

# Malaria in New Jersey: Exploring Extended Incubation Periods and Locally Acquired Transmission

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## INTRODUCTION

44-year-old African American male, recently returned from the Dominican Republic, emerged with a familiar foe—*Plasmodium falciparum*. However, in this case, malaria, a rare specter in the U.S., takes an unconventional stage, challenging our understanding. This report bridges gaps in malaria behavior, exploring an extended incubation period and questioning the origin—foreign shores or native soil.

## PRESENTATION

The patient, with a medical history significant for unprovoked PE/DVT on Eliquis, presented to the emergency department, reporting a week of fevers, weakness, and sluggishness. His symptoms followed recent travel to the Dominican Republic two months prior, and a recent incision and drainage for a staphylococcus-positive abdominal skin abscess, recovering on oral antibiotics. Patient reported no sick contacts and denied any recent tick or insect bites.

## HOSPITAL COURSE

In the emergency department, vital signs revealed a temperature of 100.5°F, heart rate of 108, respiratory rate of 18, and blood pressure of 134/113. Physical exam was significant for diaphoresis and scleral icterus. Labs on admission showed elevated total and direct bilirubin, AST, and ALT. A parasite smear indicated the possibility of *Babesia* or *Plasmodium*. Infectious disease (ID) specialists initiated a treatment regimen comprising Malarone, azithromycin, and doxycycline. Positive results for the hepatitis panel and Lyme titer were obtained. A repeat parasite smear obtained on the fourth day of hospitalization was negative. Discharged on the same day in an asymptomatic and afebrile state, the patient was continued on outpatient oral antibiotics. A week later, an outside laboratory favored *Plasmodium falciparum* based on parasite smears, but post-discharge, obtaining PCR testing proved unattainable.

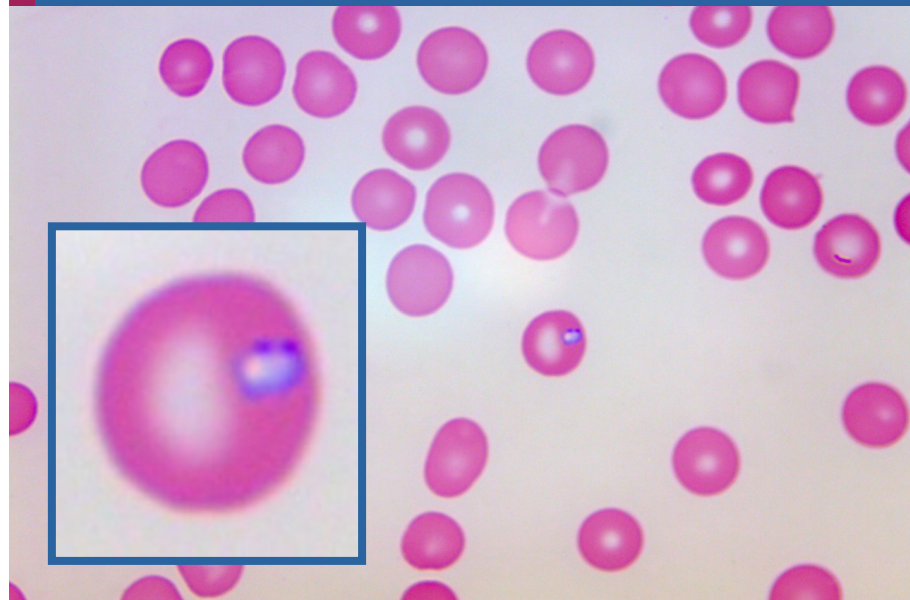
## LAB RESULTS

- **CMP:** total bilirubin 1.9, direct bilirubin 0.7, AST 51, ALT 70
- **CBC:** WBC 4.5, Hgb 11.0, PLT 92
- **UA:** Moderate blood, no RBCs, urobilinogen elevated
- **Lyme:** IgM positive, IgG negative
- **Hepatitis:** Bc IgM positive, Bs Ag negative

## PATHOLOGY REPORT

- **Hospital lab:** parasitic ring forms, possibly *Babesia* or *Plasmodium*
- **Outside lab:** intracellular ring forms, favoring *Plasmodium falciparum* with parasitemia level 0.7%, recommended serologic or PCR testing for further evaluation

## BLOOD SMEAR



## DISCUSSION

- The incubation period for malaria generally ranges from 7 to 30 days. *Plasmodium falciparum* is 9-14 days. While cases of incubation periods outside of this range have been reported, they are rare.
- **The intriguing aspect of this case lies in the extended incubation period for *Plasmodium falciparum*, challenging established timelines.** If the infection originated in the Dominican Republic, the patient's asymptomatic period surpassing two months defies conventional expectations. Alternatively, if malaria was acquired in the northeastern United States, this is an extraordinary case of locally-acquired *Plasmodium falciparum*, possibly not seen since the early 1990s.
- Decisions in managing this case involved prompt ID consultation, leading to a treatment regimen of Malarone, azithromycin, and doxycycline. Positive hepatitis and Lyme results added diagnostic layers. Post-discharge, limited access to PCR testing posed confirmatory challenges.

## CONCLUSION

**This case urges a reconsideration of incubation periods and local transmission dynamics, guiding clinicians to navigate emerging trends and potential shifts in disease patterns.** As cases of locally acquired malaria rise in the U.S., our findings contribute to refining diagnostic and management approaches in an evolving landscape.

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