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Tropical Splenomegaly Presenting as Tummy Crisis

Ayush Choudhari[1], Ramesh M Tambat[2]

[1]Post Graduate, Department General Surgery, [2]HOD & Professor,
Sapthagiri Institute of Medical Sciences & Research Center, Bengaluru, Karnataka, India

Corresponding Author: Dr. Ayush Choudhari

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ABSTRACT

Massive splenomegaly, defined as splenic enlargement extending into the pelvis, crossing the abdominal midline, or weighing over 1000 g, is an uncommon clinical finding with a broad differential encompassing hematologic, hepatic, and infectious etiologies. Tropical or hyperreactive malarial splenomegaly, thought to arise from an aberrant immune response to recurrent malarial infection, is a rare cause of chronic massive splenic enlargement in endemic regions. Splenic torsion complicating such enlargement is an exceedingly rare surgical emergency, and its co-occurrence with tropical splenomegaly has not been previously documented in the literature. We report the case of a 47-year-old who woman presented with a four-month history of progressive fatigue and was found to have severe anemia requiring transfusion. She subsequently developed acute diffuse abdominal pain with recurrent vomiting and abdominal distension. Examination revealed a markedly distended, tender abdomen with absent bowel sounds and a massive, palpable splenic mass extending to the right iliac fossa. Contrast-enhanced CT demonstrated a devascularized, torsed, massively enlarged spleen causing mechanical small bowel obstruction. After resuscitation, she underwent emergency exploratory laparotomy, which revealed an absence of the normal splenic suspensory ligaments — consistent with a wandering spleen — with associated torsion. Detorsion followed by splenectomy was performed, yielding a spleen weighing 2100 g. Postoperative recovery was uneventful, and subsequent workup established a diagnosis of tropical splenomegaly as the underlying cause of splenic enlargement. This case highlights an unusual presentation in which an underlying tropical splenomegaly predisposed to splenic torsion in a wandering spleen, precipitating acute small bowel obstruction — a combination without prior report in the literature. Clinicians in malaria-endemic settings should maintain a high index of suspicion for splenic torsion as an acute surgical complication in patients with massive splenomegaly of tropical origin.

Keywords: *Massive splenomegaly; Wandering spleen; Splenic torsion; Tropical splenomegaly; Hyperreactive malarial splenomegaly; Small bowel obstruction; Splenectomy*

INTRODUCTION

Splenomegaly is a common clinical finding, but massive splenomegaly — conventionally defined as splenic enlargement extending below the umbilicus, crossing the midline, or reaching a weight of 500–1000 g or more — is far less frequent and carries a distinct diagnostic and management challenge. Large case series have shown that hematologic disorders account for the largest proportion of cases,

followed by hepatic and infectious causes, with the differential diagnosis spanning myeloproliferative neoplasms, lymphoma, Gaucher disease, thalassemia major, visceral leishmaniasis, and malaria.

Among infectious causes, malaria is a well-recognized trigger of splenic enlargement, though progression to massive splenomegaly is uncommon. When it does occur in the setting of chronic or repeated malarial exposure, it is often attributed to hyperreactive malarial splenomegaly (also termed tropical splenomegaly syndrome), a condition believed to result from a dysregulated immunologic response to recurrent Plasmodium infection rather than active parasitemia at the time of presentation. Because no single confirmatory test exists, tropical splenomegaly remains a diagnosis of exclusion, established only after hematologic, infectious, and neoplastic alternatives have been ruled out. First-line management is medical, with antimalarial therapy considered the treatment of choice; splenectomy is generally reserved as a last resort, given the heightened long-term risk of overwhelming post-splenectomy infection in this population. Estimates suggest the condition affects roughly 1–2% of the population in malaria-endemic areas.

CASE REPORT

Patient Information

A 47-year-old woman, resident of Alappahalli, Bangalore, presented with a four-month history of progressive easy fatiguability. She reported that she had previously been able to carry out her routine daily activities without difficulty but had gradually developed exercise intolerance and functional limitation. She had no significant past medical, surgical, or personal history.

History of Presenting Illness

The patient was initially admitted under the General Medicine department for evaluation of her fatigue, where she was diagnosed with severe anemia and received one unit of packed red blood cell transfusion. During the course of her hospital stay, she developed sudden-onset diffuse abdominal pain accompanied by nausea and six to eight episodes of vomiting, along with progressive abdominal distension. In view of these acute findings, she was referred for surgical evaluation.

Clinical Examination

On general physical examination, the patient was dehydrated with pallor. Her vital signs were stable, with a pulse rate of 82 beats per minute (regular, normovolumic) and blood pressure of 100/70 mmHg.

Abdominal examination revealed a tense, distended abdomen with diffuse tenderness and an abdominal girth of 110 cm. The umbilicus was displaced inferiorly. A massive splenomegaly was palpable, extending down to the right iliac fossa, and bowel sounds were absent on auscultation — findings suggestive of an acute intra-abdominal process with intestinal obstruction.

Investigations

Laboratory workup revealed severe anemia, with a hemoglobin of 4.2 g/dL, red blood cell count of 1.67 million/µL, packed cell volume of 13.0%, MCV of 77.8 fL, MCH of 25.1 pg, MCHC of 32.3 g/dL, and a reticulocyte count of 3.5%.

Ultrasonography of the abdomen and pelvis demonstrated massive splenomegaly with mild ascites and a few prominent small bowel loops in the right lumbar and right iliac fossa regions.

Contrast-enhanced computed tomography (CECT) of the abdomen and pelvis confirmed a devascularized, massively enlarged spleen with torsion, along with minimal ascites and mild hepatomegaly. Taken together, the imaging findings were consistent with small bowel obstruction secondary to massive splenomegaly with splenic torsion.

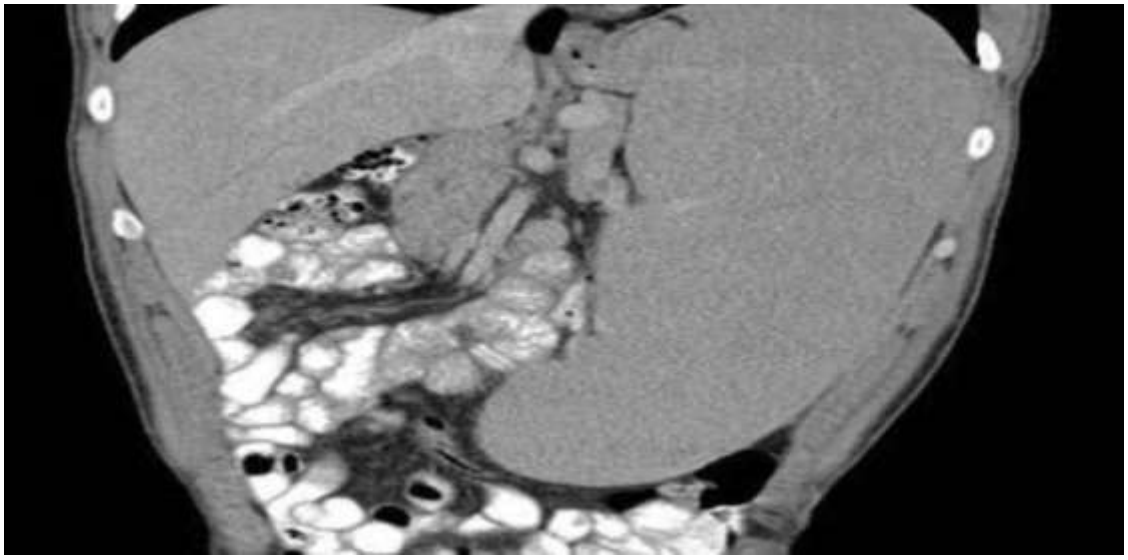

Figure 1: CECT Abdomen & Pelvis

Management

The patient was initially resuscitated and hemodynamically stabilized. Given the imaging findings of splenic torsion with associated bowel obstruction, she was planned for emergency exploratory laparotomy.

Operative Findings and Procedure: A midline laparotomy incision was made, and the spleen was delivered into the operative field. Notably, no splenic suspensory ligaments were identified, confirming the diagnosis of a wandering spleen as the underlying anatomical abnormality permitting torsion. Detorsion of the spleen was performed, following which the splenic hilum was clamped, ligated, and splenectomy was carried out. The abdominal cavity was thoroughly inspected before closure in layers.

The excised spleen weighed 2100 grams and measured 20 × 18 cm.

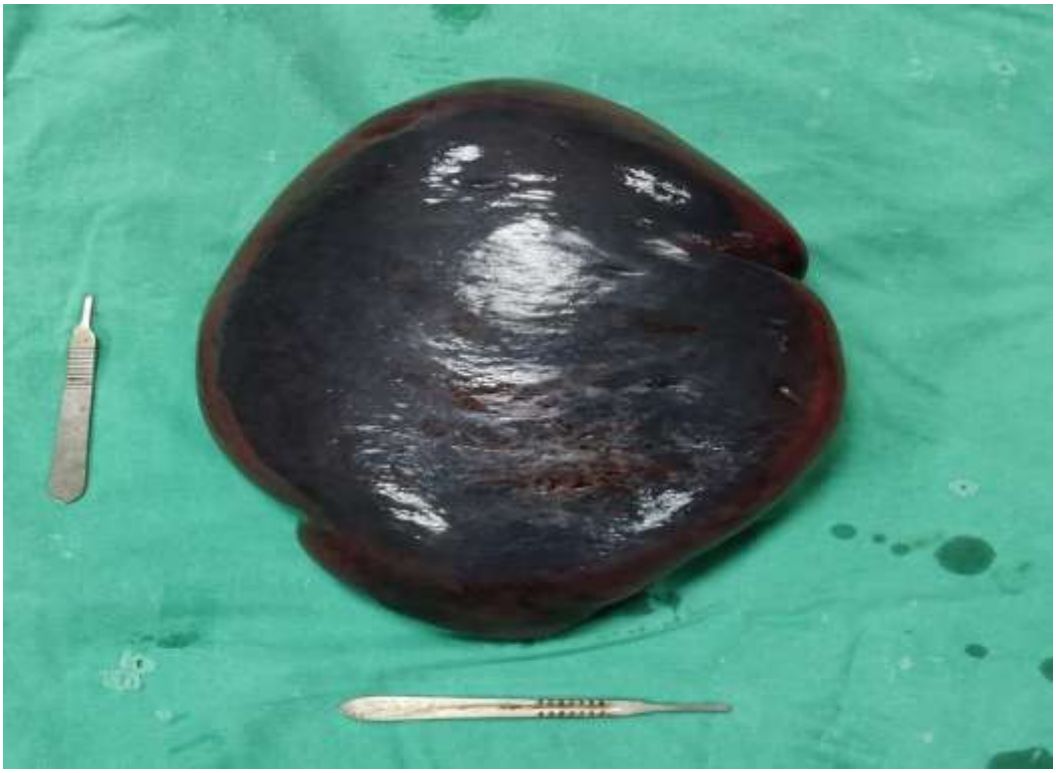

Figure 2: Splenectomy specimen

Postoperative Course

The patient remained hemodynamically stable postoperatively and received two units of packed red blood cell transfusion. In accordance with standard post-splenectomy protocol, pneumococcal and meningococcal vaccination was administered 48 hours after surgery. She was subsequently evaluated to determine the underlying cause of her splenomegaly and was diagnosed with tropical splenomegaly.

Final Diagnosis

Small bowel obstruction secondary to tropical massive splenomegaly complicated by torsion of a wandering spleen.

RESULT

The patient underwent emergency exploratory laparotomy for small bowel obstruction secondary to massive splenomegaly with torsion. Intraoperatively, a massively enlarged spleen weighing 2100 grams and measuring 20 × 18 cm was identified, with complete absence of the normal splenic suspensory ligaments, confirming a wandering spleen with associated torsion as the underlying pathology. Detorsion followed by splenectomy was successfully performed without intraoperative complication.

The patient tolerated the procedure well and remained hemodynamically stable throughout the perioperative period. She required transfusion of two units of packed red blood cells postoperatively to correct her pre-existing severe anemia. Pneumococcal and meningococcal vaccination was administered 48 hours after splenectomy, in line with standard post-splenectomy immunization protocol, to reduce the risk of overwhelming post-splenectomy infection.

Postoperative recovery was uneventful, with resolution of abdominal distension, return of bowel sounds, and gradual improvement in hemoglobin parameters. Subsequent clinical and laboratory evaluation to determine the etiology of the splenomegaly excluded myeloproliferative disease, lymphoma, and visceral leishmaniasis, and established a diagnosis of tropical splenomegaly as the underlying cause of the patient's massive splenic enlargement.

At the time of discharge, the patient was clinically stable, ambulatory, and tolerating an oral diet, with no evidence of postoperative complications.

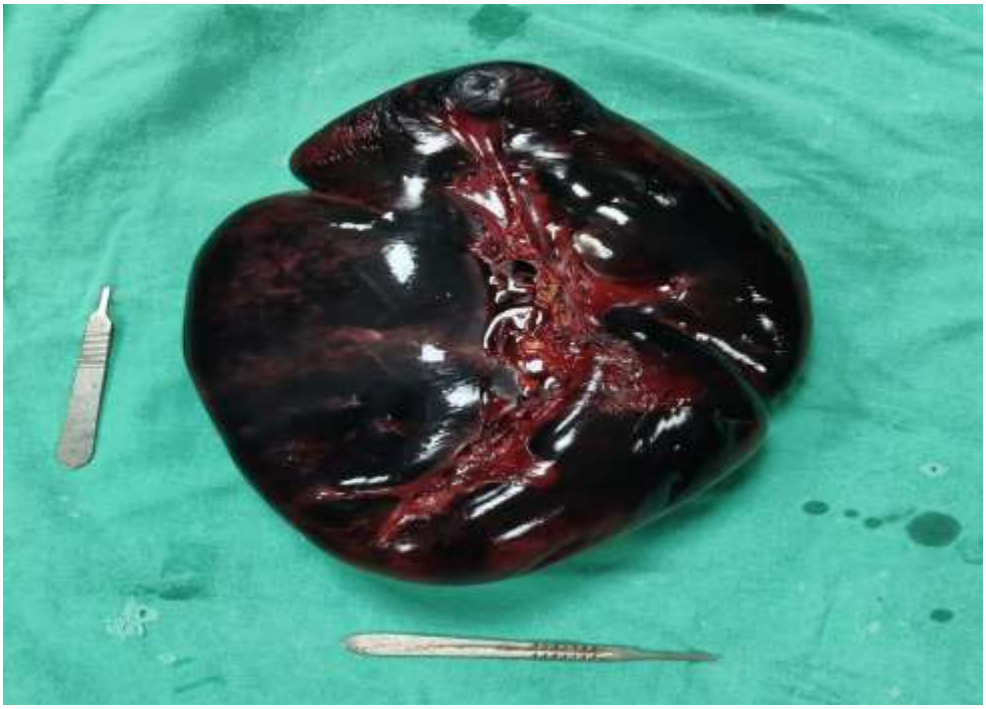

Figure 3: Splenectomy specimen

DISCUSSION

Massive splenomegaly is defined as spleen extending into lower quadrant or pelvis or crossed midline of abdomen weighing at least 500 – 1000 g. Among patients with massive splenomegaly, 31% had a hematologic disorder, 17% had hepatic disease, and 8% had infectious disease. differential diagnosis of massive splenomegaly - myeloproliferative diseases, Gaucher disease, lymphoma, thalassemia major, visceral leishmaniasis(kala-azar), and malaria

Malaria can frequently cause splenomegaly, but massive splenomegaly is rare. Hyper reactive malarial splenomegaly is a complication of malaria that can cause chronic massive splenomegaly. Due to abnormal immune response to repeated malaria infections. Tropical splenomegaly is a diagnosis of exclusion Treatment: Gold standard – medical management with antimalarial drugs Splenectomy – poor prognosis due to overwhelming infection.

CONCLUSION

The case underscores the importance of maintaining a high index of suspicion for splenic torsion as an acute surgical emergency in patients presenting with an acute abdomen against a background of known or suspected massive splenomegaly, particularly in malaria-endemic regions. Prompt recognition through imaging, timely resuscitation, and early surgical intervention were key to the favorable outcome in this patient. Splenectomy, though generally reserved as a last resort in tropical splenomegaly given the long-term infective risks of asplenia, remained the only viable option once irreversible splenic torsion and devascularization had occurred.

This report adds to the limited body of literature on the surgical complications of tropical splenomegaly and emphasizes the need for clinicians to consider mechanical complications such as torsion and bowel obstruction in the differential diagnosis of acute abdominal presentations in patients with massive splenomegaly of infectious origin.

Declaration by Authors

Ethical Approval: Not required for single case report as per institutional policy

Informed Consent was obtained from the patient for publication of clinical details and images

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Conflict of Interest: No conflicts of interest declared.

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