Torsion of an Accessory Spleen; Diagnosed Preoperatively and Excised Laparoscopically

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We report on a case of torsion of an accessory spleen occurring in a 19-year-old female. She was admitted with a three-day history of left-upper quadrant pain that became slowly aggravated. On physical examination, left-side abdominal tenderness was observed, most markedly in the left upper quadrant, but no rebound tenderness was noted. Contrast-enhanced computed tomography (CT) scan showed a non-enhancing mass with a tubular vascular pedicle and normal enhancing spleen in the left upper abdomen. Doppler ultrasound showed no vascular flow within the hypoechoic mass in the

left upper abdomen. Torsion of an accessory spleen was suspected, and emergent laparoscopic exploration was performed. Laparoscopic exploration showed a large rounded violet mass with a twisted vascular pedicle, located anterior to the normal spleen. The mass was excised laparoscopically and then removed through a 2.5 cm extended incision of the left-sided trocar incision. Postoperative recovery was normal and she was discharged on the fifth postoperative day.

Key words: Accessory spleen, Torsion, Laparoscopic excision

INTRODUCTION

Accessory spleen is not uncommon and usually asymptomatic, but it can produce symptoms in condition with its complication. Torsion of an accessory spleen is a rare clinical entity. Even with the recent advances of the radiologic imaging modalities, making the preoperative diagnosis of it is difficult and most cases are diagnosed at the time of laparotomy.

We present here a case of torsion of an accessory spleen that diagnosed preoperatively and removed laparoscopically.

CASE REPORT

A 19-year-old woman presented to the emergency room of our hospital with a 3-day history of left-upper quadrant pain that slowly aggravated and expanded to left-lower quadrant. She had visited to the emergency room of another hospital twice during the 3 days prior to transfer to our hospital. She had previously been in good health and her past medical history

was unremarkable. Physical examination revealed left-side abdominal tenderness, most markedly in the left upper quadrant, but no rebound tenderness was noted. The bowel sounds were decreased and no mass was palpated. Her vital signs were blood pressure 120/80 mmHg, pulse rate 82/min, respiration rate 20/min and body temperature 37.7°C. The laboratory findings showed a white blood cell count of 8,800/mm³, hemoglobin 12.7 g/dl, platelets 164,000/mm³, CRP 6.96 mg/dl, PT 14.6 sec (INR 1.43), GOT 55 IU/L, serum Na 134 mEq/L, and serum K 3.3 mEq/L. All the other studies, including the tumor markers, were within the reference limits.

Abdominal radiography showed no abnormalities. The contrast-enhanced computed tomography (CT) scan showed a non-enhancing mass with tubular vascular pedicle and normal enhancing spleen in the left upper abdomen (Fig. 1, 2). Doppler ultrasound showed no vascular flow within the hypoechoic mass in the left upper abdomen (Fig. 3).

We performed emergent laparoscopic exploration under impression of torsion of an accessory spleen. Laparoscopic exploration showed a large, rounded violet mass with a twisted vascular pedicle, located anterior to the normal spleen (Fig. 4). De-torsion of the twisted pedicle was done easily and cutted with Endo-GIA (CovidienTM, Mansfield, Massachusetts). The mass was put into an endo-bag (Eraesi Co., Ltd., Seoul, Korea), and then removed through 2.5 cm extended incision of the left-sided trocar incision. The postoperative period was uneventful and the patient was discharged on the 5th postoperative day. Pathologic examination of the removed accessory spleen

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Fig. 1. Axial abdomen CT scan shows a non-enhancing mass (M) with tubular vascular pedicle (arrowhead) in the left upper abdomen and normal enhancing spleen (arrows).

Fig. 2. Coronal reformatted image of abdomen CT scan show a non-enhancing mass (M) and normal enhancing spleen (S) in the left upper abdomen.

showed acute hemorrhagic infarction.

DISCUSSION

Accessory spleen is characterized by ectopic splenic tissue separated from the main body of the spleen. It is not uncommon and has been found as an incidental finding in 10% of autopsy series and in 33% of patients with hematologic diseases.¹ Embryologically, it results from the failure of fusion of the mesenchymal buds in the dorsal mesogastrium during the 5th week of fetal life.² Because the spleen is formed in the dorsal mesogastrium and then rotates to the left side, accessory spleens are always situated on the left side of the abdomen. The most common site of an accessory spleen is the splenic hilum and the lesser common sites are the pancreatic tail, gastrosplenic and splenocolic ligaments, and gastocolic ligament, but it can be seen anywhere in the abdomen even in the mediastinum and scrotum.³

Usually, an accessory spleen is asymptomatic, but it can produce symptoms in condition with its complication such as tor-

Fig. 3. Doppler ultrasound shows no vascular flow within the hypoechoic mass (M) in the left upper abdomen.

Fig. 4. Laparoscopic exploration showed a large, rounded violet mass with a twisted vascular pedicle, located anterior to the normal spleen.

sion and infarction, rupture with bleeding, and infection with abscess. Torsion of an accessory spleen is rare but cause an symptom, varied from vague abdominal pain in the case with its intermittent torsion to fever, vomiting and severe abdominal pain in the case with resultant infarction.⁴

Torsion of an accessory spleen is a rare clinical entity. It occurs at any age, but more than half of the reported cases occurred at children.⁵ Even with the recent advances of the radiologic imaging modalities, making the preoperative diagnosis of torsion of an accessory spleen is difficult and most cases are diagnosed at the time of surgery.⁴⁻⁷ However, computed tomography (CT) and ultrasonography are useful diagnostic modalities and some findings of CT and ultrasonography can help clinicians diagnose this disease preoperatively when they have a suspicion of this disease, as in our case.

The radiologic examinations are usually helpful to do diagnosis. Abdominal plain radiographs may demonstrate a soft tissue mass depending on the size of the lesion. In our case, the accessory spleen was small and there was no mass shadow in the left abdomen. The ultrasonographic findings are reported as a hypoechoic well-encapsulated oval mass in the left upper quadrant,⁵ a hypoechoic mass behind the stomach,⁸ a hypoechoic mass with central hyperechoic areas⁹ and a nodular solid mass below the splenic hilum and adjacent to the left kidney.¹⁰ In our case, a well-delineated solid mass with echo matrix similar to that of the normal spleen was defined adjacent to the normal spleen. Doppler ultrasound can be used to evaluate the degree of vascularization of an abdominal mass. In our case there was no vascular flow within the solid mass and the twisted vascular pedicle as compared with the normal vascular flows within the normal spleen during Doppler ultrasound. CT findings of accessory spleen tend to show the same pattern of contrast enhancement as does the normal spleen itself. Twisted accessory spleen on CT scan shows decreased perfusion and hypodense lesions in the splenic parenchyma, which findings are similar to classical pattern reported in the diffuse splenic infarcts. The torsion of vascular pedicle produces an accessory spleen infarction which shows considerably lower attenuation compared with normal spleen or liver on CT scan. When the masses with these CT characteristics are found in the abdomen, the differential diagnosis between mesenteric or omental cysts, intestinal duplication, pancreatic pseudocyst and abscess should be considered. In our case, the twisted vascular pedicle and much hypodense mass as compared with normal spleen could be identified on CT scan. Combination of these CT findings

and ultrasound findings could do correct diagnosis preoperatively.

Torsion of an accessory spleen should be considered in the differential diagnosis when a patient presenting acute or sub-acute abdomen has an avascular intraperitoneal mass on CT or ultrasonography, especially in the emergency setting. Although this disease entity is very rare, awareness and having a suspicion of this disease enables clinicians to diagnose preoperatively and avoid an unnecessary open laparotomy. Laparoscopic surgery has some advantages of cosmesis, postoperative pain, and complication over conventional open surgery. Torsion of an accessory spleen can be removed laparoscopically without any difficulty, so laparoscopic approach is useful treatment of this disease, as in our case.

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