

The Cat's Out of the Bag: A Case of Anaplasmosis Introduced From an Outdoor Pet

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Introduction

- Anaplasmosis is an overall rare tick-borne illness, with only 5 cases reported in Delaware in 2023
- Nationally, cases have risen 23 fold over the past 20 years
- A high index of suspicion is needed to diagnose patients with this disease, as the presenting symptoms can be nonspecific

Case Presentation

- An 84-year-old woman presented to the ED with 10 days of nausea, loss of appetite, and night sweats
- Vitals significant for temperature 39.1C, tachypnea in the 20s, and hypoxia to 85% on room air
- Exam revealed a mildly distended abdomen with pain to palpation in the epigastric, RLQ, and LLQ

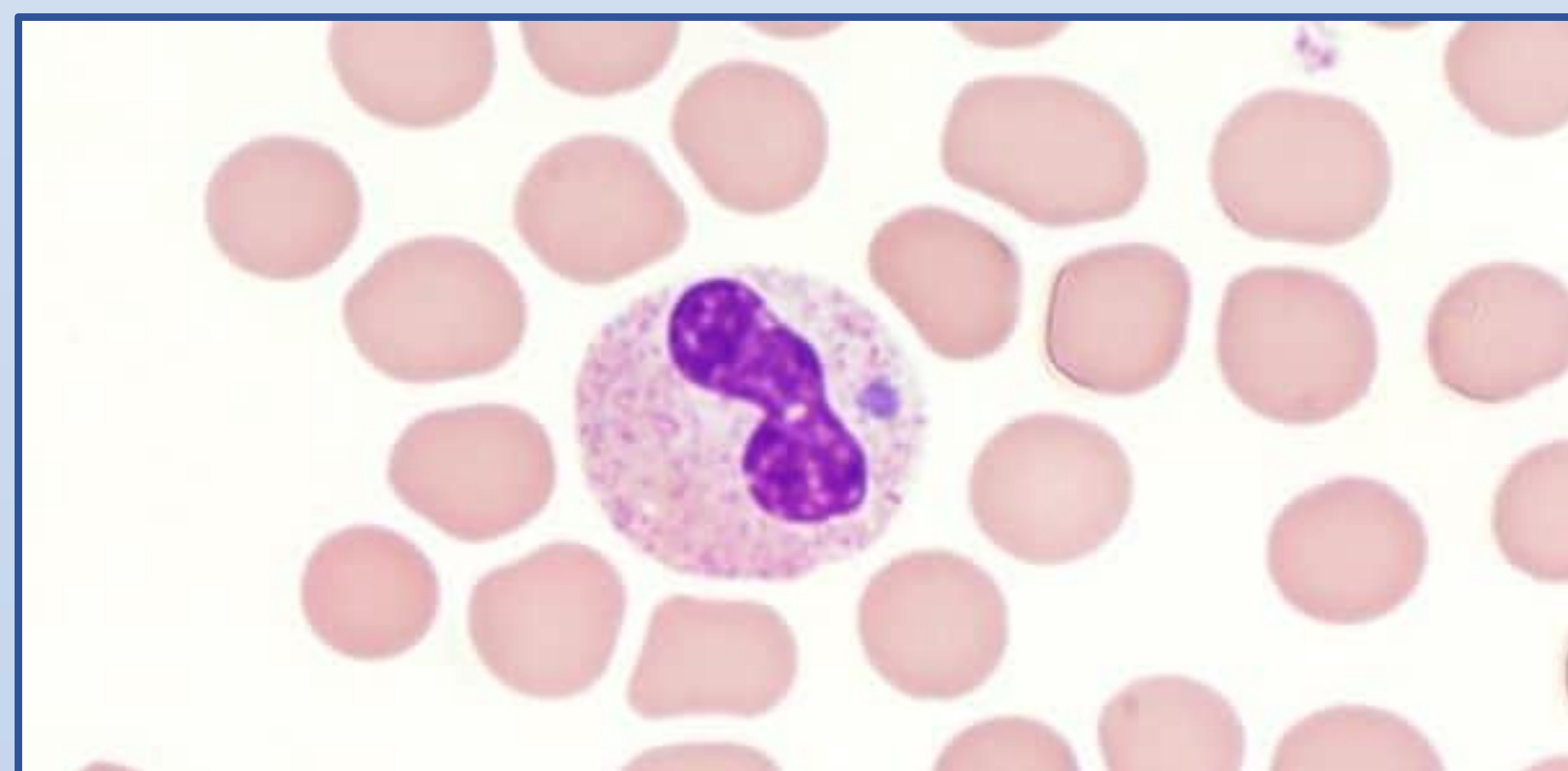


Figure 1. Peripheral blood smear showing a neutrophil with characteristic intracytoplasmic morulae.

Case Presentation Cont.

- She was admitted for management of sepsis, secondary to suspected pneumonia and treated with ceftriaxone and doxycycline
- Further history revealed the patient owned an outdoor cat who had not been treated for ticks
- PCR testing was positive for *Anaplasma phagocytophilum*
 - IgG titer < 1:64
- The patient was sent a longer course of doxycycline for further treatment

Discussion

Table 1. Tickborne Illness Transmitted by *Ixodes scapularis*

Disease	Clinical features	Labs	Treatment
Anaplasmosis	Fever, headache, myalgia, rash	↑ LFTs ↓ Hgb, Plt, WBC	Doxycycline
Lyme Disease	Erythema migrans, fever, myalgias	↑ ESR ↑ LFTs	Doxycycline
Babesiosis	Fever, myalgia, jaundice, dark urine	Hemolytic anemia ↑ Cr ↓ Plt ↑ LFTs	Atovaquone + azithromycin
Powassan virus	Fever, headache, meningo-encephalitis	CSF: ↑ lymphs, normal glucose	Supportive

Discussion

- Anaplasmosis most often presents with fever, chills, malaise, myalgias, and GI symptoms
- More severe cases may have gastrointestinal involvement or central nervous system involvement, including mental status changes and meningoencephalitis
- Common lab abnormalities include leukopenia, thrombocytopenia, and transaminitis
- The diagnosis can be made via PCR, serology, or blood smear
- Anaplasmosis is transmitted by the *Ixodes scapularis* tick
 - Also transmits Lyme, Babesiosis, and Powassan virus
- Doxycycline is the treatment of choice, with at least 10 days of treatment recommended

Conclusions

- Tickborne illnesses can present with nonspecific symptoms, and often similar to each other
- Testing for coinfections is important in the workup for tickborne illness
- A thorough history and consideration of epidemiology is required to diagnose these illnesses
- Treatment with antibiotics should not be delayed, especially in the case of severe illness
 - Start antibiotics before confirmatory testing

References

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- CDC. Clinical Testing and Diagnosis for Anaplasmosis. *Anaplasmosis*. May 17, 2024. Accessed October 1, 2024. <https://www.cdc.gov/anaplasmosis/hcp/diagnosis-testing/index.html>

