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Case Report

Aortic Intramural Hematoma Mimicking Acute Coronary Syndrome

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ABSTRACT

Background: Intramural hematoma (IMH), a variant form of classic aortic dissection, has been accepted as an increasingly recognized and potentially fatal entity of acute aortic syndrome (AAS). It is a very dangerous, lethal, and emergency condition.
Objective: We needed to demonstrate the importance of high suspicion for aortic dissection as a possible differential diagnosis in the presence of electrocardiographic myocardial ischemic signs.
Case Illustration: A 52-year-old man patient suffered from chest pain with moderate intensity while he was working at home. It was a sharp, tear-like sensation in the middle of the chest that radiated to the back, accompanied by cold sweating, and did not relieve by rest. Because of this condition, he was brought to the hospital. He had cardiomegaly and aortic dilatation. ST-segment elevation at V1 to V3 and T-wave inversion in V4, V5, V6, I, and aVL were found during admission. We also noticed a slight elevation in cardiac biomarker levels. To exclude acute coronary syndrome (ACS), he had undergone cardiac catheterization. The cardiologist in charge was suspicious of this patient with aortic dissection because of trapping contrast during the procedure and minor coronary disease. For a better diagnosis, trans transthoracic echocardiography and Aortic Computed Tomography angiography were performed on the patient, confirming the dissection evidence.
Conclusion: Complaints of chest pain due to symptoms of the AAS are essential to be recognized immediately because. The chief complaints in this syndrome have similarities with complaints in ACS, pulmonary embolism, and others. The role of advanced imaging modality in confirming the diagnosis is essential in this clinical setting.

1. Introduction

Acute aortic syndrome (AAS) is a life-threatening condition with overlapping pathologies, typical symptom severity, and general risk of rapid death. AAS consists of dissection of the aorta, intramural hematoma (IMH) of the aorta, and penetrating atherosclerotic ulcer. The AAS can be complicated, with various character complaints that are sometimes difficult to distinguish from other diseases. Aortic IMH is an entity in the AAS spectrum in which the hematoma in the tunica media of the aortic wall is absent of intimal tear. The prevalence of this clinical entity is around 10-25% of AAS.[1] In this case report, we needed to demonstrate the importance of high suspicion for aortic dissection as a possible differential diagnosis in the presence of electrocardiographic myocardial ischemic signs.

2. Case Illustration

The patient suffered from sudden chest pain (VAS 8/10) while working. It was a sharp, tear-like sensation in the middle of the chest, radiating to the back, accompanied by cold sweating. Because the chest pain symptom persisted, his family brought him to the hospital. He was diagnosed with a heart attack and got a loading dose of DAPT. Then he suggested referring to PCI Capable Hospital. At the hospital, the chest pain persisted with increased severity (VAS 10/10). There were no signs of Marfan's syndrome in the patient. From the physical examination, the patient was hemodynamically stable. Blood pressure was on the right hand, left hand, right leg, and left foot, SpO2 96% room water. No signs of Corrigan were found. There was a diastolic murmur in the 2nd left intercostal space. No gallops. On lung examination, there were no rhonchi.

The abdomen does not appear pulsatile. There is no hypoperfusion syndrome in the extremities. The results of the cardiac enzyme examination showed that troponin levels increased slightly with no significant changes. ST-segment elevation at V1 to V3 and T-wave inversion in V4, V5, V6, I, and aVL were found during admission (Figure 1). We also noticed a slight elevation in cardiac biomarker levels. On chest X-ray examination, cardiomegaly and mediastinal widening were seen (Figure 2).

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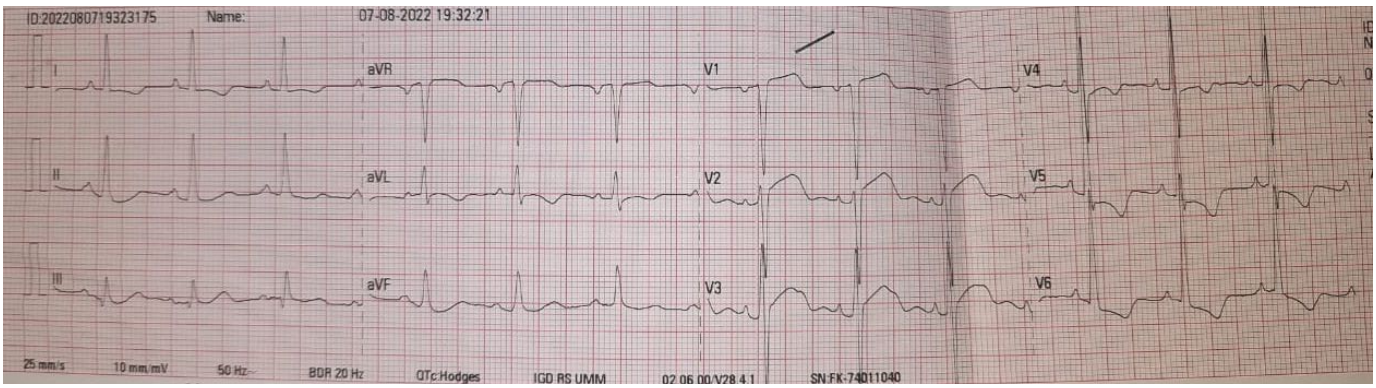

Figure 1. Electrocardiography at Emergency roomprocedure.

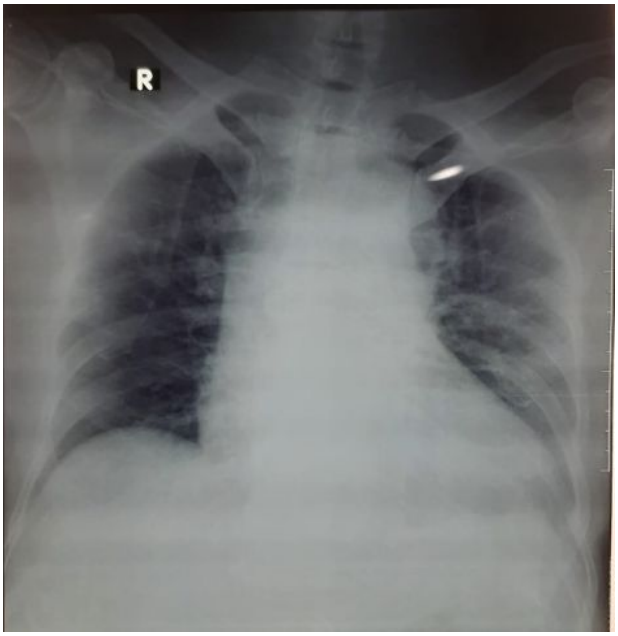

Figure 1. Electrocardiography at Emergency roomprocedure.

Then echocardiography and CT angiography were performed. The aortic dilatation from the ascending to the abdominal aorta is obtained from echocardiography (Figure 3). An intimal flap is visible from the ascending aorta to the abdominal aorta. A mild aortic regurgitation and an average ejection fraction were also obtained. There was aortic dilatation with a diameter of up to 49.5 mm, and an IMH appeared from the aortic root to the infrarenal abdominal aorta (Figure 4). The patient was diagnosed with IMH and referred to Saiful Anwar General Hospital.

3. Discusion

Aortic IMH represents one-third of patients with AAS, the classic type of aortic dissection without an entry tear. Histologically, AIH consists of hemorrhages within the aortic media of varying thickness and elongation. Controversy still exists regarding the origin and physiopathology of intramural aortic hematoma. The hypothesis indicates that it is due to vasa vasorum bleeding.[2,3] The patient experiences sudden chest pain when working Sharp, which feels like tearing, in the middle of the chest radiates to the back, according to the 2015 ESC guidelines. Patients with these complaints are high-risk criteria for an AAS occurrence with a probability of 80%. We must understand these typical symptoms properly because they are at risk with similar symptoms of the acute coronary syndrome (ACS).

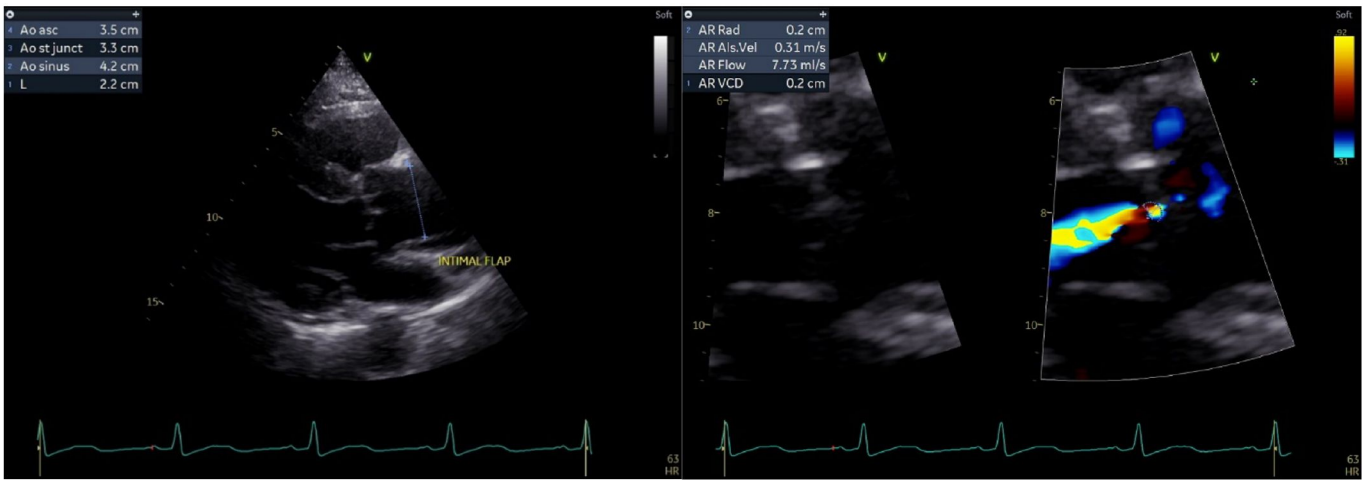

Figure 3. Echocardiography was performed, and an intimal tear was visible in the root of the aorta distal to the valve. There was also seen acute aortic regurgitation in color Doppler.

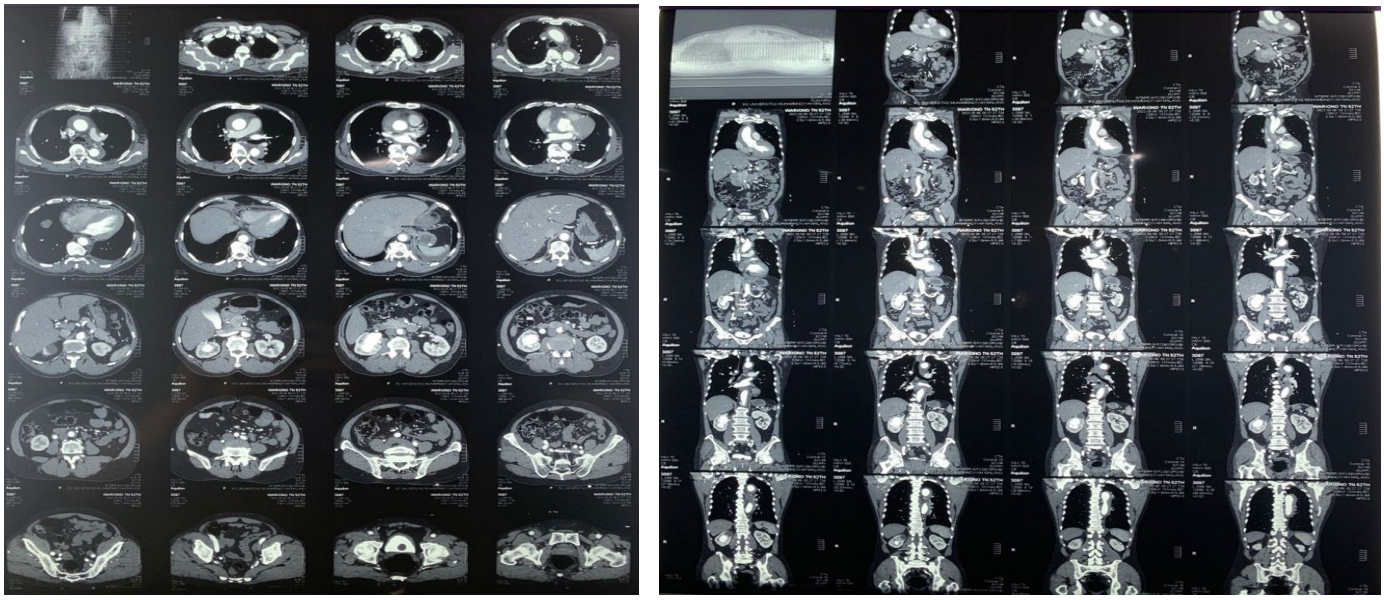

Figure 4. CT angiography intramural hematoma with Stanford A.

The main goal of medical therapy in patients with IMH is to reduce shear stress in diseased aortic segments by controlling blood pressure and heart rate and administering treatment to control pain. The blood pressure target must be achieved between 100-120 mmHg, while the heart rate is 60 bpm. To manage this can be given a choice of therapy in the form of beta-blockers, angiotensin-converting enzyme (ACE) inhibitors, and angiotensin II receptor blockers can reduce either the development of aortic dilation or the occurrence of complications. The use of statins is also improved in abdominal aortic aneurysm repair.4 In patients with Stanford A IMH, Surgery is the primary option for these patients. The use of a combination of surgery and endovascular is currently one of the best options. In patients with complications, urgent surgery is indicated in less than 24 hours.[4,5]

4. Conslusions

Complaints of chest pain due to symptoms of the AAS are essential to be recognized immediately because. The chief complaints in this syndrome have similarities with complaints in ACS, pulmonary embolism, and others. The role of advanced imaging modality in confirming the diagnosis is essential in this clinical setting. Stanford A intramural aortic hematoma. The most appropriate management is a surgical technique. Initial blood pressure control, heart rate, and anti-pain management can be given.

5. Declarations

5.1. Ethics Approval and Consent to participate
This study was approved by local Institutional Review Board, and all participants have provided written informed consent prior to involvement in the study.

5.2. Consent for publication
Not applicable.

5.3. Availability of data and materials
Data used in our study were presented in the main text.

5.4. Competing interests
Not applicable.

5.5. Funding source
Not applicable.

5.6. Authors contributions
Idea/concept: ZF, NK. Design: ZF, NK. Control/supervision: NK, DS, HM. Literature search: ZF, NK. Data extraction: ZF, NK. Statistical analysis: ZF, NK. Results interpretation: ZF, NK. Critical review/discussion: ZF, NK, DS, HM. Writing the article: ZF, NK. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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