

Acute Aortic Dissection Mimicking Acute Appendicitis: Case Report

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Abstract

Acute aortic dissection is rare; but it is one of the fatal aortic diseases. The classic presentation to the emergency department is chest pain, but atypical presentations can be seen. In this article, we present a case of acute aortic dissection mimicking an acute appendicitis clinic and we emphasize that aortic dissection should be considered in the differential diagnosis of hypertensive patients presenting with right lower quadrant pain.

Keywords: Aortic Dissection; Appendicitis; Pain; Emergency

Introduction

Acute aortic dissection is one of the most critical cardiovascular emergencies that requires rapid diagnosis and treatment. Each one-hour delay in diagnosis and treatment causes a 1% increase in mortality [1]. Hypertension is the most common risk factor that develops aortic dissection and it is present in 75% of cases [2]. The patients often suffer from a sharp, sudden onset of chest or back pain. However, they may also have atypical complaints such as syncope, dysphagia, side pain, hemiplegia or hemiparesis [3].

Acute appendicitis is the most common surgical cause in patients reporting to the emergency department with abdominal pain [4]. Although it can be easily diagnosed with physical examination and imaging methods, diseases such as diverticulitis, obstetric pathologies, urinary tract infections, diabetic ketoacidosis or gastroenteritis may apply with complaints similar to acute appendicitis [5]. Therefore, differential diagnosis of acute appendicitis requires attention. In this article, we present a case of aortic dissection who applied to the emergency department with right lower quadrant pain, with low Alvarado score and symptoms which mimicked acute appendicitis. As demonstrated in literature, aortic dissection should come to mind when a patient with hypertension has abdominal pain.

Case Report

A 52-year-old male patient reported to the emergency department with abdominal pain. The patient had no comorbidity in his history and it was learned that his pain had been lasting for 6 hours. The pain was evident especially in the right lower quadrant. When physically examined; the patient was alert and oriented, his general condition was good, blood pressure was measured to be 190/110 mmHg, pulse 80 per minute, respiratory rate 13 per minute, temperature 36.5°C but patient's skin appeared pale. Abdominal examination revealed tenderness in the right lower quadrant, however it revealed no defender or rebound. Alvarado score was calculated to be 4. Respiratory sounds were bilateral normal and there were no sort of pathological sound such as murmur in the heart. Other system examinations were normal. The patient had never been diagnosed with hypertension before. The difference between both arms' blood pressure was found

to be 10 mmHg which was accepted as normal. Electrocardiogram (ECG) test was obtained and interpreted as normal. Arterial blood gas, hemogram, cardiac marker enzymes (troponin T and creatine kinase), coagulation, urinalysis and β -HCG tests were measured. On hemogram; white cell count: $12.000 \times 10^9/L$, and urine analysis; white blood cell was 1, red blood cell was 4. Posteroanterior chest-x-ray, and abdominal x-ray of the patient were taken, and interpreted as normal. In the follow up, ultrasonography (USG), intravenous (iv) contrast-enhanced thorax and abdomen computed tomography (CT) imaging were planned for the patient who had been hemodynamically stable by glyceryl trinitrate infusion therapy. There was no pathology that could explain the clinical status of the patient on USG. On CT, a dissection extending from the arcus aorta to the iliac bifurcation was detected (Figure 1) and the patient was referred to cardiothoracic surgery immediately and underwent an emergent surgical repair.

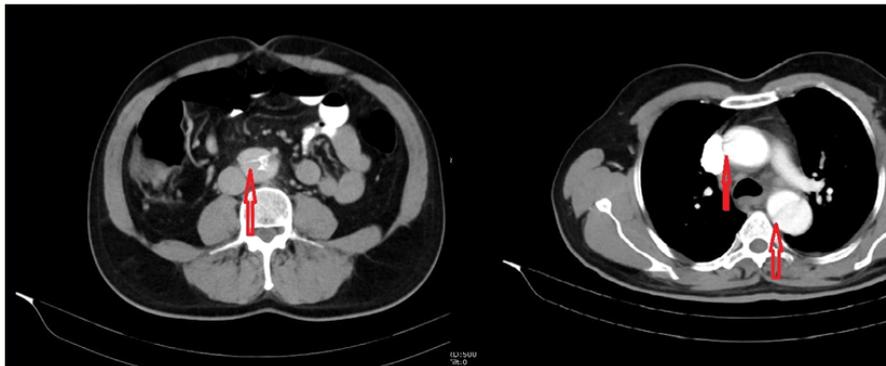


Figure 1: Computed tomography imaging revealing dissection involving the ascending and descending aorta (arrows).

Discussion

Aortic dissection is the most common acute aortic pathology that requires emergent surgery [6]. It is characterized as the accumulation of blood in the media layer of the vessel and occurs as a result of a tear in the aortic intima. The incidence is reported as being 3 cases per 100,000 every year in the studies [7]. There are several predisposing factors in the development of aortic dissection. Hypertension is the most common risk factor and is seen approximately in 75% of patients with aortic dissection [2]. Mainly, uncontrolled hypertension is noteworthy in autopsies of the patients who had lost their lives due to aortic dissection [8]. Other factors contributing to the development of aortic dissection are connective tissue diseases, abuse of drugs such as cocaine and amphetamine, dyslipidemia, due to trauma, tobacco smoking and hereditary vascular diseases [9].

Sudden onset, severe and sharp chest pain in aortic dissection is the most common classic symptom. The most common reason for admission to the emergency department is chest pain with 72% [6]. In addition, back pain, abdominal pain and syncope are other common complaints. In the studies, 90% of the cases describe their pain as the worst pain in their life [6]. Except from the typical presentation, atypical complaints such as hemiparesis, hemiplegia, dysphagia or side pain may also be observed [3,6]. Hdiji, *et al.* presented a case of aortic dissection with painless paraplegia in 2016 [10], Güven., *et al.* reported a case of aortic dissection with a preliminary diagnosis of cerebrovascular event and emphasized aortic dissection cases with atypical complaints [3]. Our case presented with right lower quadrant pain lasting for six hours. Although the patient's clinical presentation was consistent with acute appendicitis, aortic dissection was diagnosed by iv contrast CT. IV contrast CT is fast and non-invasive; therefore, it is the most commonly used imaging method for diagnosing aortic dissection.

Acute abdominal pain constitutes 5% of the applications to emergency services. Although most abdominal pain is benign, 10% of patients have a life-threatening or surgical problem [11]. Acute appendicitis is the most common cause of surgical operation in patients presenting with acute abdominal pain [4]. Differential diagnosis of acute appendicitis includes diverticulitis, ectopic pregnancy, pelvic inflammatory disease, ovarian torsion, nephrolithiasis, pyelonephritis, gastroenteritis and irritable bowel syndrome [5]. As in our patient, aortic dissection may also present with right lower quadrant pain similar to acute appendicitis. Therefore, other diagnoses than acute appendicitis should be considered in patients with right lower quadrant pain with low Alvarado score.

Conclusion

This case report emphasizes the importance of clinical suspicion of aortic dissection. Aortic dissection is a pathology with high mortality rates requiring rapid diagnosis and treatment. Therefore, it is important to identify high-risk patients, to perform a careful physical examination and to use diagnostic imaging methods. The differential diagnosis of aortic dissection should be considered in hypertensive patients presenting with right lower quadrant pain even when the clinic seems to mimic acute appendicitis. As a result of this, aortic dissection mortality rates can be reduced by rapid diagnosis and treatment when a patient is presented with right lower quadrant pain with low Alvarado score.

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