CASE REPORT

Spontaneous rupture of a dissection of the left ovarian artery

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Abstract : A 53-year-old female was suddenly hospitalized with acute left lateral abdominal pain. There was no history of trauma to the abdomen. She had received no abdominal operation. X-ray showed a soft tissue shadow in the left flank which displaced the bowel shadows medially. Plain abdominal CT showed a left retroperitoneal hematoma. Dynamic abdominal CT showed an outflow of medium from a blood vessel in the hematoma. At laparotomy, the source of bleeding was found to be the left ovarian artery. The ovarian artery was dilated and meandered remarkably. The ovarian artery and vein were ligated proximally and left adenectomy was performed. The patient made an uneventful recovery. Histological examination suggested a spontaneous rupture of a dissection of the left ovarian artery.
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Keywords : *spontaneous, rupture, dissection, ovarian, artery*

INTRODUCTION

A spontaneous rupture of the visceral arteries is rare, and only ten cases involving an ovarian artery have been reported in the literature. Nine of these cases occurred either late in pregnancy or in the puerperium. The other case occurred 9 years after tubal ligation. Seven cases involved a spontaneous rupture of an aneurysm of the ovarian artery. In one case, an arteriovenous fistula of the ovarian artery ruptured spontaneously. The other two cases were not examined in detail. We describe a case of spontaneous rupture of a dissection of the left ovarian artery.

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CASE REPORT

A 53-year-old female was rushed to our hospital by ambulance, at 15 : 30 on July 18th, 2001, on account of acute left lateral abdominal pain. While sitting in a chair in her office, and suddenly experienced left lateral abdominal pain and lost consciousness. She had been in good health, and there was no history of trauma to the abdomen. Although advised to undergo a cesarean section due to perineal varix at 27 years of age, she had achieved a natural delivery. She had received no abdominal operation.

On admission, she was distressed with severe left lateral abdominal pain and tenderness. Her blood pressure was 80/40mmHg , pulse rate 98/min, and temperature 35.1Ž. A hematological examination showed anemia with a red blood cell count of 298×104 cells/mm^3, hemoglobin 9.3 g/dl, hematocrit 26.8% and a white blood cell count of 13700 cells/mm^3. The other hematological examinations showed no significant findings. X-ray revealed a soft tissue shadow in the left flank which displaced the bowel shadows medially. Plain abdominal CT (15 : 42) showed a left retroperitoneal hematoma (12×5×4

cm) from around the kidney to pelvic region (Fig 1). Dynamic abdominal CT (16 : 04) showed an outflow of medium from a blood vessel in the hematoma (Fig 2). A diagnosis of a retroperitoneal hematoma of a rupture of an unknown artery was made.

At laparotomy (16:25) a huge retoperitoneal hematoma (600g) occupying the whole of the left lower abdomen was present displacing the descending colon anteriorly and medially. After the hematoma was removed, the source of bleeding was found to be the left ovarian artery. The ovarian artery was dilated and meandered remarkably (Fig 3). The rest of the abdominal organs were normal and the right ovarian vessels also appeared to be normal. The ovarian artery and vein were ligated proximally and a left adenectomy was performed. The patient made

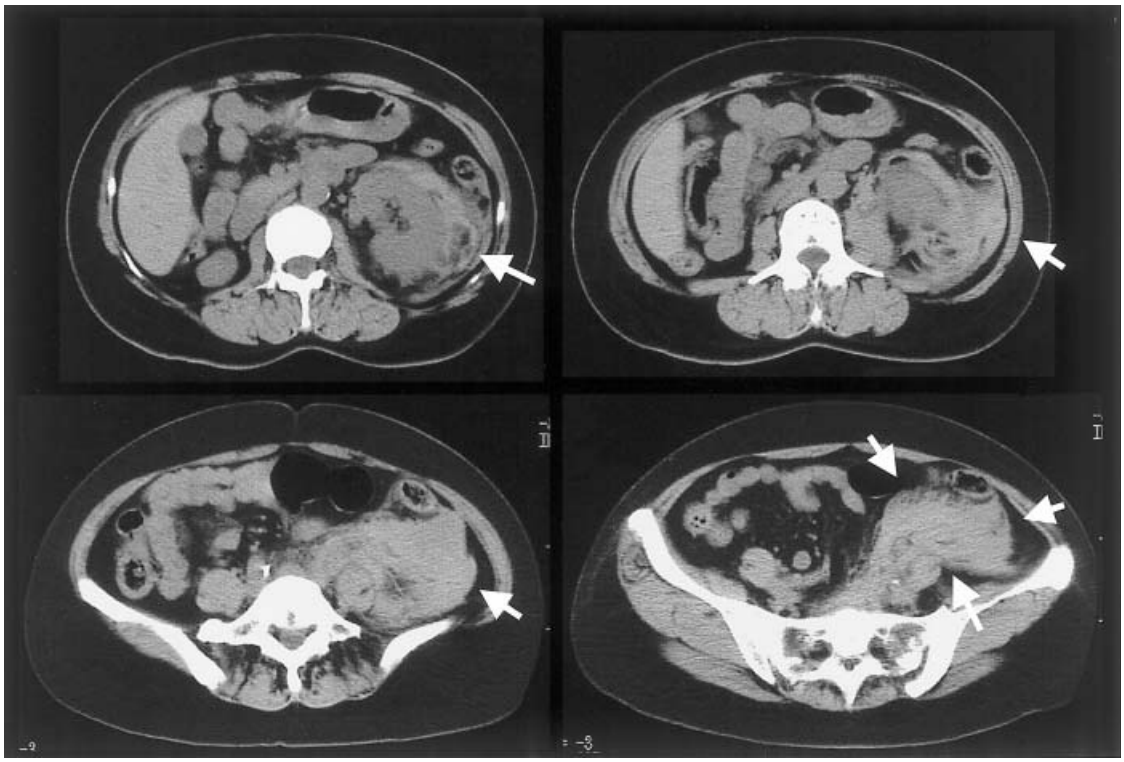

Fig 1 Plain abdominal CT showed a left retroperitoneal hematoma (12×5×4 cm) from around the kidney to pelvic region

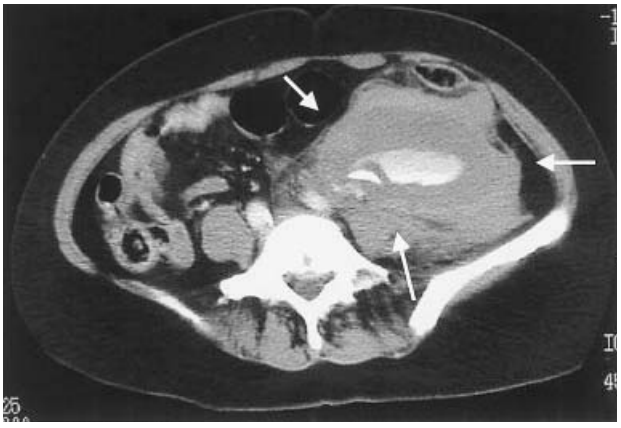

Fig 2 Dynamic abdominal CT showed an outflow of medium from a blood vessel in the hematoma

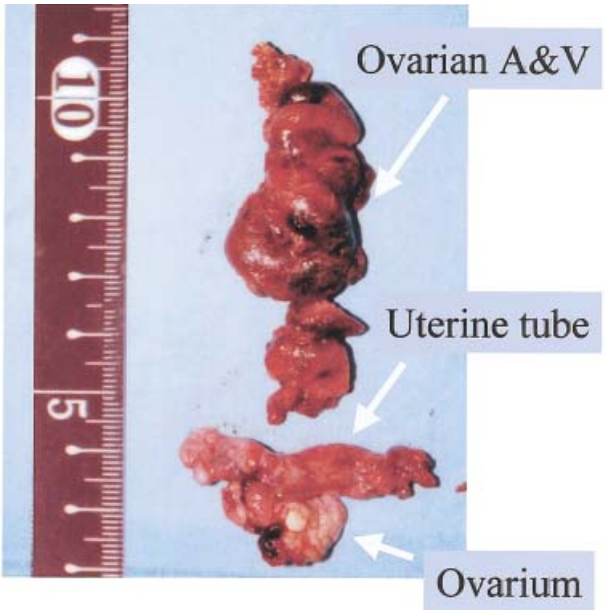

Fig 3 The specimen was from the ovarian artery which was dilated, meandered remarkably and ruptured

an uneventful recovery.

Histological findings : The left ovarian artery and its branches, and several veins were detected histologically in the hematoma in the fibrofatty tissue. The artery was winding and tortuous, and dissection of the outer layer of the media of arterial wall was observed. Direct contact between the dissecting cavity filled with blood coagula and the native lumen of the artery existed. The dissection reached the wall of branches of the artery. Entry and re-entry sites of the arterial dissection were not clear. The dissection of the arterial wall was nearly circumferential in some parts and the native lumen of the artery and dissecting cavity formed double tubes of blood (Fig 4). The site of rupture was recognized (Fig 5). The veins were winding and had the plexus formation.

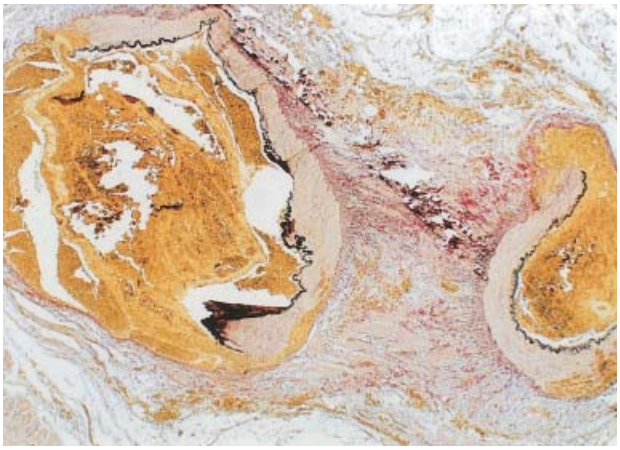

Fig 4 Dissection of the left ovarian artery in the outer layer of its media and direct communication between the native lumen and the dissecting cavity of the artery. (EvG stain, 1×)

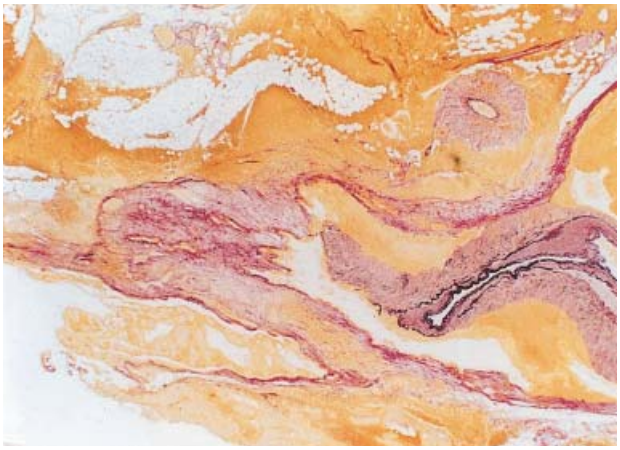

Fig 5 Site of rupture of the wall of the left ovarian artery. (EvG stain, 1×)

DISCUSSION

Most reported cases of a spontaneous rupture of visceral arteries have occurred either in late pregnancy or in the puerperium. Moore suggested that this might be related to changes in the connective tissue of the vessel wall induced by the hormonal changes of pregnancy (1). The recorded sites of rupture, in order of frequency are : aorta, splenic arteries, renal arteries and iliac arteries (2).

King described that ruptured aneurysms of the ovarian artery are exceedingly rare and occurred in the early postpartum period (3). A a review of the literature revealed ten cases of a spontaneous rupture of the ovarian artery (3-12). Almost all occurred either late in pregnancy or in the puerperium. Siu reported one case which occurred 9 years after tubal ligation (10). The case involved an arteriovenous fistula of the ovarian artery which ruptured spontaneously. Siu suggested that the tubal ligation 9 years earlier was causally related to the formation of the fistula. Seven cases involved a spontaneous rupture of aneurysm of the ovarian artery (3-9). The other two cases were not examined in detail. Our patient had previously been in good health, and there was no history of trauma to the abdomen. She had received no abdominal operation and was not pregnant. Guillem described a case involving a spontaneous retroperitoneal hematoma caused by the rupture of an aneurysm of the right ovarian artery 4 days after delivery and treated nonoperatively by embolization (4).

But we selected laparotomy because we suspected a rupture of a sigmoid artery and were afraid of infection. Hitological examination suggested a spontaneous rupture of a dissection of the left ovarian artery. This case is the first report to my knowledge of the spontaneous rupture of a dissection of the left ovarian artery treated as a surgical emergency.

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