

# ROCKY MOUNTAIN SPOTTED FEVER MASQUERADING AS GASTROENTERITIS

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## Introduction

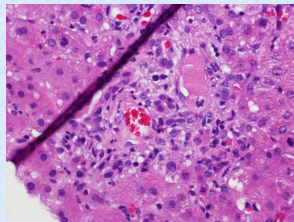
- Rocky Mountain spotted fever (RMSF) is a potentially lethal tick-borne illness.
- RMSF multiplies within blood vessels, causing endothelial damage before spreading hematologically to affect various organ, including the gastrointestinal tract.
- The classic triad of fever, rash, and a recent tick bite is rarely present at diagnosis.
  - Less known, but more common initial presentations include hepatic and gastrointestinal (GI) symptoms such as anorexia, nausea, vomiting, abdominal pain, and elevated liver function tests (LFT's).
- We present a case of RMSF that demonstrates the diagnostic challenges associated with this illness.



**Figure 1.** Abdominal computed tomography scan with diffuse inflammation causing the appearance of hepatomegaly and splenomegaly (a), appendicitis and colitis (b).

## Case Report

- A 20-year-old male presented to the hospital with diarrhea and abdominal pain.
- Initial vitals: hear rate 112-136, tmax 104°F
- Admission labs: AST 240 U/L, ALT 247 U/L, Tb 7.2 mg/dL and ALP 451 U/L
- Abdominal CT: ascites, periportal edema, and splenomegaly with infarction (Fig 1).
- The patient was empirically placed on piperacillin-tazobactam. Chronic liver disease and infectious disease work ups were unremarkable.
- Over the next three days, his symptoms worsened and he had increasing leukocytosis and LFT's. A liver biopsy was obtained revealing portal-based inflammation consisting predominantly of neutrophils, and mild bile ductular proliferation (fig2).
- On the fourth day, a serologic test for RMSF IgM antibodies was positive. The patient's antibiotics were changed to doxycycline. One day after the antibiotic change his fever resolved, LFT's decreased and GI symptoms improved.



**Figure 2:** Liver biopsy in RMSF revealing a nonspecific reactive hepatitis with peri-portal inflammation and surrounding bile ductular inflammation and proliferation.

## Discussion

- RMSF is an uncommon disease that remains a diagnostic challenge for physicians.
- GI symptoms are the more prominent features in up to 80% of RMSF patients and often precedes the appearance of a rash.
- Liver involvement in RMSF is also common, most frequently manifesting as AST and ALT elevation, with jaundice being a poor prognostic factor. Liver biopsies reveal infection of the endothelial lining and periportal inflammation.
- The treatment of choice for RMSF is doxycycline and patients often experience rapid improvement within 72 hours.
- Delayed treatment can lead to fulminant disease with a mortality rate of 25%, thus prompt diagnosis and early administration of appropriate antibiotics is imperative.
- Clinicians should be educated about the early manifestation of RMSF and consider it among the differential diagnoses in a patient with fever, GI symptoms, and hepatic involvement.

## CONTACT

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