

# Could Mild Symptoms Lead to a Critical Diagnosis? Subtle Symptoms of an Aortic Dissection

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## Abstract

Aortic dissection is among the rare admissions to the emergency department. Although their clinical presentation is well defined, diagnosis is difficult in patients with mild symptoms. Failure to diagnose an aortic dissection can lead to very catastrophic results. We present a case report of aortic dissection, which presented with only epigastric pain as a symptom. Using pain scales and careful follow-up in the emergency department have reached a critical diagnosis.

**Keywords:** Dissection, emergency medicine, pain measurement, aorta

## Introduction

Aortic dissection is defined as separating the layers that make up the aortic wall. Despite advances in diagnosis and treatment methods, the mortality rate is still high [1].

Patients with acute aortic dissection typically present with sudden onset, severe, tearing chest pain [2]. The pain may spread to the neck, jaw, and interscapular region. Syncope, stroke clinic, impaired mental activity, hemoptysis, dysphagia, dyspnea, flank pain, abdominal pain, anxiety, and fear of death may accompany the course of the disease [3]. A very small group of patients present with only mild pain. These mild symptoms could be confused with a symptom of musculoskeletal disorders in the chest, groin, or back [4,5]. Thoracic aortic dissection should be considered in the differential diagnosis of all patients presenting with chest pain.

The diagnosis of acute aortic dissection initially requires a high index of suspicion. In addition to the history and physical examination, data from electrocardiogram (ECG), various laboratory markers (D-dimer, and the organ affected by end-organ damage due to dissection in general), vital signs, and

symptoms related to the area affected by the dissection should be carefully evaluated.

Chest radiography, bedside ultrasonography (USG), contrast-enhanced tomography, magnetic resonance, and aortography can be used for diagnosis [6,7]. Our aim is to emphasize the importance of using USG in the emergency department in case of suspected aortic dissection.

## Case Report

A 52-year-old female patient who had previously only known hypertension and gastritis was admitted to our emergency department with the complaint of abdominal pain. Our patient described the onset of pain 4 hours before she presented to the emergency department. At admission, the patient's blood pressure was 170/95 mmHg, heart rate was 79/min, oxygen saturation was 99%, and body temperature was 36.9 °C. The patient's vital signs were stable except for a high blood pressure. When questioned in detail, she complained about the epigastric region pain as a focal point and stated that the pain did not spread and was stationary. There were no other gastrointestinal system symptoms such as nausea, vomiting, or diarrhea. The

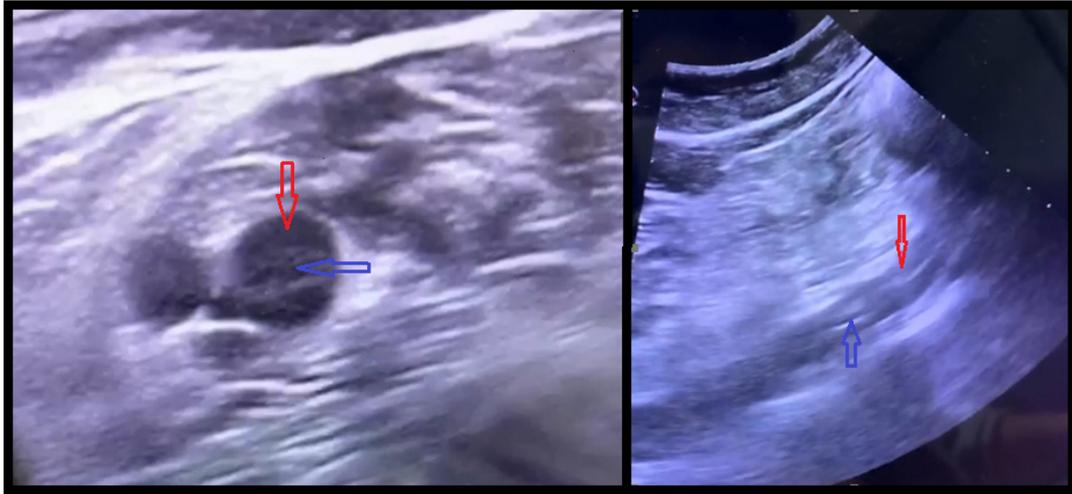


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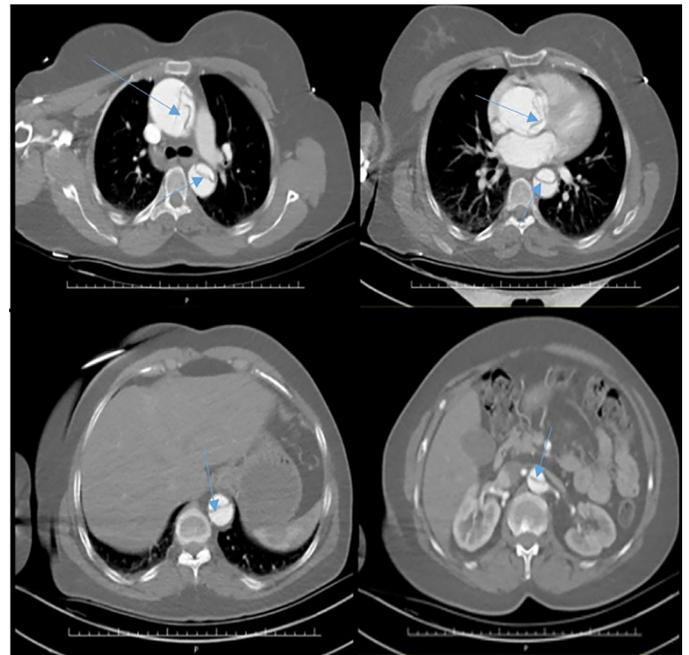


**Figure 1.** Abdominal ultrasound of aortic dissection. We see the longitudinal and transverse section view. Blue arrow marks true lumen, red arrow marks pseudolumen

patient's general appearance was stable, and the patient seemed comfortable. No pathological finding was detected in the physical examinations. An abdominal examination revealed epigastric tenderness. There were no acute abdomen findings. After clinical appearance and physical examination, the differential diagnosis included; peptic ulcer activation, acute coronary syndrome, pancreatitis, mesenteric ischemia, and dissection. An ECG was then taken to exclude some of these diagnoses. As laboratory tests, complete blood count, troponin level, blood gas, urea, creatinine, amylase, and lipase were sent. The ECG findings included a right bundle branch block (which was also present in previous ECGs). Laboratory results were found to be within the reference ranges.

Proton pump inhibitor, antacid, and tramadol treatment were applied to the patients in symptomatic treatment. However, there was no change in the complaints in the follow-up examinations after the symptomatic treatment, and they remained mild. Pain intensity was questioned. Although the patient seemed quite comfortable, the pain rating was 9/10 according to the "visual analog pain scale". The patient emphasized that her pain has always been the same since she applied. The patient's pain was different from that of previous peptic ulcer complaints. Because of the high pain score, critical emergencies were given priority. Blood pressure was rechecked from both arms, and while the patient was still hypertensive, there was no difference between the extremities.

Bedside transthoracic echocardiography was performed to obtain further clues for the diagnosis, such as acute coronary syndrome, mesenteric ischemia, aortic dissection, and pancreatitis. The aortic diameter was 32 mm in measurements made using a cardiac sector probe, and mild pericardial fluid was detected. When the aorta was visualized again from the



**Figure 2.** CT angiography image of type 1 aortic dissection. We see the dissection line in different sections (blue arrow)

CT: Computed tomography

abdomen using a convex probe, the aortic diameter was enlarged and there was a dissection flap (Figure 1). A diagnosis of aortic dissection was made, and computed tomography angiography was performed to clarify the type and size of the dissection. The diagnosis was reported as type 1 aortic dissection (Figure 2).

Treatment was started to lower the blood pressure below 120/90 mmHg. The cardiovascular surgery department was consulted, and an emergent operation decision was made.

## Discussion

As in many other diseases, patients with aortic dissection might admit to emergency departments with different clinical presentations [8]. The location of the pain is important in predicting where the dissection occurs. Anterior chest pain and chest pain mimicking acute myocardial infarction are generally associated with an ascended arch or aortic root dissection. This results from dissection, which cuts off flow to the coronary arteries and results in myocardial ischemia. Pain in the neck or jaw indicates that the dissection has involved the aortic arch and extends into the great vessels. A tear or tear-type pain in the interscapular region may indicate that the dissection has involved the descending aorta. Pain typically changes as the dissection develops.

The pain of aortic dissection is typically distinguished from the pain of acute myocardial infarction by its sudden onset and maximum severity at the onset. However, the presentations of the two conditions overlap to some extent and can be easily confused. Additionally, it can be confused with many different disease groups, depending on the dissection site.

Most physicians do not apply visual analog scales to every patient in daily clinical practice and often simply question if the complaints are regressed [9]. However, obtaining objective scores for pain might lead to critical diagnoses; otherwise, that would be missed, as presented in our case. Therefore, applying objective queries to the patients' complaints might diagnose life-threatening conditions.

Considering all these, dissection should be considered as a differential diagnosis in patients with different clinics who are thought to have simple preliminary diagnoses [10]. Using advanced examination methods to exclude every differential diagnosis in emergency services' chaotic and crowded environments causes a cost burden and creates various risks for patients.

## Conclusion

Obtaining a good history, repeating examinations, and using emergency instruments such as bedside USG are more effective than many other tests in reaching a life-threatening diagnosis. Furthermore, the effective use of pain scales in the emergency

department can be useful in detecting catastrophic conditions, as seen in our case.

## Ethics

**Informed Consent:** Written informed consent was obtained from the patients.

**Peer-review:** Externally peer-reviewed.

## Authorship Contributions

Concept: A.Ö., A.G., F.S., M.Ç., Design: A.Ö., E.Ş., Data Collection or Processing: A.Ö., Analysis or Interpretation: A.G., Literature Search: A.Ö., Writing: A.Ö., E.Ş.

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

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