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Assem Mohamed Herzallah
Matarya Teaching Hospital, assemhel.zolo@hotmail.com

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Case Report

Ruptured inferior mesenteric artery aneurysm: a case report

Assem Mohamed Herzallah
Cosultant Vascular Surgery, Vascular Surgery Department, Matarya Teaching Hospital, Cairo, Egypt

Abstract

Among visceral artery aneurysms, inferior mesenteric artery aneurysm is the rarest. Although most cases are of degenerative etiology, a small fraction of these cases are caused by autoimmune diseases. We report a case of spontaneous retroperitoneal hemorrhage from a ruptured inferior mesenteric artery aneurysm in a 30-year-old patient with systemic lupus erythematosus, treated by ligation.

Keywords: MSC, MRCS, MD

Introduction

Visceral arteries are rarely affected by aneurysms, with an incidence in the general population ranging from 0.1 to 2% [1]. The inferior mesenteric artery is the least common among them to be affected [2]. We present a case of inferior mesenteric artery aneurysm associated with systemic lupus erythematosus, which is the first of its kind, as no cases as such were found in the literature.

Case presentation

A 30-year-old female patient was admitted to the Nephrology Department with arthralgia, rising serum creatinine, and falling urine output. She had recently complained of appearance of malar rash and oral ulcers; her erythrocyte sedimentation rate and C-reactive protein were elevated, antinuclear antibody was positive, and rheumatoid factor was negative.

On physical examination, all peripheral pulsations were felt, and the abdomen showed no palpable mass. Ultrasonography revealed bilateral calyceal small kidney stones (right: 8 mm, left: 2.5 mm) and right ovarian cyst (4.4 cm × 4.3 cm).

Complete blood count showed hemoglobin of 7.5 g/dl; her serum creatinine level was 2.27 mg/dl, and urea level was 101 mg/dl. Her urine analysis showed granular and hyaline casts, and pus cells and red blood cells were 10–12 and 30–35/HPF, respectively. Protein in 24-h urine collection was 790 mg/500 ml. The patient was started on intravenous corticosteroids, diuretics, folic acid, and aspirin.

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On the night of the third day after admission, the patient complained of abdominal pain of acute onset, followed by gradual abdominal distension. Examination revealed pallor, tachycardia (180 b/m), hypotension (70/40 mmHg), and acute abdomen. Hemoglobin concentration dropped to 3.9 g/dl.

Fluid resuscitation and blood transfusion were started, and an emergency computed tomographic scan was done and revealed large retroperitoneal hematoma, more on the left side, surrounding the left kidney and displacing it anteriorly and medially (Fig. 1).

The patient underwent midline laparotomy with a transperitoneal approach; the retroperitoneum was explored starting from the aorta, as the source of bleeding was not clear at this point, although the left renal artery was suspected. The aorta, the superior mesenteric, and both renal arteries were intact with no abnormality. On exploring the inferior mesenteric artery, it showed two saccular aneurysms, both approximately 1 cm in diameter, with the proximal one (approximately 4 cm from the origin) being intact, whereas the distal one (approximately 7 cm from the origin) being ruptured (Fig. 2).

At this point, the patient had received a massive blood transfusion (6 U of packed red blood cells in 2 h), and manifestations of coagulopathy started to appear; the decision was made to control the bleeding with no revascularization.

Correspondence to: Assem Mohamed Herzallah, MSC MRCS MD, Matarya Teaching Hospital, Egypt, Tel: +20 100 171 4960. E-mail: assemhel-zolo@hotmail.com

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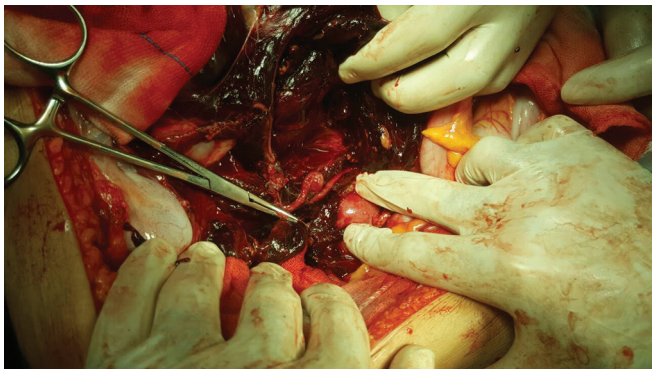

Figure 1: Retroperitoneal hematoma (yellow arrows) displacing the left kidney (white arrow).

The artery was ligated in place proximal to the first aneurysm, and distal to the second one. The abdomen was closed en mass.

The postoperative course was uneventful. Symptoms and signs of intestinal ischemia were sought, but fortunately never appeared.

Discussion

Visceral arteries are rarely affected by aneurysms, but when they do, they can be fatal. Aneurysms of the inferior mesenteric artery are usually asymptomatic, discovered on ultrasonography or computed tomography scans of the abdomen, which explains the increasing incidence of those cases in the past few decades when these diagnostic modalities have become increasingly available (Tables 1 and 2).

Visceral artery aneurysm associated with systemic lupus erythematosus is very rare. Gastrointestinal involvement affects approximately 30% of patients with systemic lupus erythematosus. Anorexia, nausea, vomiting, and abdominal pain are common gastrointestinal manifestations of systemic lupus erythematosus. Vascular changes in these patients include thrombosis, vasculitis, and intimal or mural thickening and present with symptoms and signs of intestinal ischemia rather than hemorrhage [3].

Most reported cases of inferior mesenteric artery aneurysms are localized in the proximal trunk of inferior mesenteric artery, and close to half a cases are asymptomatic, whereas the other half present with a pulsatile abdominal mass, abdominal pain, low back pain, or like our case, hemorrhagic shock [4].

It is recommended to treat visceral artery aneurysms electively once discovered, even if asymptomatic, as this confers much lower morbidity and mortality. Recently endovascular intervention has become an option in treating these aneurysms. However, many of these aneurysms remain technically challenging and unsuitable for this option [5].

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Figure 2: Inferior mesenteric artery, with the aneurysm (arrow).

Table 1: The incidence of visceral artery aneurysm [3]

Artery aneurysm	Incidence (% of total)
Splenic artery	60
Hepatic artery	20
Superior mesenteric artery	6
Celiac artery	4
Jejunal, ileal, colic arteries	4
Pancreaticoduodenal artery	2
Gastroduodenal artery	2
Inferior mesenteric artery	<1

Table 2: Etiology of visceral artery aneurysms [3]

Degenerative
Vasculitis
Trauma
Pancreatitis
Pregnancy (splenic artery aneurysms)
Fibromuscular dysplasia, segmental mediolytic arteriopathy
Atherosclerosis
Infection (SMA and hepatic artery aneurysms)
Iatrogenic: surgery, percutaneous or transarterial catheterization
Liver disease, portal hypertension or splenomegaly (splenic artery aneurysms)
Polyarteritis nodosa; systemic lupus erythematosus; Ehler-Danlos syndrome; neurofibromatosis; Behcet's disease
Poststenotic (pancreaticoduodenal aneurysms duo to celiac axis or SMA stenosis)

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Conflicts of interest

There are no conflicts of interest.

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