Torsion of a Wandering Spleen Presenting as a Case of Acute Abdomen

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INTRODUCTION

Wandering spleen is a rare clinical entity characterized by anomalous position of the spleen in the abdomen due to impaired splenic ligamentous attachments that produce an elongation of the vascular pedicle, favouring a possible volvulus of partial or complete vascular axis. Wandering spleen was first described in autopsies by Johannes Van Horne in 1667. Wandering spleen mainly presents as an asymptomatic mass or seldomly presents as recurrent abdominal pain or acute abdomen. The absence of splenic parenchyma in the left upper quadrant and ectopic location of the spleen can be shown by USG, CT and MRI. The procedure of choice in the treatment of wandering spleen is splenopexy. Here we present a case of torsion in a wandering spleen in a 32 years old female.

Wandering spleen is a rare clinical entity characterized by anomalous position of the spleen in the abdomen due to impaired splenic ligamentous attachments that produce an elongation of the vascular pedicle, favouring a possible volvulus of partial or complete vascular axis.¹ Its aetiology is not clear. Congenital factors exist such as an alteration in the development of the dorsal mesogastrium² and acquired factors such as hormonal changes during pregnancy,³ abdominal wall weakness, splenomegaly. Clinical presentation is variable, from asymptomatic to chronic abdominal pain or acute abdomen. The most common complication is acute torsion of the splenic pedicle causing acute abdominal pain.

PRESENTATION OF CASE

A 32-year-old woman was admitted in gynaecology department as a case of ovarian cyst. She was referred to us for acute onset severe abdominal pain. Her general physical examination revealed severe anaemia, tachycardia and tender distended abdomen with palpable lump in hypogastrium and left iliac fossa. Laboratory test revealed Hb 5.6gm/dl, leucocytosis 17,000/ml. C- reactive protein somewhat elevated 8.64mg/dl.

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CLINICAL DIAGNOSIS

Acute abdomen with suspected ruptured ovarian cyst and hemoperitoneum.

DIFFERENTIAL DIAGNOSIS

Her abdominal sonography reported a 16 x 10 x 17.2 cm swelling in the pelvis suggestive of an ovarian cyst. Considering it as a case of hemoperitoneum/ ruptured ovarian cyst, she was planned for urgent exploration in view of her deteriorating condition.

PATHOLOGICAL DISCUSSION

Emergency laparotomy was performed under general anaesthesia through midline incision. On opening the abdomen, peritoneal cavity was filled with fresh and clotted blood. To our surprise huge spleen was found lying free in pelvis, with a tear on its anterolateral surface, with active bleeding. There were no splenic ligaments and splenic pedicle was twisted leading to splenic congestion and focal areas of necrosis. The excised spleen weighed 1560 grams and with one complete twist of the pedicle. (Fig. 1 and Fig. 2)

Figure 1. Spleen with pedicle after splenectomy

Figure 2. Dorsal view of spleen after splenectomy

FINAL DIAGNOSIS

Histopathology revealed splenic artery and vein were occluded by recent thrombus formation and microscopic examination showed haemorrhagic infarctions.

DISCUSSION OF MANAGEMENT

Wandering spleen was first described in autopsies by Johannes Van Horne in 1667,⁴ whereas splenic torsion of wandering spleen was first described in German literature in 1885.⁵

Spleen is held in its normal anatomical location in left subphrenic space by two important structures namely gastrosplenic and splenorenal ligaments.⁶ The gastrosplenic ligament is attached to the greater curvature of the stomach and the ventral portion of the spleen. The splenorenal ligament contains splenic hilar vascular structures and anchors the spleen to the posterior peritoneal wall. Fixation of the spleen in the upper abdomen is supported by the phrenocolic ligament.^{7,8,9} During foetal development, the failure of fusion of the dorsal peritoneum and the dorsal part of gastric mesentery leads to the development of a long splenic pedicle.^{7,9} Wandering spleen may also be seen in conditions causing looseness of the connective tissue. These conditions include splenomegaly, trauma, severe abdominal wall laxation due to multiparity, severe muscular atrophy and previous abdominal surgeries.^{7,10} Pregnancy or hormonal factors have also been suggested as conditions causing laxity of abdominal wall.¹¹ In the literature we find that wandering spleen is found in at least 0.25% of splenectomies performed.

The symptoms of wandering spleen vary depending on the size and location of the spleen. The growth of the spleen is usually related to torsion of splenic veins, and sometimes due to an infarct resulting from a clot formation within the spleen.¹² Wandering spleen mainly presents as an asymptomatic mass or seldomly presents as recurrent abdominal pain or acute abdomen.¹³ Additional clinical signs seen are fever, leucocytosis, peritonitis and palpable mass in the lower abdomen or pelvis. Depending on the torsion, abdominal pain can be seen as acute, subacute, or chronic forms. When acute torsion occurs, it should be differentiated from ovarian torsion or other acute abdominal diseases.⁸ Associated life-threatening complications are infarction due to arterial occlusion, gangrene, abscess formation, local peritonitis, functional asplenicism and venous thrombosis. In addition, intestinal obstruction, gastric and colonic volvulus, pancreatic tail necrosis, pancreatitis and gastric variceal bleeding are also reported in the literature.^{7,8,12}

Laboratory findings are nonspecific and diagnosis is mainly confirmed by imaging methods.¹⁴ The absence of splenic parenchyma in the left upper quadrant and ectopic location of the spleen can be shown by USG, CT and MRI. Colour Doppler can be used to demonstrate absence of blood flow in the hilum and splenic parenchyma in cases of splenic torsion. Angiography is important in detecting splenic torsion. Scintigraphy is important in the evaluation of splenic function, and it may reveal the lack of accumulation of radionuclides due to torsion or normal uptake in the abnormally localized spleen.¹⁵

In women, a pelvic wandering spleen may be misdiagnosed as an adnexal mass, as occurred in our patient. Sonographic findings of a wandering spleen are nonspecific, and may be handicapped by bowel gas or body habitus in some patients. Currently, the procedure of choice in the treatment of wandering spleen is splenopexy.¹⁶ Splenectomy is reserved for patients with acute torsion of the splenic pedicle presenting with necrosis or splenic infarction, hypersplenism, severe bleeding from oesophageal varices.

CONCLUSIONS

Diagnosis of wandering spleen is often challenging and sonographic findings are often misleading. A pelvic spleen can present in various ways to the clinicians with acute or chronic symptoms. Pelvic spleen should be considered in the differential diagnosis of pelvic mass.

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