

## Aortic Dissection: Still the Great Deadly Masquerader- Case Report with Review of Literature

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### Abstract

### Case Report

Acute aortic dissection is an extreme medico-surgical emergency. It's often misdiagnosed, however it's life-threatening condition that requires rapid diagnosis and treatment. We describe here a case of fatal acute aortic dissection in a 60 year old man, without medical history, who was misdiagnosed with acute coronary syndrome and died from extensive aortic dissection type A of Stanford within 24 hours. We reviewed the literature of acute aortic dissection and we focused particularly on clinical presentations, importance of a history and a complete examination, outcomes and investigations of aortic dissection.

**Keywords:** Aortic dissection, stanford type A, acute coronary syndrome, limb ischaemia, acute renal injury, Adamkiewicz artery.

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## INTRODUCTION

Acute aortic dissection is a medico-surgical emergency. It's a deadly pathology with mortality rates can reach 94% in the first week.

This disease is often misdiagnosed, and can mimic other pathologies such as coronary artery syndrome, acute lower limb ischaemia, acute flaccid myelitis or other presentation depending on the affected organ. However, it's life-threatening condition that requires early diagnosis by a detailed history and physical examination with meticulous semiological analysis in order to provide appropriate management for better outcome.

## CASE REPORT

A 60-year-old moroccan men, with no significant morbid or family history, with a pack-year

index of 30 for active smoking. He hadn't a traumatic context. The patient was referred for acute coronary syndrome 13 hours after the onset of sudden intense chest pain. The patient reported a complete loss the ability to move his lower limbs.

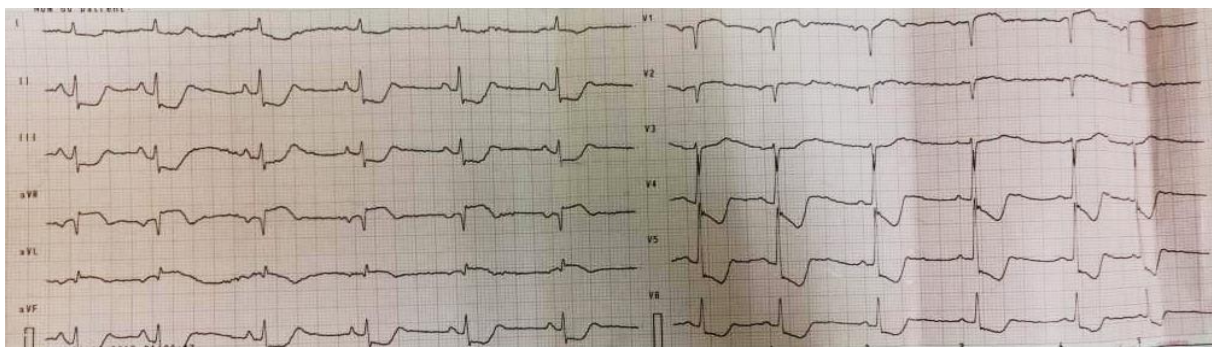
Upon physical examination at the admission, the patient was awake, oriented in time-space-person. Regular heart rhythm at 80 beats per minute, with low systolic blood pressure at 80 mmHg, anuric. No pericardial rub or heart murmurs were objectified. No carotid murmurs were auscultated and jugular venous distension was not found upon examination. Pulmonary and abdominal examination showed no significant findings. Lower right limb was cold, pale and cyanotic, capillary fill time was superior to three seconds Figure 1 with weak right femoral pulse. Neurologic examination revealed a paraplegia with and saddle anesthesia.



**Figure 1: A: Cyanosis and pallor of the right lower limb, B: Abnormal capillary refill time**

The suspicion of coronary syndrome was established and the electrocardiogram obtained revealed a ST segment elevation in aVr with ST depression in

apical, lateral and inferior leads Figure 2. Laboratory testing revealed an acute renal injury: serum creatinine 22mg/l, glomerular filtration rate 32ml/min.



**Figure 2: Electrocardiogram showing a regular sinus heart rhythm at 80 beats per minute with ST segment elevation in aVr with ST depression in apical, lateral and inferior leads**

An aortic dissection was suspected and emergent computed tomography (CT) scanning of the chest and abdomen was performed. The diagnosis of aortic dissection type A of STANFORD was established. The CT visualize an intimal flap Figure 3 from the origin of the ascending aorta, with extension up to origin of supra-aortic vessels and down to abdominal aorta including coeliac trunk, superior mesenteric artery and both renal arteries. On lower CT sections the intimal flap extended to both primitive iliac arteries and their division branches with total thrombosis of right external iliac artery 45 mm from its origin with repermeabilization at the level of the femoral artery.

In this context, surgical intervention was ruled out, and the patient was referred to intensive unit care for continuity of management. The patient unfortunately died within 24 hours.

## DISCUSSION

Acute aortic dissection is a medico-surgical emergency that involves short-term vital prognosis of a patient. In STANFORD type A acute aortic dissection high mortality is observed, going from 40% to 94% immediate deaths [1, 2]. Its diagnosis needs to be early for a better management and to avoid its deadly complications. However, the diagnosis is not always easy to make with a diverse atypical manifestation that delays the diagnosis in a numerous of cases [2]. The specificity of our observation is the lack of risk factors of an aortic dissection especially the absence of previous arterial hypertension, aortopathy, systemic disease and the absence of any cardiovascular surgical history or thoracic traumatism.

The patient was admitted with multiple end-organ malperfusion. This made us review quickly his initial diagnosis. The coronary heart disease in type A ascending aortic dissection can mistaken aortic dissection for acute coronary syndrome, thus prescribing an anti-thrombotic treatment that can have disastrous consequences by aggravating the initial lesion. This highlights the importance of a careful



**Figure 3: Axial section of abdominal computed tomography angiography of the patient shows the intimal flap in the abdominal aorta**

history and clinical examination with a synthesis of all clinical data [1]. In our case report, the patient presented an intense chest pain that did not go away after 13 hours with ST-segment elevation without an evolution towards Q wave. The paraplegia came concomitantly with chest pain with no history of medullar trauma or any recent infectious context, and with an acute anuria associated renal failure on the biological assessment. We suspected aortic dissection type A with extension to coronary, renal and medullar and limbs arteries. In the clinical literature this is a rare association [3], neurological issues were observed in 18% to 30% of patients [3, 4], however, paraplegia remains a very rare complication observed only in 2% to 5% [5, 6] of patients when Adamkiewicz artery is being affected [5].

The confirmation of the ascending aortic dissection is done by imagery that must ensure a complete and thorough examination of the aorta [7]. The first-line exam is a thoracic computed tomography angiography [4, 7]. Magnetic resonance imaging and computed tomography angiography are superior in the description of lesions and their extension, however trans-esophageal echocardiography plays a crucial role in the peroperative management in hemodynamically unstable patient [7]. Acute aortic dissection of type A requires an emergency surgical treatment that should have as aims: Minimizing brain damage, prevent coronary ischaemia, and avoid a bad perfusion of the organs that makes the prognosis really unfavourable, and immediate proximal aortic repair may be sub-optimal [1, 9]. This can be accompanied with drug treatment notably to reduce the pain, balance the arterial pressure with the goal range of a systolic AP between 100 and 120mmHg, as well as maintain cardiac frequency in the range of 60 cycles per minute [8]. However, the patient status at presentation represents an important predictive factor for post-operative outcome, and the presence of pre-operative mesenteric malperfusion is the most devastating condition [9].

The purpose of sharing this observation is to emphasize on the importance of a history and a complete examination, to choose quickly the best complementary exam to confirm the diagnosis since this disease's severity depends diagnosis delay can lead to a very poor prognosis.

## CONCLUSION

Aortic dissection with extension to coronary artery should be ruled out whenever a patient presents

with electrocardiogram signs suggestive of acute myocardial infarction at the emergency department, because de management is totally different. Undoubtedly, a good clinical examination with an analysis of all of the clinical and paraclinical parameters will lead to correct diagnosis and emergent surgery can be lifesaving.

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