Atypical Presentation of Anaplasmosis
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Introduction

Anaplasmosis is a tick borne illness transmitted from the black legged tick (Ixodes scapularis) Vermont, Maine, Rhode Island, Minnesota, Massachusetts, Wisconsin, New Hampshire, and New York account for 90% of the cases of anaplasmosis despite the black legged tick distribution which transverses the entire east coast to the Midwest of the United States. The number of cases have increased from 1.4 cases/1,000,000 in 2000 to 6.1 cases/1,000,000 in 2016.

Case Description

History of Present Illness:
Patient is a 90 year old female with past medical history including HTN and new diagnosis of peripheral neuropathy presenting to MMC after falling the morning of admission with a new complaint of right sided weakness. The patient reports she awoke at ~0730 at which time she stood quickly to use the restroom and fell. She says that her right leg felt weak and she was having difficulty moving it properly. The patient’s family reports for the past 42 weeks prior to admission she had been feeling generalized fatigue, shaking, and has been sleeping more than usual. The previous week, she went to her PCP who drew labs and made no changes to her medications. She continued to shake and have fatigue, and she went to an OSH who drew labs and started her on levotyroxin 12.5 mg daily for new diagnosis of hypothyroidism. The patient continued to feel weak on the right side and had generalized fatigue; new SOB, and had a new complaint of right rib pain with deep breaths which had occurred after her fall, but she denied any fevers/chills, cough, hemoptysis, LE edema/pain, abdominal pain, changes in vision, chest pain, N/V , D/C, dysuria, changes in BM.

Admission Labs:
- AST: 29
- ALT: 35
- Alb: 67
- Albumin: 3.2
- Bili: 0.7
- Ca: 9.3

MCV: 87.6

Iron: 60 (n = 45-160)
Percent saturation: 23%
Binding capacity: 264
(n = 208-385)
Ferritin: 537.8
(n = 30-400)

Admission Findings:
- BP 136/50 mmHg | Pulse 97 | Temp (°F) 37.6
- PP 96/64
- HR 97
- SPO2 96%

General: Clear mentation, responds appropriately to commands
Cranial nerves 2-12 intact
Cranial nerves: 2: intact
Speech and language: No dysarthria. Fluent fluency and comprehension to general conversation.
Extremities:
 Coordination: intact finger to nose and fine finger movements bilaterally.
Neurological Exam:
- No accessory muscle use.
- Clear to auscultation bilaterally with moderate air flow.
- No TTP along rib which she complains of pain
- Abdomen: +distended
- No peristalsis or distension
- No odors
- No skin rashes or lesions.
- No menière.

Hospital Course and Treatment

- Admitted to internal medicine service for concern for stroke given acute focal right sided weakness
- MR brain demonstrated chronic small vessel disease with no signs of acute process or previous infarction
- After further discussion with the patient, she admitted to being outdoors frequently while at camp two weeks prior to initial presentation

Laboratory Findings

Labs 1 week prior:
- AST: 29
- ALT: 35
- Alb: 67
- Albumin: 3.2
- Bili: 0.7
- Ca: 9.3
- MCV: 87.6

Figure 1: Annual reported incidence (per million population) for anaplasmosis-United States, 2016

Figure 2: Annual reported incidence (per million population) for anaplasmosis-United States, 2016

Figure 3: Anaplasmosis papyoophillum is an obligate intracellular bacterium that is typically transmitted to humans by the Ixodes ricinus species

Figure 4: Black legged Tick, formerly known as “deer tick,” Ixodes scapularis

Discussion

Typical presentation of anaplasmosis:

Early Illness:
The following is a list of signs and symptoms commonly seen in the first few days of illness (days 1-5):
- Fever, chills, rigors
- Severe headache
- Malaise
- Myalgia

Gastrointestinal symptoms (nausea, vomiting, diarrhea, anorexia) in about 20% of cases

Late Illness:
If treatment is delayed and anaplasmosis is allowed to continue, disease may become severe. Severe illness is rare, but may involve:
- Renal or respiratory failure
- Peripheral neuropathy
- Disseminated intravascular coagulation (DIC)-like coagulopathies
- Rhabdomyolysis
- Hemorrhage

Clinical Manifestations and discussion:
Although the patient did demonstrate typical laboratory findings with anemia and thrombocytopenia, she lacked any of the typical early symptomatology of fevers, chills, myalgias, or gastrointestinal symptoms. She presented with malaise and focal weakness of both the right upper and lower extremity with no neurological imaging that correlated with these findings to suggest acute cerebral vascular accident or recrudescence of previous insult. It is rare to have neurological involvement with anaplasmosis, but in these cases, focal neurological deficits have been reported. The patient’s right upper and lower extremity findings did improve with treatment and resolution of the infection making this a likely etiology for her findings at presentation, although her ongoing lower extremity atrophy is not explained by the timeline of this case.

It is important for health care providers to be suspicious of atypical presentations of typical pathologies. With the rise in tick borne infections and co-infections, a high clinical suspicion in endemic regions is necessary to prevent missed opportunities for early treatment as late illness complications can be severe.

References
2. Cdc.gov,.
3. “IBSA: Lyme Disease.” IBSA: Infectious Diseases Society of America,.