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Case report

Wandering spleen: An unsuspected presentation at a general hospital in Uganda

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ABSTRACT

Introduction and importance: Wandering spleen is an uncommon condition marked by splenic hypermobility due to laxity or underdevelopment of the supporting splenic ligaments. Patients may be asymptomatic, have a palpable mass in the abdomen, or exhibit acute, long-lasting, or sporadic symptoms as a result of the spleen's pedicle torsion. The management should be determined by the spleen's vitality.

Case presentation: We report a case of a 29-year-old male who presented with a 5-year history of progressive abdominal swelling, surgically managed as an intrabdominal tumor at a general hospital in Uganda, with a postoperative confirmation of a wandering spleen.

Clinical discussion: Wandering spleen is a rare condition both in high- and low-income countries. Clinical presentations vary from an asymptomatic abdominal mass to acute abdominal pain due to vascular pedicle torsion leading to splenic infarction. When possible, splenopexy is the procedure of choice, especially in children and in tropical countries, to avoid post-splenectomy sepsis. Splenectomy is the definitive treatment for spleen fracture, spleen infarction, or symptoms that recur after splenopexy.

Conclusion: Wandering spleen is a rare differential diagnosis of intrabdominal tumor that must be considered in patients with a palpable abdominal mass with or without acute or chronic abdominal pain. Though a CT scan is the best method to confirm the diagnosis, the radiologist's and surgeon's experience and keenness seem very vital in making the correct diagnosis.

Intraoperative complete abdominal exploration by the surgeon is essential to confirm the radiological findings, to enhance the diagnosis, and to make the best treatment decision.

1. Introduction

Usually situated in the left upper quadrant of the abdomen, the spleen is maintained in place by four principal ligaments: the gastrosplenic ligament, the colicosplenic ligament, the phrenosplenic ligament, and the splenorenal ligament [1].

Wandering spleen is an uncommon condition marked by splenic hypermobility brought on by underdevelopment or acquired laxity of the supporting splenic ligaments, and it seems to be more common in women of reproductive age [2]. A number of factors contribute to the etiology of the wandering spleen, including congenital abnormalities in the dorsal mesogastrium's development, failure of the dorsal mesogastrium to fuse to the posterior abdominal wall during the second month of embryonic development (resulting in an abnormally long splenic pedicle), and absence or malformation of the normal splenic suspensory ligaments (gastrosplenic and splenorenal ligaments) that normally attach the spleen to its normal position [3]. In addition, a wandering spleen may be related to infectious mononucleosis, splenomegaly, malaria, Hodgkin disease, Gaucher disease, and prior pregnancy as acquired factors [4].

Because of this abnormal anatomical condition, the vascular pedicle is usually elongated and mobile, allowing its torsion and leading to splenic infarction [3,5].

Symptoms are therefore related to organ compression or to vascular pedicle torsion.

On clinical examination, patients may present with an asymptomatic palpable mobile mass, a mass with abdominal pain, or an acute abdomen. Chronic intermittent abdominal pain, gastric compression or

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distension, and acute pancreatitis may also occur [6,7].

In this case study, a 29-year-old male was diagnosed with an epigastric solid tumor after complaining of a 5-year history of progressive abdominal swelling and pain and presenting to the emergency department of a general hospital in Uganda.

The work has been reported in line with SCARE criteria [8].

2. Ethic statement

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images.

3. Case report

A 29-year-old male presented to the emergency ward of our institute with a 5-year history of a slowly increasing epigastric swelling and a 1-month history of postprandial fullness and epigastric pain. He reported normal bowel movements, no blood in the stool, no vomiting, no fever, and no weight loss. His past medical history was unremarkable.

Physical examination revealed normal vitals: temperature 36.8, pulse 74 beats/min, and bp 110/80 mmHg.

Abdominal examination revealed a palpable, firm, ballotable, non-tender, non-fluctuant, and approximately 15 × 12 cm in diameter epigastric mass.

A malaria blood smear and HIV test were negative, and a complete blood count showed normal parameters.

An abdominal CT scan with i.v. contrast enhancement was performed which confirmed an epigastric solid mass measuring 20 × 15cm, highly vascularized with internal calcification (Fig. 1), liver and spleen reported as normal without any other abnormal findings.

He was then admitted to the surgical ward with the diagnosis of a solid intrabdominal tumor and for further management.

At exploratory laparotomy, the immediate finding was a highly vascularized lobulated mass utterly fused into the greater omentum. All the feeder vessels were clamped, ligated, and transected with en-bloc removal of the mass. Further exploration of the abdominal cavity revealed the absence of the spleen in the left upper quadrant, contrary to the CT report.

Macroscopic examination of the excised tumor section was highly suspicious of splenic tissue, (Fig. 2) hence a tissue biopsy was taken for histopathological evaluation.

The postoperative recovery was uneventful. On the fifth post-operative day, the patient received a dose of prophylactic pneumococcal vaccine and was discharged. At 1-month post-operative review he was in good health.

The final histopathology examination showed splenic tissue, confirming the hypothesis of a wandering spleen.

4. Discussion

With a frequency of less than 0.25 % in patients who need splenectomy, a wandering spleen is a rare condition [9]. In Uganda, only 11 cases have been reported in literature [10].

Patients with a wandering spleen typically present with an abdominal mass, nonspecific gastrointestinal problems, or acute abdomen [3,6,7,9]. While symptoms may go unnoticed for extended periods of time, complications are linked to vascular pedicle torsion and splenic infarction or to other abdominal organ compression. Among them are pancreatitis, intestinal blockage, duodenal and gastric volvulus, and compression [3,6,10].

In our case, the patient presented with a progressive abdominal mass, intermittent mild abdominal pain, and postprandial fullness.

The preferred diagnostic method is an i.v. contrast-enhanced CT scan, and the most distinguishing feature is the lack of the spleen in its normal location and the presence of an ectopic mass in the pelvis or abdomen [7]. In our case, the CT report showed a solid epigastric intrabdominal tumor with a normal spleen. However, this was contrary to the intraoperative exploration finding of a missing spleen in the left upper quadrant after en-bloc tumor excision.

If the spleen is not infarcted, splenopexy is the preferred treatment. Nevertheless, a splenectomy is required if there is torsion with infarction [11]. In our case, the lack of accuracy of the CT diagnosis, the fixity of the mass in the greater omentum and lesser sac with a very unclear vascular pedicle, and the rarity of the anatomical condition prompted a straightforward tumor excision. Only further intraoperative exploration revealed the absence of the spleen, and histopathological examination confirmed the diagnosis of a wandering spleen.

Following a splenectomy, prophylactic vaccinations against post-splenectomy sepsis syndrome should be administered [12]. In our case, the patient received the prophylactic pneumococcal vaccine on the fifth postoperative day, the day of discharge.

5. Conclusions

Wandering spleen is a rare differential diagnosis of intrabdominal tumor that must be considered if a patient presents with a palpable abdominal mass. Though CT scan is the best method of diagnosis, the surgeon's and radiologist's experience and keenness in interpreting CT images seem very vital in making the correct diagnosis.

In our low-income setting, abdominal CT scans are rarely performed, mostly because patients cannot afford the expensive cost of the exam and there is not a radiologist in our hospital to discuss cases with. CT scans performed in our hospital are reported telematically by a radiologist in Kampala.

The diagnosis and characterization of intraddominal masses in our

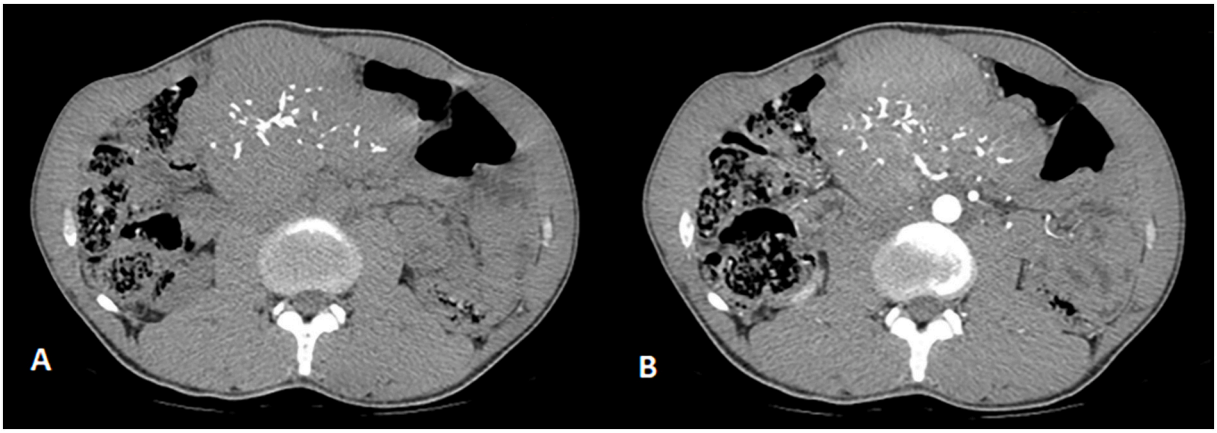

Fig. 1. I.V. enhanced CT scan showing a solid epigastric mass highly vascularized with internal calcification. A) non-contrast B) contrast arterial phase

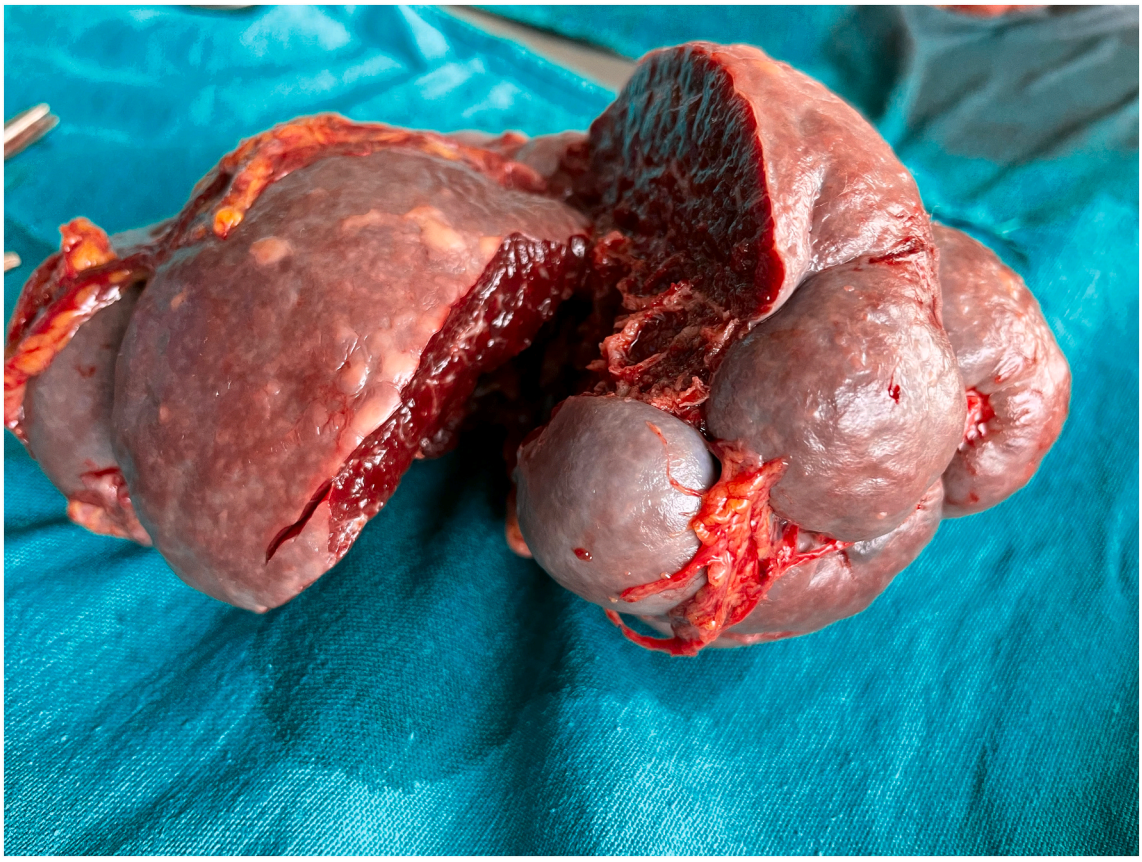

Fig. 2. Specimen

setting are mostly clinical and ultrasound based. The presence of advanced diagnostic instruments, like a CT scan, is a great resource, but it must also be accompanied by a staff prepared for its interpretation.

In conclusion, with the rarity of the condition and the limited CT scan exposure of most surgeons in the developing world, a complete surgical exploration of the abdomen before tumor removal is mandatory to reach a definitive diagnosis and make the best surgical decision.

Consent and Ethical approval.

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images. The ethical approval has been exempted by our institution, considering that the case was written using retrospective and anonymous data.

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CRediT authorship contribution statement

LA, BM: data collection and interpretation.

JA: data analysis and final revision.

LS, JO: data interpretation, writing paper and final revision.

Declaration of competing interest

N/A

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