CASE REPORT

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Acute abdominal pain due to wandering spleen torsion: A case report

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ABSTRACT

Wandering spleen is a rare condition. This condition is due to absence, laxity or underdevelopment of splenorenal, gastrosplenic and splenocolic ligaments that hold the spleen in its normal localisation. Clinic presentation may be asymptomatic or may be painful abdominal mass, intermittent abdominal pain or acute abdomen. In this report, a thirty-five year old female patient with torsion of a wandering spleen was presented with clinical and radiological findings.

Key Words: Wandering spleen, Torsion, Acute abdomen

Introduction

A wandering spleen is a rare condition that can cause spleen torsion. The main structures that provide the normal anatomic site stabilization of the spleen are splenorenal, gastrosplenic and splenocolic ligaments (1). The wandering spleen is the result of congenital maldevelopment, laxity or absence of these ligaments. Spleen torsion is a rare cause of acute abdominal pain that leads to splenic infarction (2,3). In this case, we aimed to present the spleen torsion at a mid-aged woman, and the role of ultrasonography (US) and computerized tomography (CT) in diagnosis.

Case Report

A thirty-five-year-old woman was admitted to the emergency department with complaints of swelling and severe abdominal pain experienced for about two days. On physical examination, a sensitive palpable mass extending from the left upper quadrant to the right inferolateral side of the umbilicus was detected. Sonographic examination revealed that the spleen displaced towards inferomedial and the size of the spleen increased significantly. Doppler US examination showed no vascularity within the splenic parenchyma. Splenic vein was tortuous and thrombosis was observed in its lumen. There was dense free fluid in the abdominal cavity. In para-synthesis performed under ultrasound guidance, the fluid with haemorrhagic feature has been aspirated. The spleen size was 25x20x9.5 cm in CT and it has been observed as significantly larger than normal. It has been observed that the spleen had displaced towards the inferomedial, and the hilar region had displaced to the superior. Colon and jejunal intestinal loops were observed in the left upper quadrant of the abdomen. In portal phase contrast-enhanced CT, the spleen was monitored as non-perfused (Figure 1). The splenic vascular peduncle was seen to rotate around itself several times (Figure 2). The findings were evaluated as splenic torsion and associated infarct. In addition, bilateral main branches of the portal vein were in a near total thrombosis state (Figure 2). There was no portal vascular thrombosis at the level of liver hilus and confluence. The patient underwent laparotomy and splenectomy. During operation, it was seen that the splenic vascular peduncle had been rotated 1440 degrees around itself. The splenic vein was longer than normal and in a thrombosis state.

Discussion

Wandering spleen and resulting spleen torsion is a rare entity that can lead to an acute abdomen. Gastrosplenic and splenorenal ligaments are the most important ligaments that hold the spleen in the left subphrenic area, which is the normal anatomic location for the spleen (1). The gastrosplenic ligament binds the curvatura major of the stomach to the ventral part of the spleen. Splenorenal ligament includes hilar vascular structures and fixes the spleen to the posterior abdominal wall. The phrenicocolic ligament helps

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Fig. 1. Contrast enhanced abdominal CT in axial view; contrast enhancement in the splenic parenchyma is not observed in the portal phase. It is also seen that the splenic vascular peduncle rotates around itself several times (whirl sign)

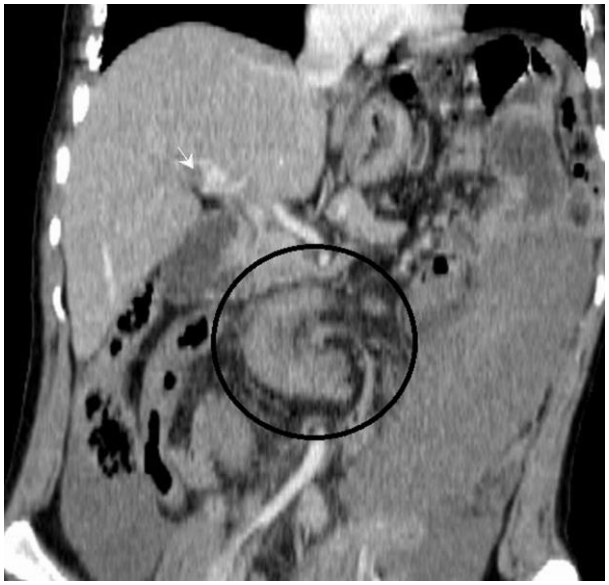

Fig. 2. Coronal reformate contrast enhanced CT; In the main branches of the bilateral portal vein, near-total thrombosis is seen (arrow). In addition, the splenic vascular peduncle appears to rotate several times around itself (whirl sign)

to fix the spleen in the left upper quadrant of the abdomen (2,3). Inadequate development and/or laxity of the spleen ligaments leads to hypermobility, ectopic spleen, and later torsion (4,5). Ligament laxity leads to incomplete fusion of dorsal mesogastrium with peritoneum, development of long vascular peduncle covering the left kidney and hypermobility (6). In our case, it is seen during operation that the splenic vein has been significantly longer than the normal, and in a state of thrombosis. Especially in adult women, ligament laxity, splenomegaly, trauma and hormonal effects of pregnancy can cause spleen torsion (7). Although the true incidence of the spleen torsion is not clearly known, it is seen frequently in women aged 20-40 years (8,9). The patient in our case was a 35-year-old woman who had given birth two months ago. In one study, 0,3% cause of the 1413 splenectomy cases were reported as spleen torsion (10). Symptoms vary according to the degree of the torsion (90-2160 degrees). Pain is usually caused by stretching of the spleen capsule and local peritonitis (7). In the case of vascular congestion, mild abdominal pain occurs. Secondary infarct and acute abdomen develop on torsion of splenic vascular peduncle. When acute torsion occurs, differential diagnosis should be made for the other acute abdomen. During the physical examination, it is usually presented as a mass lesion (6). The patient in our case was admitted to the emergency department due to severe abdominal pain. During the physical examination, sensitive palpable mass had been evaluated as a lesion.

Wandering spleen may appear as a large mass in the abdomen on a plain abdominal radiography. Also, a spleen shadow is not viewed in the left upper quadrant (8). During ultrasonography, splenomegaly, ectopic position and heterogeneity in parenchyma are detected. Vascular flow reduces or cannot be monitored at Colour Doppler Ultrasonography due to the peduncular torsion (9). A spleen enlarged in size and in an ectopic position is observed on the contrast-enhanced CT. The splenic parenchyma undergoes little or no contrast enhancement (6). The "whirl sign" in contrast-enhanced CT is a valuable finding in terms of vascular peduncle rotated around itself (4).

A wandering spleen is a rare condition that can cause acute abdomen. Contrast-enhanced CT and US provide valuable information in the diagnosis. The existence of torsion at the splenic hilus and parenchyma can be shown on the Doppler US by decoding of vascular flow. Scintigraphy is helpful particularly in assessing splenic functions. In the presence of torsion, there is no involvement of radionuclide in the spleen parenchyma; but normal radionuclide involvement may occur in the spleen with no torsion development, in the ectopic location. With ultrasonography and CT, it can easily be shown that the spleen is absent from the left upper quadrant of the abdomen and is

ectopic. The US is a useful method for diagnosing a wandering spleen, but the presence of intestinal gases in the splenic lodge may reduce US sensitivity. This can be overcomed with CT that better visualises anatomical details and can assess spleen perfusion (9-11). Splenopexy is the preferred treatment if the wandering spleen has not entered in a torsion yet. However, splenectomy should be performed if the torsion has been formed and an infarct has occurred in the spleen parenchyma (3-12). In our patient, a circulatory disturbance and parenchymal infarct due to torsion in the splenic vascular peduncle had occurred, and splenectomy treatment was applied.

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