Spontaneous Splenic Rupture in Plasmodium Vivax Malaria

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ABSTRACT

Splenomegaly is one of the common complications of malaria most commonly associated with Plasmodium Vivax. Due to inadequate treatment, spleen can harbor parasite, which causes recurrent infection leading to splenomegaly and splenic rupture. Spleen is more prone to rupture in acute phase of infection. The exact mechanism of splenic rupture is still unknown but trauma, pressure of abdominal muscles on spleen due to sneezing and coughing plays important rule. Spontaneous splenic rupture although very rare in normal sized spleen, as in case presented here, is life-threatening complication. Therefore, early diagnosis and management plays important role in saving life.

Keywords: Malaria, Plasmodium vivax, Spontaneous, Splenic rupture.

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INTRODUCTION

Splenomegaly is one of common complication of malaria. Spontaneous splenic rupture which is unusual with normal sized spleen, pose serious complication leading to death. It is seen in acute infection of Plasmodium Vivax with enlarged spleen.[1]

CASE REPORT

In August 2019, a 23 years old male admitted in medical ward with 3 days history of high grade fever. He was diagnosed with Plasmodium VIVAX and was undergoing malarial treatment. In the past patient also suffered from fever due to malaria once and recovered smoothly after taking treatment. On 4th day of admission he developed severe abdominal pain with loose motions. There was no history of vomiting, headache, vertigo, chest pain, constipation, cough or urinary complaints. General physical examination revealed tachycardia, hypotension, sweating and pallor.

Abdominal examination revealed distended abdomen with generalized tenderness and guarding. Rest of systemic examination was unremarkable. His laboratory workup revealed Hemoglobin 7.6 g/dl, retic count.[2] 3%, White cell count 1.8 x 10^9/liter, serum amylase 41 IU/L and platelet count 43000/mm.[3] Renal and liver functions were normal with normal coagulation profile. Ultrasonography of abdomen showed moderate haemoperitoneum (confirmed with ascitic tap) and size of spleen was on upper limit of normal range. CECT abdomen (Figure) revealed splenic rupture with subcapsular haematoma and massive haemoperitoneum but size of spleen was on upper limit of normal range i.e., 13 cm. Exploratory laparotomy was planned and peroperatively ruptured spleen with active bleed and massive heamoperitoneum was seen. Splenectomy was performed and patient shifted to ICU, however post operative recovery was smooth and uneventful and discharged on 5th post operative day.

Figure: Contrast enhanced computed tomography abdomen showing splenic rupture with sub-capsular haematoma.

DISCUSSION

Plasmodium VIVAX can infect large population. In 2015, it infected 8.5 million populations with 300 deaths in South East Asian regions.[2] It can lead to life threatening conditions including multiple organ failure, acute respiratory distress syndrome, acute renal failure, hepatic failure, pulmonary oedema, severe thrombocytopenia and splenic rupture.[3]

Patients with low immunity are prone to acquire malaria, should avoid physical activities with risk of abdominal trauma, as this can lead to splenic rupture[4]. Due to inadequate treatment spleen can harbor

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parasite for years which can cause recurrent infection leading to splenic rupture.[5] The exact mechanism of splenic rupture is still unknown, but pressure of abdominal muscles on spleen due to sneezing and coughing, along with effect of activated lymphatic tissue and stasis in spleen sinuses due to damaged red blood cells plays important rule in splenic rupture.[4] Spleen is more prone to rupture in acute infection as spleen is soft with thin and tightly stretched capsule.[6] Early diagnosis of malaria is important as longer the symptoms persist, there are more chances of splenic supture.[7,8]

Non operative management is done in selected cases who are haemodynamically stable and splenic artery embolization is preferred in non traumatic cases. But in case of life threatening haemorrhage, splenectomy is treatment of choice.[6,9] However, in patients with high risk of future exposure to malaria, spleen preservation should be considered.[10]

CONCLUSION

Splenic rupture is very rare life threatening complication of that can occur after starting treatment,[9] due to malaria parasite infection, even in normal sized spleen as in case presented here. Therefore early diagnosis and management are pivotal in saving life.[9]

Conflict of Interest: None.

Authors' Contribution

AS: Conception, design, data analysis, MZ: Interpretation of data, MQ: Data analysis, S: Data collection.

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