosis. This patient was also diagnosed with a DVT (by ultrasound) about two months after a previous ultrasound during his hospitalization was negative. This illustrates the elevated risk of DVT in the first few months following an infection (1).

### References:

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