

Subcapsular Hematoma of Spleen Secondary to Malaria

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Citation

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Abstract

Cases of malaria are quite unusual in the United States. During the first ten months of 2023, there have only been 44 cases reported to state health officials in the state of Arizona. Some have speculated that malaria and other Tropical diseases have become more common with increased immigration seen in the past few years.

CASE REPORT:

A 25-year-old immigrant from Senegal was admitted in custody of border patrol for headache, fever, chills and nausea. He was afebrile but was tachycardic. His Complete blood count showed normal WBC with mild lymphopenia. He was thrombocytopenic with platelet count of 92K. His peripheral blood smear showed toxic granulations, vacuolated neutrophils and Döhle bodies. Our hematology lab was concerned for the possibility of Malaria. Chemistry tests were normal except for bilirubin of 2.3.

An infectious disease consultation confirmed Malaria parasitemia from *Plasmodium falciparum*. An interpreter confirmed that he had malaria on a previous occasion. Treatment with Coartem was initiated. A right upper quadrant ultrasound was normal. Over several days the patient continued with fever and reported some left upper quadrant pain. Focused left upper quadrant ultrasound demonstrated heterogeneous splenomegaly and complex free fluid raising concern for splenic rupture or hematoma.

Urgent abdomen and pelvis CT scan with contrast confirmed presence of complex circumferential subcapsular fluid collection thought to represent subcapsular contained hematoma. (images below) Surgical consultation was requested.

We found the patient to be quite tender in the left upper abdomen. He was not febrile, and his hemoglobin was stable. After reviewing his imaging, we recommended splenectomy. This recommendation was based in part on our literature review suggesting that free rupture of subcapsular

hematoma in patients with malaria could happen and our uncertainty about his future travel and activity plans in this country. He certainly would be lost to follow-up.

He had an uneventful splenectomy, but the operation was challenging because of adhesions which were probably caused by reaction to his subcapsular hematoma. He received appropriate immunizations soon thereafter. His anti-malarial treatment continues. (bivalved specimen images below)

Figure 1



Figure 2

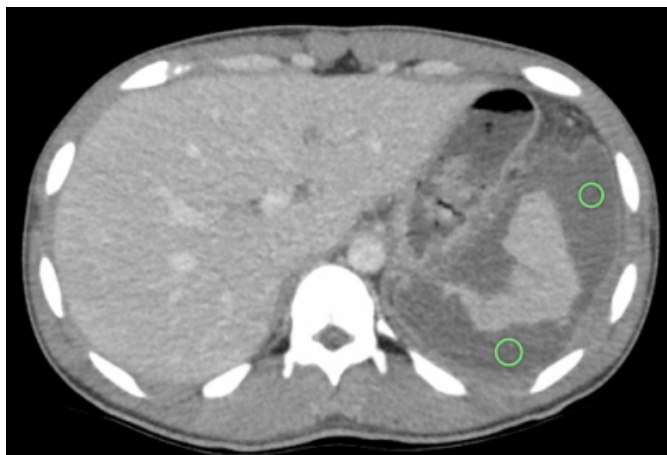
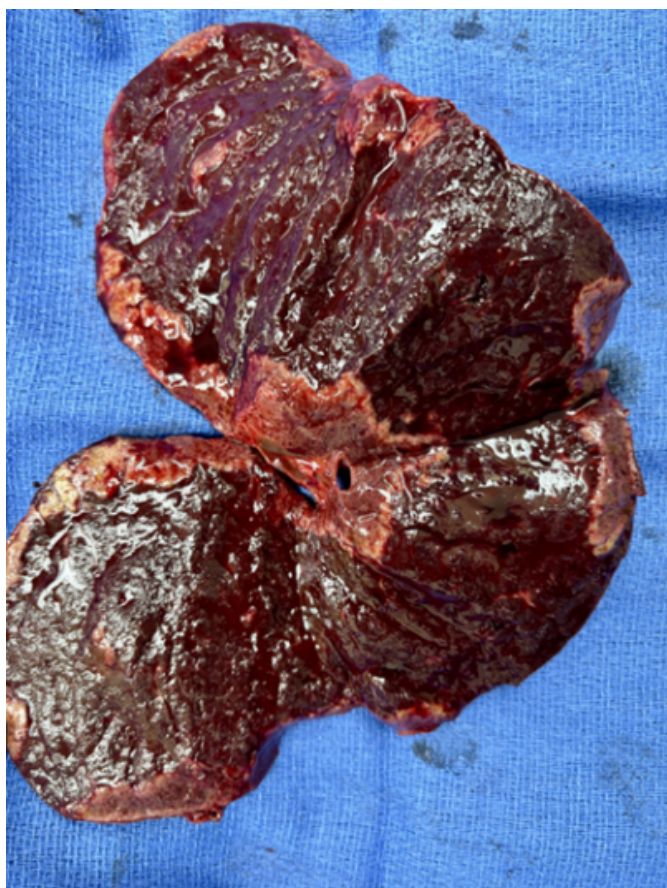


Figure 3



DISCUSSION:

Clinical infections from Malaria have been quite uncommon

in the United States. Infections were sometimes in Americans traveling to endemic areas. Surging immigration in recent years has included populations from all over the world including locations where malarial infections are endemic. There were only 12 cases of malaria reported in Arizona in 2020. In 2022, there were 26 reported cases and in the first ten months of 2023, 44 cases have been to Arizona Department of Health Services.

The spleen plays an important role in the immunologic response to malaria parasites and enlargement of the spleen is typical. Gibney and Zingman reviewed the surgical aspects and surgical complications of malaria. (1,2) The most serious surgical complication is splenic subcapsular hematoma and free splenic rupture.

Imbert reviewed pathologic rupture of the spleen in 55 patients over a period of 50 years. All species of Malaria were associated with this complication. Splenic rupture led to death in 22% of patients. Surgical treatment was immediate or delayed in 60% of patients with splenic rupture. (3)

Subcapsular splenic hematoma has also been reported in patients with malaria. (4,5) There have been reports of patients with subcapsular hematoma progressing to free rupture and even death. Treatment recommendations have ranged from cautious observation to embolization to splenectomy. We chose to do splenectomy in our patient to prevent the possibility of free rupture and because of our certainty that he will be lost to follow-up after leaving our facility.

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