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Spontaneous rupture of splenic hematoma in a malaria patient: Case report and review of literature

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ABSTRACT

INTRODUCTION: Blunt abdominal trauma is the most common cause of splenic rupture. Malaria is the most frequent tropical infectious cause of spontaneous splenic rupture. The exact mechanism is not well-defined.

CASE REPORT: We report a case of thirty-year-old male patient known to have malaria who presented with spontaneous splenic rupture. A trial of conservative treatment failed and splenecomy was done to control bleeding.

CONCLUSION: Spontaneous splenic rupture should be kept in mind in malaria patients presenting with left upper quadrant pain and signs of hypovolemia. Early diagnosis and treatment is essential.

1. Background

Blunt abdominal trauma is the most common cause of splenic rupture. Non-traumatic causes of splenic rupture include infection (Malaria is the most frequent tropical infectious cause), malignancy, vascular, or genetic disorders. The exact mechanism of spleen rupture is poorly defined. It should be kept in mind in patients presenting with clinical picture of splenic rupture and no history of trauma. Conservative treatment can be an option in stable patients while splenectomy remains the treatment of choice in patients with a hemoperitoneum and persistent instability.

2. Case report

Thirty-year –old male Pakistani patient, known to have malaria (plasmodium vivax) on treatment, presented to the emergency room with one-week history of headache associated with generalized body ache and dizziness. The patient reported fever, chills and rigors along with epigastric pain. Epigastric pain was present since one week but increased suddenly in the last twelve hours prior to presentation. This was associated with vomiting, loose stools and dark urine. No other complaints and no history of abdominal trauma. The patient reported history of recent travel to his country three months prior to presentation.

On examination, the patient was sweating profusely, conscious, oriented and jaundiced.

Vitals signs: His temperature (T) was 38 ◦ Celsius, his blood pressure (BP) was 95/62 mmHg, his pulse (P) was 99 beats/min and his respiratory Rate (RR) was 26 breaths/min. His oxygen saturation (SaO2) was 100%.

Abdominal examination revealed a palpable liver and spleen with localized epigastric tenderness.

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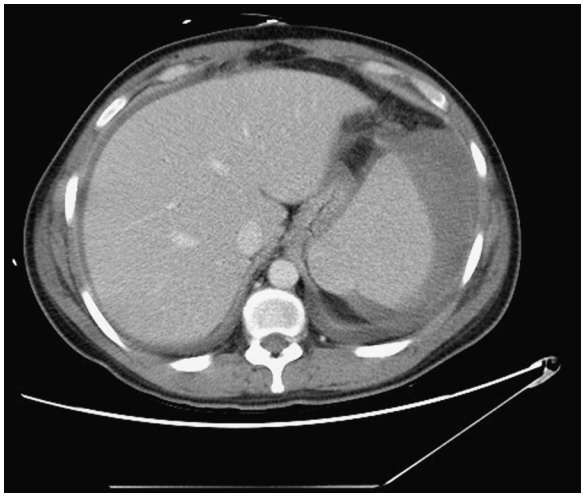

Fig. 1. Computed topography (CT) scan of the abdomen and pelvis with IV contrast showing haemoperitoneum with blood clot adjacent to spleen suggestive of rupture.

Laboratory investigations:

White Blood Cell (WBC) = 6900/uL, hemoglobin (Hgb) = 12.5 g/dL,

Creatinine (Cr) = 1 mg/dL, Prcoalcitonin (PCT) = 36 ng/ml and Lactic acid = 7.7 mmol/L

Blood film showed vivax malaria (ring forms).

After adequate resuscitation, the patient was stabilized with vital signs: BP = 118/81 mmHg and P = 84 beats/min and was shifted to radiology department where a computed topography (CT) scan of the abdomen and pelvis with IV contrast was done and showed:

- Haemoperitoneum with blood clot adjacent to spleen suggestive of rupture with no active extravasation (Fig. 1).
- Bilateral perinephric fluid and mild to moderate pleural effusion.

The patient remained stable so he was admitted to the surgical intensive care unit (ICU) in a trial of conservative treatment. On the second day, the patient complained of increased pain severity in the left upper quadrant; he become unstable with a BP = 75/41 mmHg and P = 110beats/min with sudden drop of hemoglobin (Hgb = 7.8 g/dL), so he was transfused by packed red blood cells, fresh frozen plasma and platelets in addition to intravenous fluid resuscitation and was shifted to the operating theatre for exploration. A pneumococcal vaccine was administered before shifting to the theatre.

On the operating table, the patient developed a cardiopulmonary arrest so cardiopulmonary resuscitation was done and the patient picked up. Exploratory laparotomy showed a large amount of blood (1.5 liters) and a grossly enlarged spleen with a ruptured large subcapsular hematoma (Fig. 2). The hemoperitoneum was cleared and splenectomy was done. No other pathology was found.

The patient was further managed in the surgical ICU. Acute renal failure was noticed and required haemodialysis. Blood film showed no malaria parasite after 3 days of anti-malarial treatment (Quinine and Clindamycin) and continued for seven days where he recovered with gradual improvement in his renal and hepatic function with gradual increase of hemoglobin over the following days. He was then extubated and transferred to the general ward where he received meningococcal & H. influenza vaccine prior to discharge and is followed up in the infectious disease outpatient clinic to continue anti-malarial treatment plan.

Histopathologic examination of the spleen showed splenomegaly (its weight is 492 g) with hemorrhage/hematoma and capsular rupture. Microscopically hemorrhage was confirmed together with slight red pulp expansion (Fig. 3) and foci of brown/black pigment in macrophages (Fig. 4). Giemsa stain was performed but plasmodia were not seen.

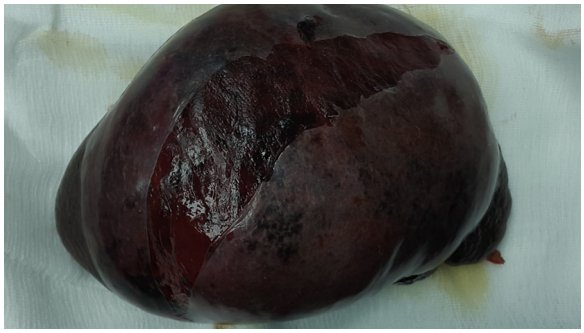

Fig. 2. Intraoperative finding of a grossly enlarged spleen with a ruptured large subcapsular hematoma.

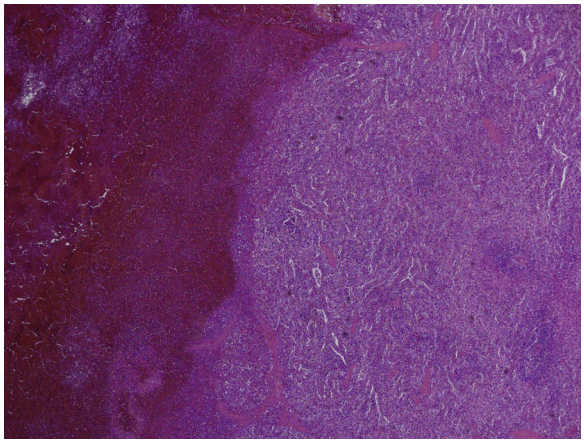

Fig. 3. Histopathology: Spleen showed hematoma/hemorrhage (left) with slight red pulp expansion (right). H&E (Taken by Dr Manal Abdulrahim).

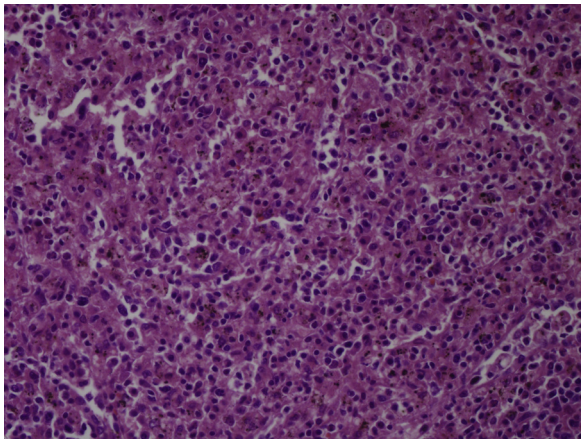

Fig. 4. Histopathology: High power view showing brown/black pigment in macrophages in the splenic tissue. H&E. (Taken by Dr Manal Abdulrahim).

3. Discussion

Blunt abdominal trauma is the most common cause of splenic rupture. Non-traumatic splenic rupture is rare and occurs in a diseased spleen. Among the non-traumatic causes, hematological