Splenic Torsion of a Wandering Spleen

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KEY WORDS: spleen, torsion, wandering spleen, splenectomy, abdominal pain

A 22 year old woman was admitted with sudden-onset abdominal pain of 2 days duration localized mainly in the left upper quadrant and two episodes of diarrhea. The pain was constant and did not radiate elsewhere. Further anamnesis revealed no abnormalities. On examination, she was afebrile (36.6°C) with normal heart rate (75 beats per minute) and blood pressure (117/76 mmHg). Physical examination was within normal limits except for slight tenderness in the left upper quadrant of the abdomen, with a palpable ovoid mass in a horizontal position just below the rib cage.

Laboratory tests revealed normal white blood cell count and normal hemoglobin level, but the platelets count was slightly low (119 x 10^9/L) and C-reactive protein somewhat elevated (6.64 mg/dl). Abdominal sonography showed an enlarged spleen located in an unusual position (rotated anteriorly and horizontally), with heterogeneous patchy texture and hypo-echoic and hyper-echoic regions. Doppler sonography demonstrated preserved arterial blood flow while venous drainage was diminished with narrowing of the splenic vein [Figure A]. The impaired venous outflow was suspicious for partial vein thrombosis. Enhanced computed tomography demonstrated an enlarged spleen (14 x 9 x 15.2 cm) with large hypo-dense regions compatible with wide ischemic areas. The scan showed stranding and a whorl of concentric arcs in the region of the splenic hilum [2] [Figure B].

Because of the irregularity of the spleen and the question of its viability, the patient was referred to splenectomy. Exploratory laparotomy through a left Kocher’s incision was performed followed by total splenectomy. The operative findings demonstrated a congested spleen, rotated 90° clockwise. The spleen was freely mobile on its pedicle with no ligamentous attachments at all [Figure C].

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*These authors contributed equally to the study

[A] Doppler sonography of the splenic hilum showing minimal venous blood flow (the arrow points to the lower dark vessel) with preserved arterial blood flow. [B] Contrast-enhanced CT demonstrating displacement of the spleen to the anterior-horizontal position, patchy enhancements of the parenchyma, and the “whirl sign” of the splenic pedicle diagnostic of splenic torsion (arrow). [C] The enlarged spleen twisted around its pedicle without ligamentous attachments. [D] Histological picture of the spleen illustrating preserved white pulp (short arrow) embedded within the red pulp with patent sinuses and large congested blood vessel on the right with laminated thrombus (long arrow). Hematoxylin and eosin x 40.
notable for organizing thrombi within large blood vessels [Figure D]. The patient was discharged with appropriate post-splenectomy treatment.

**COMMENT**

Wandering spleen is rarely diagnosed clinically due to its rare occurrence (< 0.2%). It has a female predominance [3] and the pathogenesis is believed to be failure of development or elongation of the splenic ligaments, causing a mobile spleen. It may be due to congenital anomalies such as incomplete fusion of the dorsal mesogastrium, acquired conditions such as splenomegaly [4], or abdominal trauma. A transient or permanent torsion of the spleen is the major complication of a wandering spleen. The clinical presentation varies from asymptomatic intermittent pain and discomfort to acute abdominal crisis. Non-specific abdominal signs and symptoms (nausea, emesis, etc.) may also occur [4]. The major complications related to splenic torsion are splenomegaly due to venous stasis and congestion, and splenic vein thrombosis culminating in impaired arterial supply leading to splenic infarction and necrosis. Laboratory tests are usually non-specific but may reveal elevated inflammatory markers and evidence of hypersplenism or functional asplenia [4].

Since a clinical diagnosis may be difficult, a definitive diagnosis is reached by imaging modalities such as Doppler sonography and enhanced CT. Surgical treatment includes splenectomy and splenopexy. Splenopexy, which preserves the spleen and avoids the risk of overwhelming post-splenectomy sepsis, may be considered in a viable wandering spleen without torsion complication. On the other hand, splenectomy is advocated if there is functional asplenia due to torsion, splenic infarction, splenic vessel thrombosis or secondary hypersplenism [5]. Our patient’s history together with the clinical and pathological findings can serve as a reminder that the entity of wandering spleen should be suspected in unusual cases of recurrent unsppecific abdominal pain. A high index of suspicion, prompt diagnostic workup and surgery are the key points for a favorable surgical outcome.

**References**


**Capsule**

**Intensive care units in private rooms is associated with a reduction in infection rate**

Teltzsch compared the rates of patient-acquired infections before and after a change from multibed rooms to single, private rooms (intervention hospital). As a control, they also used data from patients who were admitted to a similar multibed facility at a second university hospital (comparison hospital). The authors compared infection rates for a total of 19,343 intensive care unit (ICU) admissions at both hospitals between 2000 and 2005. After converting the multibed ICU to a series of private rooms, the acquisition rate of infectious organisms changed as follows: methicillin-resistant *Staphylococcus aureus* (MRSA) decreased by 47%, the rate of *Clostridium difficile* acquisition decreased by 43% and yeast acquisition decreased by 51%. Additionally, the adjusted rate of acquisition of *C difficile*, vancomycin-resistant *Enterococcus* species (VRE), and MRSA combined decreased by 54% following the transition from multibed rooms to private rooms. Additionally, the adjusted average length of stay in the ICU fell by an estimated 10% after changing to private rooms.

**Arch Intern Med 2011; 171 (1): 32**

Eitan Israeli

“It is neither good nor bad, but thinking makes it so” (from Hamlet)

William Shakespeare (1564-1616), English poet and playwright, widely regarded as the greatest writer in the English language and the world’s pre-eminent dramatist. His plays have been translated into every major living language and are performed more often than those of any other playwright.

“No fathers or mothers think their own children ugly; and this self-deceit is yet stronger with respect to the offspring of the mind”

Miguel de Cervantes (1547-1616), Spanish novelist, poet and playwright. His magnum opus *Don Quixote*, often considered the first modern novel, is a classic of Western literature, and one of the best works of fiction ever written.