

Acute Type A Aortic Dissection with the Presentation of Right Shoulder Pain

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Abstract Introduction: Although aortic dissection is not common but its outcome is frequently fatal, and many patients with aortic dissection die before getting to the hospital or any diagnostic testing. The symptoms of aortic dissection can be similar myocardial ischemia, and physical findings in the physical examination of aortic dissection may be absent. **Case presentation:** A 59 years old male referred to our hospital with right shoulder pain from 3 days before for evaluation of acute coronary syndrome. He had a history of Coronary artery bypass grafting 3 years before and hypertension from 20 years before. On presentation to our hospital he had stable vital signs. In electrocardiography he had T inversion in leads I, avL and v4-v6 which were new changes with respect to his previous electrocardiography. On physical examination he had an early to mid-diastolic murmur in the right sternal border. On transthoracic echocardiography suspicious flap of dissection was seen in the ascending aorta and CT angiography was done for the patient which confirmed the diagnosis. **Discussion:** In the case presented a catastrophic condition with high mortality has been presented to our hospital with an unusual symptom of the disease and further evaluation with regards to our physical examination has led us to find the diagnosis and have prompt treatment for the patient. **Conclusion:** It is of great importance to have great clinical suspicion for aortic dissection in patients referring to the hospital with predisposing factors.

Keywords: aortic dissection, unusual symptom, right shoulder pain

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1. Introduction

The incidence of aortic dissection is about 5 to 30 cases per million people in each year and it depends on the prevalence of different risk factors in the studied population. Although the disease is not common, its outcome is frequently fatal, and many patients with aortic dissection die before reaching to the hospital or any diagnostic testing. While pain is the most common symptom of aortic dissection, more than 30 percent of the patients may develop different symptoms related to the involvement of other organ systems [1]. The symptoms of aortic dissection can be similar to myocardial ischemia, and physical findings in the physical examination of aortic dissection may not be present or, if present, could be suggestive of a wide range of other conditions. So having a high clinical suspicion is important in establishing the diagnosis of aortic dissection. In 30% of the cases the diagnosis of aortic dissection has been missed on first evaluation after presentation and in about 25% of the patients the diagnosis has been made in post mortem examination [1,2,3].

2. Case Presentation

A 59 years old male referred to our hospital with right shoulder pain from 3 days before for evaluation of acute coronary syndrome. He had a history of Coronary artery bypass grafting 3 years before and hypertension from 20 years before. He was smoking 20 packs year cigarettes. He had nausea as an accompanying symptom. His pain was with gradual increase and continuous in these 3 days.

On presentation to our hospital he had stable vital signs. His systolic blood pressure was 130 mmHg and his diastolic blood pressure was 80 mmHg in his right arm and 135 mmHg and 80 mmHg in his left arm respectively. His pulse rate was 75 beats per minute and his respiratory rate was 12 per minute. He did not have fever. On physical examination he had an early to mid-diastolic murmur in the right sternal border. In electrocardiography (Figure 1) he had T inversion in leads I, avL and v4-v6 which were new changes with respect to his previous electrocardiography. He had negative cardiac markers and was admitted with the impression of unstable angina.

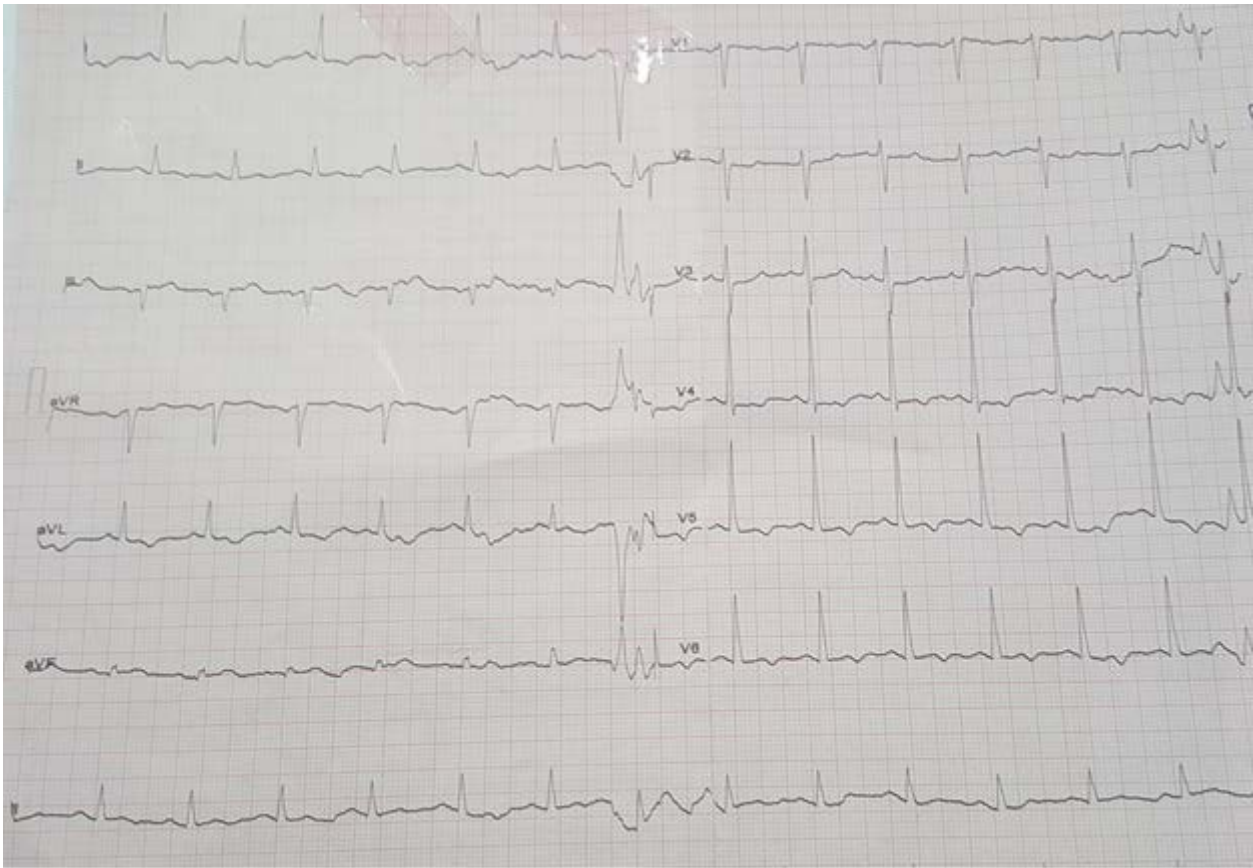


Figure 1. Electrocardiography showing T inversion in leads I, avL and v4-v6

In his chest x ray (Figure 2) he had increased cardiothoracic ratio and prominent knob of aorta and increased mediastinal size which could be due to dilated ascending aorta.

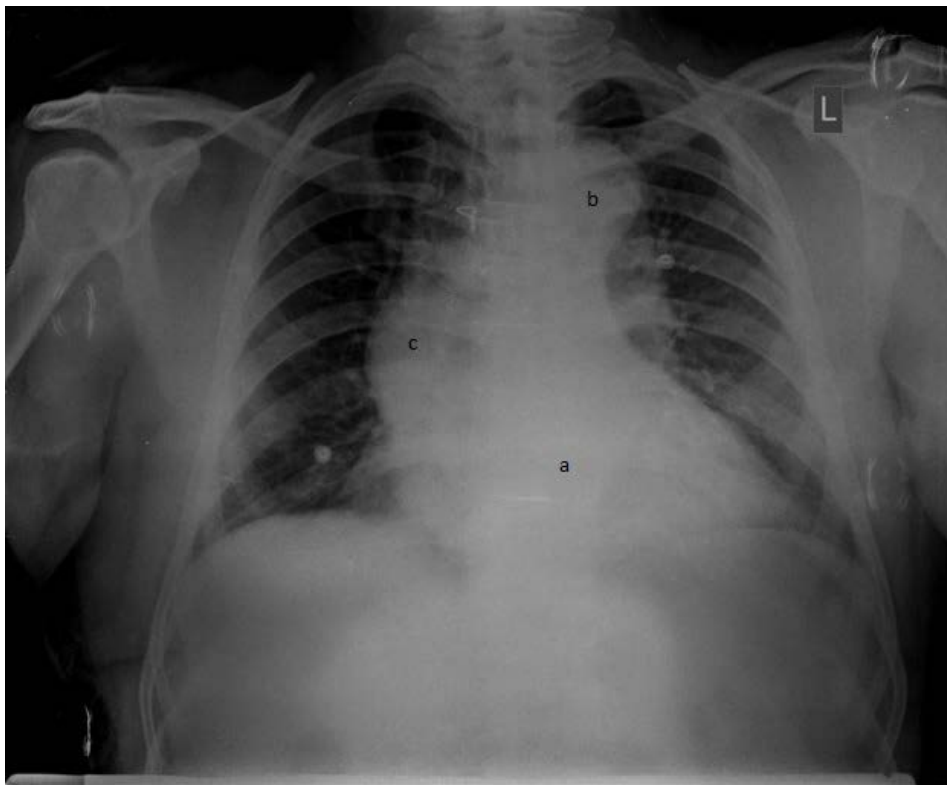


Figure 2. Chest x ray showing increased cardiothoracic ratio (a) and prominent knob of aorta (b) and dilated ascending aorta (c)

On transthoracic echocardiography suspicious flap of dissection was seen in the dilated ascending aorta (7.2 cm) and the patient had moderate aortic regurgitation. As the patient had stable vital signs, CT angiography (Figure 3)

was done for the patient which confirmed the diagnosis of type A aortic dissection above right coronary sinus which extended to the abdominal aorta just above the superior

mesenteric artery. His pulse rate and blood pressure was controlled with B blockers and surgical consult was done for the patient.

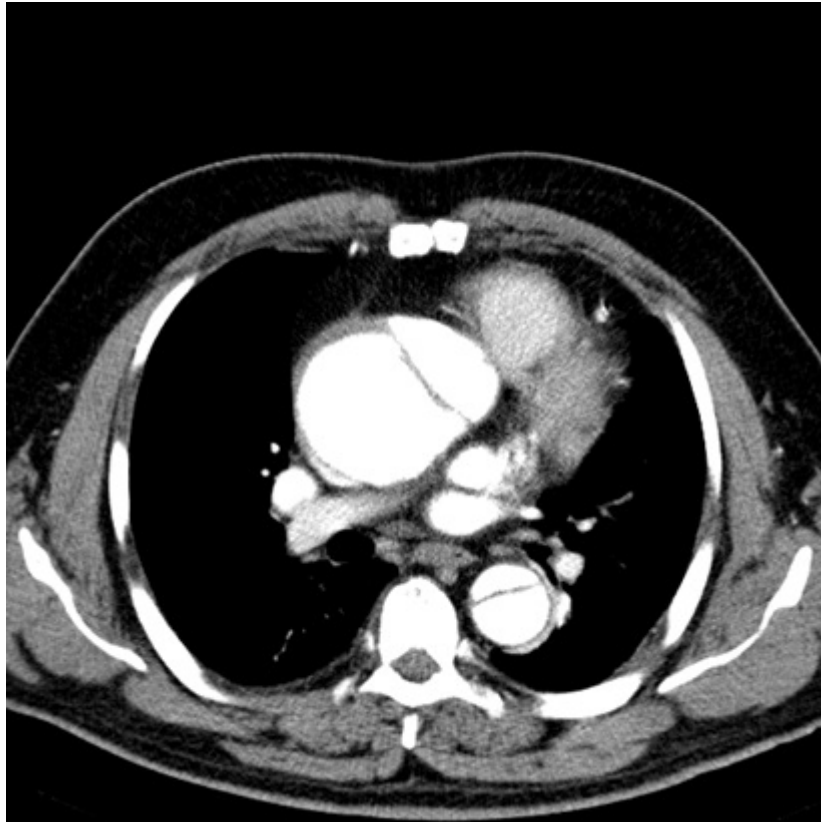


Figure 3. Dilated ascending aorta and dissected flap in both ascending and descending aorta

The patient was candidate of aortic valve repair and aortic dissection surgery and dacron grafting. Aortic valve repair and Dacron grafting of the aortic arch was done for the patient at the same day.

He was discharged in good medical condition after 5 days. On follow up examination after 6 months he was doing well without any complication.

3. Discussion

About 25 percent of the patients with aortic dissections die before being admitted in the hospital. The mortality rate of patients with untreated proximal aortic dissections increases by one to three percent per hour after presentation and is approximately one fourth during the first 24 h after the initial presentation [4,5]. Less than 10 percent of the patients left untreated with proximal aortic dissections live for 1 year, and almost all of the patients die within 10 years after presentation [6]. Most of these deaths occur within 3 months after presentation [6].

Pain is the common symptom that most patients show on presentation of aortic dissection. The pain experienced in aortic dissection is in midline and is often sensed in the back and front of the trunk, which depends on the location of the dissection [1].

The onset of pain is typically catastrophic, and it reaches a maximum level abruptly. The pain could be tearing, sharp, knife like or sharp in nature, but the suddenness is the most specific characteristic of the pain [1]. The radiation of pain to the shoulder neck or arm is

not common which may be common and typical in acute coronary syndrome.

In the different studies done, chest was the most common site where pain was experienced and back the second most site while, abdominal pain which was experienced by about 30% of the patients was the third site. Ascending aorta and arch dissections usually cause anterior chest wall pain in patients, whereas descending aorta dissections cause posterior chest, abdominal and back pain. Extension of the pain to the legs and hips have been reported which indicates that the dissection has affected the distal parts.

According to a study the physicians have the most suspicion for aortic dissection in patients referred with both back and chest pain, followed by less suspicion in those with chest pain alone and the least suspicion in patients referred with abdominal pain. The abruptness and sharpness of the pain lead to a higher suspicion for aortic dissection [7].

In our case the patient suffered from right shoulder pain from 3 days before which was continuous and with a gradual increase. The type of pain described is actually not specific for aortic dissection and could mislead the physician into other diagnosis. So it is of great importance to rely more on our physical examination and the different diagnostic modalities used.

Clinical suspicion is the most important step in diagnosing this disease. The case presented is a catastrophic condition with high mortality which has been referred to our hospital with an unusual symptom of the disease and with regards to our physical examination by

having the clinical suspicion of aortic dissection further evaluation has led us to find the diagnosis and have prompt treatment for the patient.

4. Conclusion

Type A aortic dissection is a catastrophic condition with high mortality and requires prompt surgical treatment and should be diagnosed as early as possible. So it is of great importance to have great clinical suspicion for aortic dissection in patients referring to the hospital with predisposing factors and unspecific or unusual symptoms.

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