WANDERING SPLEEN: CHALLENGE IN DIFFERENTIAL DIAGNOSIS WITH ABDOMINAL TUMORS: A CASE REPORT AND REVIEW OF LITERATURE

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Wandering spleen is a very rare disease, which might lead to a misdiagnosis as other abdominal masses. We report a 40-years-old male presenting to our hospital with chronic pain in the lower abdomen. An abdominal computed tomography scan revealed a solid, contrast-enhanced tumor in the hypogastric region with a size of 50x65mm, and the spleen was not seen at the normal anatomical site. The patient was preoperatively diagnosed with a mesenteric gastrointestinal stromal tumor (GIST) and underwent resection surgery. However, postoperative histopathology was benign splenic tissue. Diagnosis of a wandering spleen can be difficult. In this circumstance, the patient was only diagnosed correctly based on postoperative histopathology.

Keywords: Wandering spleen, splenectomy.

I. INTRODUCTION

The spleen is an organ of the lymphatic system that is responsible for varied functions in the body. It is typically located in the left upper quadrant of the abdomen where it is fixed by various suspensory ligaments. Wandering spleen is a rare clinical condition, with only about 500 cases reported worldwide and an incidence rate of 0.2%.[1,2] The clinical presentations of wandering spleen are very various. It could be asymptomatic for a long time and discovered incidentally through physical examination or imaging, or present as acute abdominal abdomen due to torsion with subsequent infarction.[3-5] Due to its rarity and atypical clinical presentation, the ectopic spleen is a diagnostic challenge for clinicians and it can be misdiagnosed with other abdominal diseases.[6,7] The objective of this article is to present a case of wandering spleen that caused a diagnostic challenge and review the understanding of this disease in the literature.

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Received: 12/09/2025
Accepted: 07/10/2025

II. CASE PRESENTATION

A 40-years-old male with an insignificant past medical history presented to our hospital because of chronic pain in the lower abdomen for 3 months with normal defecation and no vomiting. Through physical examination, a well-defined solid mass about 5x5cm in size with smooth surface was palpated in the hypogastric region. There were no sign of bowel obstruction and no lesion were found through digital rectal examination. Routine complete blood count and blood chemistry test results were within normal limits. Gastroscopy and colonoscopy showed no lesions. On the abdominal computed tomography scan, there was a contrast-enhanced solid mass in the hypogastric region of 50x65mm in size. Additionally, the spleen was absent at the usual anatomical site.

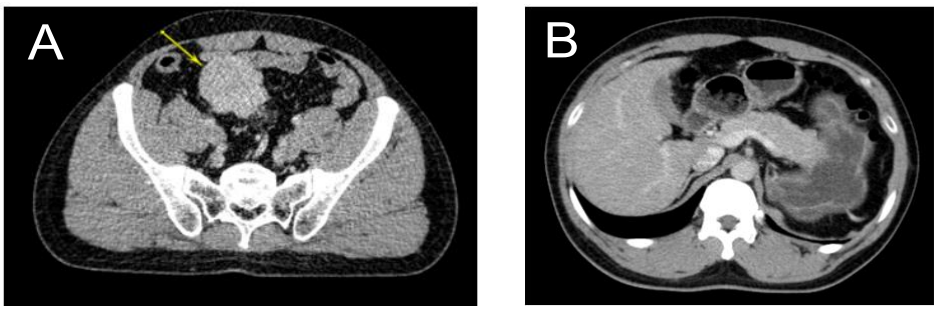

Figure 1. CT scan images: (1A) A contrast-enhanced tumor with a size of 50x65mm located at the hypogastric region (yellow arrow). (1B) Absence of the spleen in the normal position (left hypochondriac region)

The patient was preoperatively diagnosed with a mesenteric GIST and scheduled for an exploratory laparotomy. During the surgery, the spleen was not found, and the lesion was a solid mass about 8x6x6cm in size, with unclear pedicle and no invasion of adjacent structures. Partial mass necrosis was observed and the appearance of the mass was not typical of a normal spleen. The patient underwent complete resection of the mass. However, postoperative histopathology is benign splenic tissue.

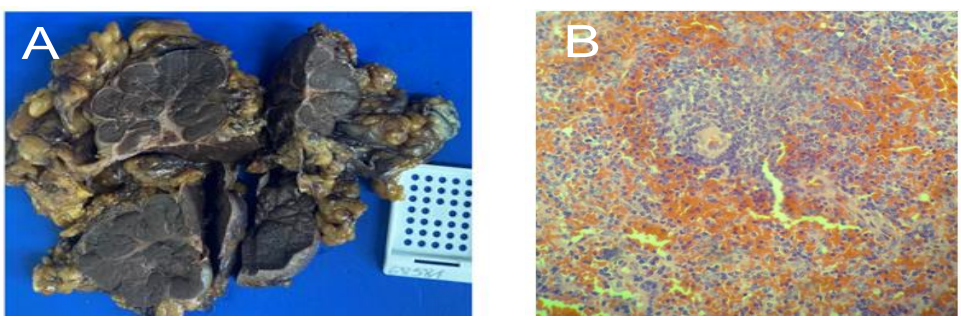

Figure 2 Pathological images of mass after surgery: (2A) structure of the mass was similar to spleen. (2B): Micropathological image (x40) revealed typical structure of spleen tissue with red and white pulp

III. DISCUSSION

Wandering spleen is characterized by excessive mobility of the spleen from its normal anatomical position due to unduly long splenic pedicle, or impaired function of the suspensory ligaments system including the gastrosplenic ligament, the splenorenal ligament, and the phrenic colic ligament.[8,9] The primary cause is a fusion anomaly of the dorsal mesogastrium of the spleen that results in failure and laxity of its normal attachment to the diaphragm, retroperitoneum, and colon. Pregnancy may change the anatomical position of the abdominal organs and contribute to ligamentous lengthening due to laxity of the abdominal wall and hormonal changes. Therefore, the acquired anomalies usually occur in active reproductive women, especially in multiparous women.[5,6,10]

The wandering spleen is more frequent in children and young multiparous women. Carswell reported that 8/11 wandering spleen

cases occurred in children.[11] The clinical presentation of a wandering spleen can be diverse. Many cases are asymptomatic and this condition may be diagnosed incidentally through physical examination or imaging for other unrelated reasons. Patients may have a chronic dull abdominal pain due to compression of the mass or an acute abdomen due to splenic pedicle torsion with subsequent infarction. In a systematic review of 133 cases of ectopic spleen reported by Buehner and Backer, 18,8% of patients was admitted to the hospital because of acute symptoms.[12] Meanwhile, Allen reported that 51% of ectopic spleen cases were hospitalized because of acute symptoms, only 23% of which had the correct diagnosis of splenic pedicle torsion preoperatively.[13] Other clinical symptoms include nausea, vomiting, fever, hypersplenism, leukocytosis, peritoneal signs, and a palpable mass in the abdomen or pelvis, etc. In our case, the patient was hospitalized because of chronic dull abdominal pain, which may be a consequence of the chronic splenic infarction or compression to adjacent organs.

The imaging diagnosis of an ectopic spleen is mainly based on ultrasonography and abdominal computed tomography scan. The absence of spleen from usual anatomical site and the presence of a contrast-enhanced mass in the abdomen or pelvis is suggestive signs for ectopic spleen. However, many cases are also difficult to be correctly diagnosed preoperatively. In our case, it should be noted that even during surgery we still misdiagnosed the mass, because of its altered appearance which made us think more about the mesenteric gastrointestinal stromal tumor. Hence, the patient can only be diagnosed correctly based on postoperative histopathology. This presented a challenge for clinicians and surgeons.

Currently, there are two treatment approaches for wandering spleen: splenopexy for potentially conservative cases or splenectomy, which can be through open laparotomy or laparoscopy. Because of the rarity of the ectopic spleen, the management approach of this disease depends on the surgeon's decision on a case-by-case presentation. In conservative surgery, the spleen is usually brought into the left upper quadrant of the abdomen , then fixed by meshes,or sutured the splenic hilum to the splenic bed, or sutured the greater curvature of the stomach to the anterior abdominal wall to immobilize the spleen.[9,10,14,15]

Colins and Hatfield et al suggested splenectomy should be performed for all cases of the ectopic spleen due to the risk of pedicle torsion.[16] Meanwhile, Allen et al supported the view that surgery should be indicated for all cases of the ectopic spleen, in which splenectomy is the absolute indication for cases with acute abdominal symptoms.[13] However, in asymptomatic cases or those with chronic symptoms without splenic infarction, conservative surgery by splenopexy should be indicated, especially in young patients.[13] Nawaz recommended that splenopexy should be performed rather than splenectomy due to the risk of infection in children, especially those younger than three years of age. Even in some cases of partial splenic infarction or when immobilization is difficult due to splenomegaly, partial splenectomy may be indicated for organ preservation.[17]

In clinical practice, it is generally the opinion of experienced surgeons to attempt to perform splenopexy in the absence of acute symptoms or infarction, especially in young patients. In our 40-years-old male patient, the partially necrotic tumor in the hypogastrium was assessed intraoperatively as gross dissimilarity to the spleen and was more likely a mesenteric gastrointestinal stromal tumor. Therefore,

the tumor was resected en-bloc., However, postoperative histopathology micropathological image (x40) revealed typical structure of spleen tissue with red and white pulp; as such the patient could be discharged after five days of hospital stay with no significant complication.

IV. CONCLUSIONS

Wandering spleen is a rare disease and can be misdiagnosed due to diverse clinical presentations. Splenectomy has classically been the treatment of choice for wandering spleen with acute abdominal pain or infarction, while splenopexy for organ preservation should be considered for young patients.

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