Rupture of the common iliac artery aneurysm presenting with abdominal pain and fever

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Abstract:

The common iliac artery aneurysms are rare and usually present in patients with abdominal aortic aneurysms. They are most commonly asymptomatic and the clinical symptoms are non-specific, including abdominal pain, genitourinary symptoms, back pain and sciatica. The rupture usually causes haemodynamic instability and carries a high mortality rate. We describe an elderly patient presenting with abdominal pain and fever who had a pulsating mass in the lower right quadrant of the abdomen, diagnosed via point-of-care ultrasound. The definite diagnosis was made with computed tomography and the patient was urgently transferred to the surgery department.

Keywords:

Iliac Aneurysm; Aneurysm, Ruptured; Abdominal Pain

Sažetak:

Ruptura aneurizme zajedničke ilijačne arterije koja se manifestira bolovima u trbuhu i groznicom

Aneurizme zajedničke ilijačne arterije su rijetke i obično prisutne u bolesnika s aneurizmom abdominalne aorte. Najčešće su asimptomatski, a klinički simptomi su nespecifični, uključujući bolove u trbuhu, genitourinarne simptome, bolove u leđima i išijas. Ruptura obično uzrokuje hemodinamsku nestabilnost i nosi visoku stopu smrtnosti. Opisujemo starijeg bolesnika s bolovima u trbuhu i povišenom temperaturom koji je imao pulsirajuću masu u donjem desnom kvadrantu abdomena, dijagnosticirano ultrazvukom u liječenju. Konačna dijagnoza je postavljena kompjutoriziranom tomografijom i pacijent je hitno prebačen na odjel kirurgije.

Ključne riječi:

aneurizma ilijaka; Aneurizma, puknuta; Bol u trbuhu

Introduction

The common iliac artery aneurysms (CIAAs) most commonly occur in association with abdominal aortic aneurysms (AAAs) and isolated CIAAs are rare (1,2). Rupture of common iliac artery aneurysms usually presents with haemodynamic instability and various non-specific symptoms such as abdominal pain, genitourinary symptoms, back pain, or sciatica. It can be accompanied by elevated markers of inflammation which is caused by haematoma formation, but the growth of the aneurysm itself also elevates the markers of inflammation (3). We describe an elderly patient with retained rupture of the right common iliac artery which presented as abdominal pain with fever and laboratory signs of inflammation.

Case report

A 73-year-old man presented to the Emergency Department with malaise, abdominal pain, and fever up to 38.5 °C lasting several days. Two weeks prior to this visit, he was discharged from the haematology department where he had been hospitalized due to deep vein thrombosis and pulmonary embolism. During the hospital stay, he developed a fever with pathological urine sediment, and therefore an empiric antibiotic therapy with amoxicillin and clavulanic acid was introduced. After the discharge, he still had difficulty breathing but denied chest pain, syncope, and dysuria. His previous medical history included arterial hypertension, colon diverticulosis, benign prostate hyperplasia, varicose veins on both legs, and lumbosacral syndrome In his chronic medical therapy he was using warfarin, perindopril, amlodipine, and indapamide. Upon physical examination he was hemodynamically stable, subfebrile (37.7 °C), had pain in the lower right quadrant, without peritoneal guarding, and kidney percussion was positive on the right side. His chest and abdominal X-ray films were unremarkable. The laboratory tests showed leukocytosis 12 x 10^9/L, haemoglobin 113 g/L, C- reactive protein 108 mg/L, INR 1.86, urine leukocytes 3+ and nitrites 1+. Possible differential diagnoses in this patient included ureteric colic, pyelonephritis, diverticulitis, abdominal aortic aneurysm (AAA), and aortic dissection. Point-of-Care Ultrasound (POCUS) of the abdomen showed a pulsating mass in the right lower abdomen with a maximal diameter of 60 mm and an intramural thrombus. (Fig. 1.) The computed tomography (CT) scan was additionally performed to further differentiate the mass. The result showed a retained right common iliac artery rupture. The abdominal aorta was normally calibrated. (Fig. 2.) The on-call vascular surgeon was consulted and the patient was transferred to the surgery department for further treatment.

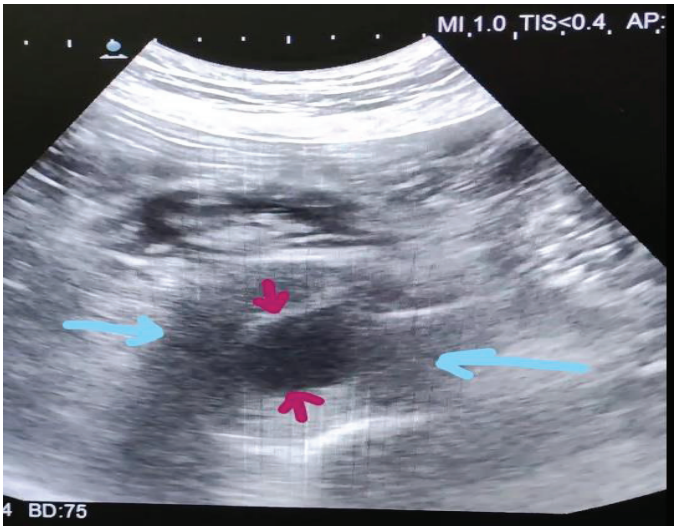

Figure 1. Point-of-Care Ultrasound showing a mass in patient's right lower abdominal quadrant with a maximal diameter of 60 mm and an intramural thrombus.

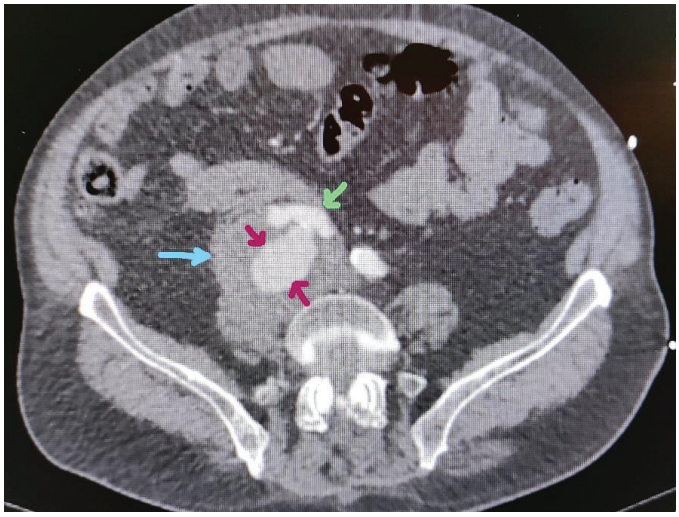

Figure 2. The computed tomography (CT) showing a retained right common iliac artery rupture.

Discussion

Isolated aneurysms of the common iliac artery are rare, accounting for 1% of intraabdominal aneurysms. The majority of them are coexisting with abdominal aortic aneurysms (1,2) and the frequency of rupture of isolated iliac artery aneurysms is significantly higher than that of abdominal aortic aneurysms (4). According to Huang et al, CIAAs are mostly asymptomatic, in 71% of patients. The suspicion of an aneurysmal disease is greatly based on the previous risk factors and clinical signs. The most common symptom is abdominal pain (2). Other symptoms are genitourinary symptoms, back pain, and sciatica. The mechanism of pain includes the extension of haematoma and compression of nerves and other anatomic structures. Their rupture usually presents with haemodynamic instability and has a high mortality rate. The retained rupture which was present in our case did not present with such a dramatic clinical picture. Elevation of inflammation markers was very misleading in this case and in combinations with the previous history, highly suggestive of infection. Tambyraja et al concluded that the patients with symptomatic and ruptured AAA had significantly higher CRP and leukocyte levels compared to asymptomatic patients (5). This would have raised a concern of rupture if our patient had previously been diagnosed with an aneurysm. The diagnosis of the CIAA can be made by various radiological techniques and there are currently no studies to compare sensitivity and specificity between them. CT can give us precise information about the extent of aneurysmal disease, vascular anatomy, and localization of the rupture which is particularly important for patients who are candidates for endovascular repair. The advantage of the POCUS is its suitability for haemodinamically unstable patients since prolongation of hypotensive time negatively impacts the survival rate. Reed et all showed that patients who underwent ultrasonography upon presenting to the emergency department with ruptured AAA compared to those who did not, were diagnosed faster (51 vs 111 minutes)(6). The POCUS can therefore decrease the time needed to diagnose the patient and direct further management. It is an exceptionally valuable tool in the hands of experienced emergency physicians, sometimes revealing unexpected diagnoses.

Acknowledgments

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