Anatolian Journal of Emergency Medicine 2022;5(3):145-148

CASE REPORT / OLGU SUNUMU

An Unusual Presentation of Ruptured Abdominal Aortic Aneurysm: A Case Report

Rüptüre Abdominal Aort Anevrizmasının Olağandışı Bir Başvurusu: Olgu Sunumu

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ABSTRACT

Aim: Ruptured abdominal aortic aneurysm (AAA) is among the surgical emergencies with highest mortality, generally causes death in 90% of cases. Most AAA ruptures open into the retroperitoneal space, and are recognized by the classical triad of pain, hypotension, and a pulsatile mass. Unfortunately, only 25% to 50% of patients present with this triad; thus, many patients with ruptured AAA either remain undiagnosed or are falsely diagnosed with other diseases.

Case: A 75-year-old man presented to the emergency department (ED) with sudden-onset dyspnea, nausea, and left pelvic pain. Imaging studies revealed aneurysmal dilation of abdominal aorta, inferior to the origin of the renal artery, and intraabdominal free fluid. The patient was consulted with the department of cardiovascular surgery and urgently taken to operating room with the preliminary diagnosis of an AAA rupture.

Conclusion: Our report presents an unusually rare presentation of a life-threatening disorder. Early diagnosis, referral to vascular surgery, and possible open or endovascular repair are key to limiting AAA-related morbidity and mortality.

Keywords: Abdominal aorta aneurysm, retroperitoneal hematoma, mortality

ÖZ

Amaç: Rüptüre abdominal aort anevrizması (AAA) mortalitesi en yüksek cerrahi aciller arasındadır ve vakaların %90'ında ölüme neden olur. Çoğu AAA rüptürü retroperitoneal boşluğa açılır ve klasik bulguları olan ağrı, hipotansiyon ve pulsatil kitle üçlüsü ile tanınır. Ne yazık ki, hastaların sadece %25 ile %50'si bu üçlü ile başvurur; bu nedenle, AAA rüptürü olan birçok hasta ya teşhis edilmeden kalır ya da başka hastalıklarla yanlış teşhis konur.

Olgu: 75 yaşında erkek hasta ani başlayan nefes darlığı, bulantı ve sol pelvik ağrı şikayetleri ile acil servise (AS) başvurdu. Görüntüleme yöntemleri, renal arterin çıktığı yerin altında yer alan abdominal aortun anevrizmal dilatasyonunu ve intraabdominal serbest sıvıyı ortaya çıkardı. Hasta kalp damar cerrahisi bölümü ile konsülte edildi ve AAA rüptürü ön tanısı ile acilen ameliyathaneye alındı.

Sonuç: Bu vakamız, yaşamı tehdit eden bir bozukluğun alışılmadık derecede nadir görülen bir presentasyonunu gösteriyor. Erken tanı, vasküler cerrahiye sevk ve olası açık veya endovasküler onarım, AAA ile ilişkili morbidite ve mortaliteyi sınırlamanın temel anahtarıdır.

Anahtar Kelimeler: Abdominal aort anevrizması, retroperitoneal hematom, mortalite

Received: December 31, 2021 Accepted: February 7, 2022

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Atıf için/Cited as: Yılmaz F, Kara F, Uckapi ES. An Unusual Presentation of Ruptured Abdominal Aortic Aneurysm: A Case Report. Anatolian J Emerg Med 2022;5(3):145-148. https://doi.org/10.54996/anatolianjem.1051605

Introduction

Abdominal aortic aneurysm (AAA) refers to an abnormal focal increase in the diameter of the abdominal aorta, which affects a substantial number of patients and is a potentially important cause of significant morbidity and mortality. It is seen in 5–9% of people older than 65 years of age. It more commonly affects males who smoke, as well as those who have a family history of for this condition (1).

While the majority of patients with AAA have no symptoms, they are diagnosed upon the detection of a pulsatile mass by a physician during physical examination, by abdominal imaging studies performed for other indications, or during ultrasonographic screening of AAA (2). The most common symptoms are abdominal, back, or flank pain (3). Symptomatic aneurysms are more likely to rupture and cause a significant rate of death (4).

An AAA is usually diagnosed on the basis of imaging studies, mainly abdominal ultrasonography, which show the presence of an aneurysm. On the other hand, computerized tomography (CT) reveals important information, including the rupture status, expansion rate of an aneurysm in symptomatic patients. It also aid in elucidating the origin of symptoms, that is if they are likely aneurysm-related or caused by other conditions found in the abdominal cavity (2-4).

In this paper, we present a patient with abdominal aortic aneurysm rupture that clinically manifested with sudden-onset dyspnea, nausea, and left pelvic pain.

Case Report

A 75-year-old man presented to the ED with sudden-onset dyspnea, nausea, and left pelvic pain. His past medical history was notable for a previous coronary artery bypass (CABG) surgery, chronic renal failure (CRF), a surgical procedure for left femur fracture 5 months ago and and It was learned that he used antilipid, aspirin and alpha-blockers.

On admission, the patient's general condition was moderately well; he was conscious and oriented. His vital signs were as follows: BP 99/55 mmHg, pulse rate 100 bpm, respiratory rate 22/minute, spo2 97 %, and body temperature 36 C. On physical examination, first and second heart sounds were normal, and no extra sounds or murmurs were heard. He had normal breath sounds over both lung fields, and no rales or ronchi were heard; both hemithoraces equally participated in the respiratory effort. His abdominal examination revealed tenderness in the left lower quadrant and at the left costovertebral angle. He had no abdominal guarding, rebound tenderness, or palpable pulsatile mass. There were bilaterally symmetrical radial and femoral pulses of good volume. The patient had normal findings in the examination of the other systems. laboratory values; BUN 47 mg/dl, kreatinin 2,2 mg/dl, WBC 12200, HB 10,7, HCT 34,6, D Dimer 1116 ug/dl (0-242), High sensitive troponin T 41 ng/L (0-14).

A chest X-Ray was taken to detect possible critical diagnoses as the etiology of dyspnea and hypotension, but no meaningful sign was found. While Abdominal aortic diameter was found to be normal at T12 level in Non-contrast thoracic CT upper abdominal cross-sections, an appearance-irregularity that belong to a hematoma of approximately 35 mm surrounding the peripheral wall calcification of the abdominal aorta was detected below the origin of the renal arteries (Figure 1A, 1B).

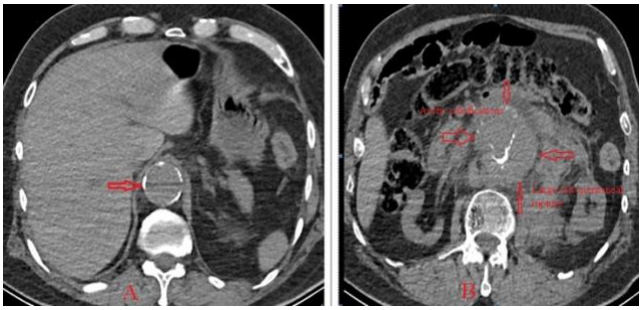

Figure 1A. Abdominal aortic diameter was found to be normal at T12 level in non-contrast thoracic CT upper abdominal cross-sections.

Figure 1B. an appearance-irregularity that may belong to a hematoma of approximately 35 mm surrounding the peripheral wall calcification of the infrarenal abdominal aorta.

As the patient had hypotension and tachycardia on admission, an abdominal CT angiography (CTA) with intravenous contrast was planned to diagnose a possible AAA rupture. Abdominal CTA showed irregularity in the infrarenal abdominal aorta and the appearance of a hemorrhagic collection extending into the left retroperitoneum. In addition, a retroperitoneal hematoma measuring 91x86 mm was detected in the paraaortic region, which was more prominent on the left side and was compatible with active bleeding (Figure 2A, 2B).

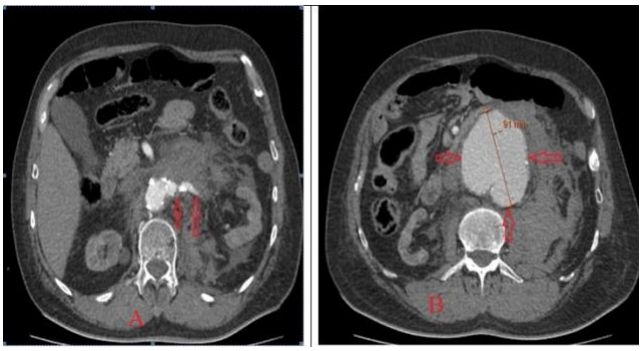

Figure 2A. Abdominal CTA showed irregularity in the infrarenal abdominal aorta and the appearance of a hemorrhagic collection extending into the left retroperitoneum.

Figure 2B. A retroperitoneal hematoma measuring 91x86 mm was detected in the paraaortic region, which was more prominent on the left side and was compatible with active bleeding

Abdominal CTA sagittal image of large AAA rupture and 3D reconstructed CT image of large AAA rupture shown in Figure 3A, 3B. A diagnosis of AAA rupture was made, and the patient was consulted with the department of

cardiovascular surgery and urgently taken to operating room.

Written informed consent was obtained from the patient for publication of this case report.

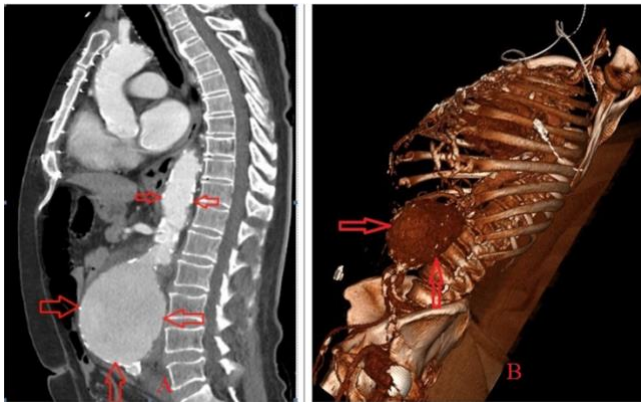

Figure 3A. Abdominal CTA sagittal image of large AAA rupture
Figure 3B. 3D reconstructed CT image of large AAA rupture

Discussion

Abdominal aortic aneurysm is aortic enlargement to a size of equal to or greater than 3 cm (3). Aneurysm formation refers to a segmental, full-thickness dilation process whereby a blood vessel is dilated to a size that is 50% greater than its original size (5). Despite the fact that normal aortic size depends on age, gender, and body size, infrarenal aorta is about 2.0 cm in diameter on average. A diameter that is considered normal is generally less than 3.0 cm; therefore, patients with an infrarenal aorta measuring equal to or greater than 3.0 cm are said to have AAA (3,6). Additionally, the risk of aneurysm rupture is proportional to the maximum transverse diameter of the aorta, with fusiform aneurysms measuring more than 54 mm are an indication for repair in patients without comorbidities (1). In our patient as well, the aortic diameter was found 9 cm in the infrarenal region, and a retroperitoneal hematoma was detected as a result of AAA rupture.

Several factors increasing the likeliness of predisposition to aneurysm development have been defined. These include smoking, male sex, advanced age, atherosclerosis, family history of AAA, other arterial aneurysms (e.g., iliac, femoral, popliteal, intracranial), connective tissue disorder (e.g., Marfan, Ehlers-Danlos, Loeys-Dietz syndromes) or family history, history of aortic dissection, and history of aortic surgery or instrumentation (7,8). Our patient was also a male of advanced age and had risk factors such as history of CRF, CABG, and surgery for femur fracture.

Different sites of rupture present with distinct clinical signs and symptoms. About one-fifth of patients have anterior rupture into the peritoneal space, which usually rapidly leads to profound blood loss and prehospital death. Rupture into abdominal veins or intestinal tissue is a rare occurrence. The majority of ruptures (approximately 80%) open into the retroperitoneal space; although this causes the hallmark triad of symptoms consisting of back pain, hypotension and a pulsatile mass, this triad is observed in only 25–50% of cases (1). Our patient similarly had bleeding into the retroperitoneal space; we believe that he was able to reach ED before he died because the hematoma partially limited itself.

Presence of risk factors and symptoms of AAA should prompt a search for clinical signs that support or refute the diagnosis during physical examination. Symptomatic patients may have normal vital signs or present with sinus tachycardia or hypotension of moderate or severe degree (9). Our patient also had hypotension and mild tachycardia on admission to the ED. We think that these signs were due to retroperitoneal bleeding. In addition, we think that our patient caused a moderate tachycardia response due to the cardiac drugs he used.

Abdominal pain is the most widely encountered sole presenting symptom of AAA; although it is reported by 80% of patients, it is relatively non-specific and also occurs in other abdominal disorders. Although AAA rupture into the retroperitoneal space can be buffered for a few hours, this can be maintained for days in only a few cases. Retroperitoneal hematoma formation and the compressive effects to the neighboring structures can give rise to various signs and symptoms which can misguide clinicians. It has been reported that symptoms resembling lumbar spondylitis, lower limb neuropathy, obstructive jaundice, testicular ecchymosis, or lower extremity edema (10). Likewise, our patient had dyspnea and left pelvic pain. We think that our patient developed dyspnea due to excessive abdominal distension due to AAA and diaphragmatic irritation caused by it. Since the upper abdominal cross-sections of a non-contrast enhanced chest CT study ordered to determine the cause of dyspnea revealed suggestive signs of AAA rupture, an abdominal CTA was taken, which showed a hematoma due to AAA rupture, which extended to the retroperitoneal space.

Conclusion

AAA rupture or symptomatic AAA are serious disorders not commonly encountered by emergency physicians. A rapid response and management of these conditions greatly increase patient outcomes. Advanced imaging techniques should be performed in atypical presentations suggestive of AAA rupture. Our report draws attention to a rare presentation of a disorder that may be potentially and rapidly fatal.

Conflict of Interest: No conflict of interest was declared by the author.

Financial Disclosure: No financial disclosure was declared by the author.

Authors Contribution: All authors contributed equally to the preparation of the article.

Informed Consent Statement: Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review in this journal.

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