

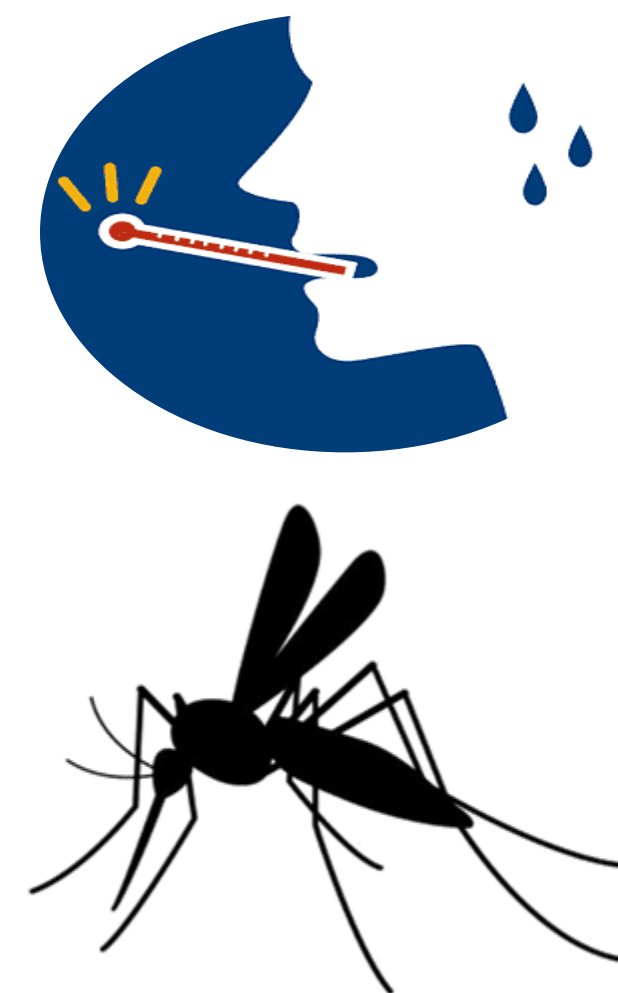
# A Case of False Positive Malaria Rapid Diagnostic Test due to African Tick Bite Fever

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## Background

- Fever in a returned traveler warrants exclusion of malaria.
- Malaria is transmitted through *Anopheles* mosquitoes and occurs primarily in tropical regions<sup>1,2</sup>
- Standard of care requires exclusion of malaria within 2 hours of presentation using rapid diagnostic tests (RDTs).



## Management

- Atovaquone-proguanil started after first positive RDT.
- Evaluated in tropical diseases clinic and diagnosed with African tick bite fever (ATBF) based on travel history, negative microscopy and repeat RDT.
- IgG of Rocky mountain spotted fever (RMSF) group serology which also detects antibodies to *Rickettsia africae* antigens returned reactive at a titre of 1:1024.

## Discussion

- Malaria RDTs have emerged as alternative diagnostic due to ease of use to exclude *P. falciparum*.
- False-positive results with BinaxNOW<sup>®</sup> have been reported with other infections<sup>3</sup>.
- ATBF is caused by *R. africae*, found mainly in Southern Africa, transmitted by *Amblyomma* ticks.
- ATBF manifestations include inoculation eschars, fever and lymphadenitis<sup>4,5,6</sup>

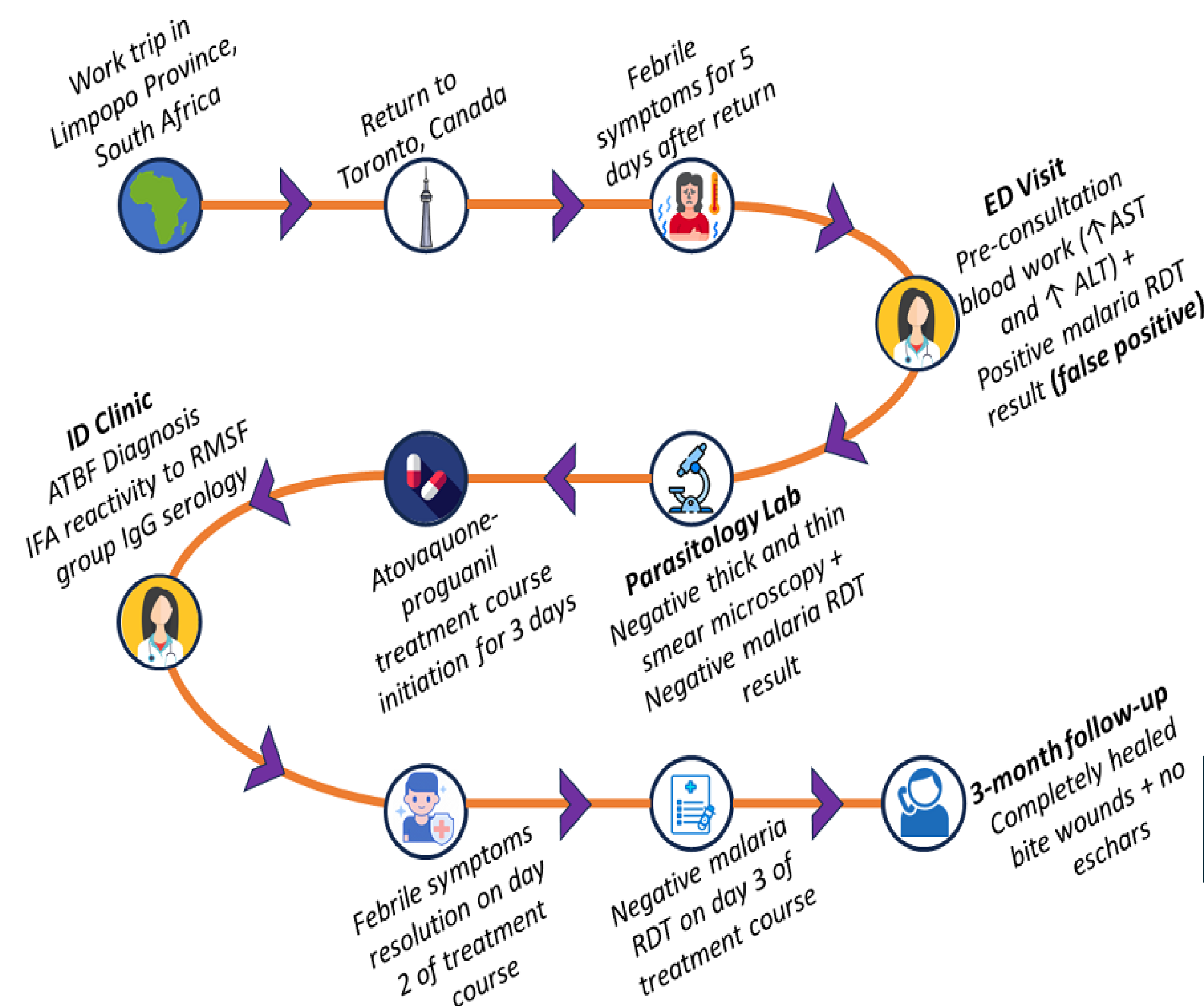


## Case Description

- A 58-year-old man presented with a 5-day history of fevers, chills and myalgias a day after returning from South Africa.

## Investigations

- Positive initial Malaria RDT (BinaxNOW<sup>®</sup>) with detection of both *P. falciparum* specific histidine-rich protein II (HRP-2) antigen (T1) and pan-*Plasmodium* aldolase antigen (T2) bands
- Negative repeat malaria RDT
- Negative thick and thin smear microscopy at the reference parasitology laboratory



**Figure 1:** Timeline of case presentation outlining the sequence of travel history, symptoms, diagnostic testing, treatment and recovery.

## Learning Points

- False positive malaria BinaxNOW<sup>®</sup> RDTs can occur due to ATBF.
- ATBF should be suspected in a traveler from Southern Africa, presenting with fever, eschars and lymphadenitis.

## References

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