

## A Mediastinal Mass Simulating an Aortic Dissection

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### Abstract

### Case Report

Described at the beginning of the 19th century by Shekleton, aortic dissection is a serious and life-threatening disease [1]. The diagnosis of dissection of the aorta is suspected by the presence of the classic triad: Severe abrupt chest pain, difference in upper extremity blood pressure and mediastinal widening on chest X ray. We report the case of 55 years old man with history of arterial hypertension presenting in the emergency department with the symptomatology of complicated aortic dissection. The diagnosis of mediastinal mass was retained.

**Keywords:** Aortic dissection, mediastinal mass.

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## INTRODUCTION

Aortic dissection is a very serious condition, often fatal, revealed by several symptoms that may mimic those of other diseases, leading to delays in diagnosis.

The diagnosis of dissection of the aorta is suspected in the presence of the classic triad:

1. Severe abrupt onset, ripping or tearing Chest Pain that radiates to back AND
2. Pulse deficit or difference in upper extremity Blood Pressure >20 mmHg AND
3. Mediastinal Widening or aortic knob widening on Chest XRay (mediastinal enlargement, abnormality of the cardiac silhouette, pleural effusion)

35% of aortic dissections nevertheless remain unsuspected in vivo, that's why several predictive clinical score for diagnosis of aortic dissection have been proposed and discussed by the authors.

## CASE REPORT

We report the case of Mr.BB, 55 years old, with history of arterial hypertension under amlodipine with poor adherence to medication, consulting the emergency department for intense chest pain, retrosternal, migrating, with inter-scapular radiation, evolving 1 week before his admission; the pain did not resolve under 1st and 2nd level of Nonsteroidal anti-

inflammatory drugs (NSAIDs), and its intensity was increasing.

In addition, Mr B.B had functional impotence of the 2 lower limbs, of progressive installation, initially intermittent becoming permanent, without pain, sphincter disorders, or sensitivity disorders evolving 15 days before his admission.

The clinical examination found an afebrile patient, hemodynamically and respiratory stable. The cardiovascular examination found a blood pressure asymmetry (BP in the right upper limb = 180/100 mmHg, BP in the left upper limb= 100/60mmHg), no cardiac murmur, neither carotid or abdominal aorta murmurs. The peripheral pulses are present and symmetrical. No coldness of the lower extremities was found.

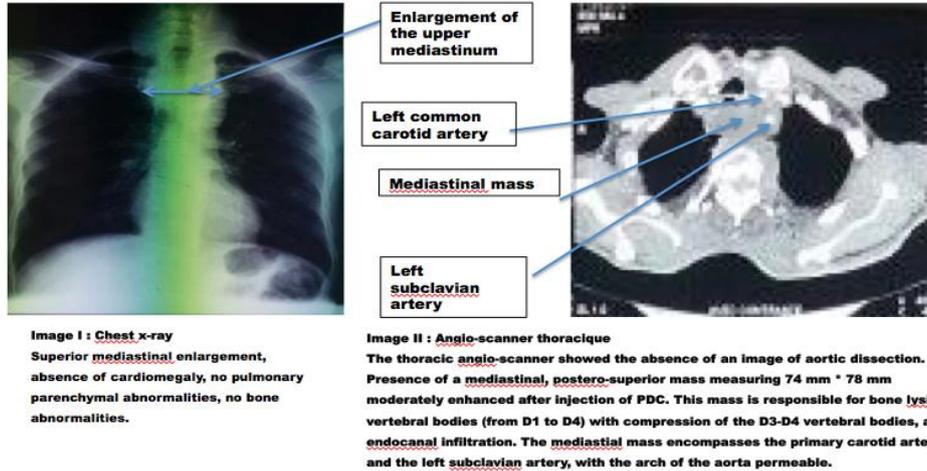
The patient presented a thoracic spinal syndrome, flaccid para pyramidal syndrome with hypotonia, abolished reflexes and negative Babinsky reflex bilaterally and symmetrically in the 2 lower limbs. In addition, we did not notice a sensory level, nor trophic disorders. The rest of the clinical examination: abdominal, pulmonary, osteoarticular and dermatological was without particularity.

Biological tests: complete blood count (CBC), erythrocyte sedimentation rate (ESR), blood sugar level, urea, ionogram, transaminases, troponin; were normal. ECG showed a sinus tachycardia, absence of

conduction, repolarization or rhythmic disorders. The chest x-ray found an enlargement of the upper mediastinum;

The thoracic-CT angiography was performed searching an aortic dissection. Contrariwise, we found a

mediastinal, postero-superior mass, with bone lysis, vertebral compaction and endocanal infiltration. This mass included the primary carotid artery and the left subclavian artery, the arch of the aorta remained permeable.



## DISCUSSION

Described at the beginning of the XIXth century by Shekleton, aortic dissection is a serious life-threatening disease [1]. Aortic dissection is the first cause of acute aortic syndrome in front of the intramural hematoma and penetrating atheromatous ulcer. Defined as a tear in the aortic media, responsible for creating a false vascular channel separated from the aortic lumen by "intimal veil" or "intimal flap" [2]. The clinical presentation is dominated by chest pain, which is often intense, with back and/or abdominal radiation, a blood pressure asymmetry, a mediastinal enlargement [3, 4]. However, the lack of specificity of the characteristics of the pain, combined with the low incidence of the pathology are responsible for a delayed diagnosis, worsening the patient's prognosis [5]. 35% of aortic dissections remain unsuspected in vivo [6]. Several scores have been proposed in order to predict the clinical probability of an aortic dissection [2, 6, 7]. Von Kodolitsch [6] offers a predictive clinical score for

aortic dissection : 44495 patients between 1988 and 1996 presenting to the emergency department for chest pain or back pain were included in the study. After a statistical study, a clinical probability score including 3 clinical criteria was developed:

- Chest pain with an aortic origin was defined in the study as having an abrupt onset, with "ripping" nature
- Pulse asymmetry or blood pressure asymmetry
- Mediastinal enlargement.

In this study, in all patients (100%) with the 3 clinical criteria, the diagnosis of aortic dissection was made (See Table I, II) [6].

In our patient, we found the 3 diagnostic criteria for aortic dissection: Aortic pain, pulse and blood pressure asymmetry and mediastinal enlargement.

Table I, II: Calculation of the predictive score for aortic dissection according to 3 criteria (6)

Variable	No. (%) of Patients		Probability of Dissection, %
	Dissection (n = 128)	No Dissection (n = 122)	
No sign present	5 (4)	65 (53)	7
Aortic pain alone	13 (10)	29 (24)	31
Mediastinal widening, aortic widening, or both alone	11 (9)	17 (14)	39
Aortic pain + mediastinal widening, aortic widening, or both	50 (39)	10 (8)	83
Pulse differentials, blood pressure differentials, or both alone	2 (2)	0	100
Aortic pain + pulse differentials, blood pressure differentials, or both	11 (9)	1 (1)	92
Mediastinal widening + pulse differentials, blood pressure differentials, or both	2 (2)	0	100
Aortic pain + mediastinal widening, aortic widening, or both + pulse differentials, blood pressure differentials, or both	34 (27)	0	100

Variable	Nondissecting Aortic Disease (n = 21)	No Aortic Disease (n = 36)	P
Immediate onset of pain alone	8 (38)	25 (69)	<.05
Tearing or ripping pain alone	2 (10)	1 (3)	.27
Immediate onset of pain and tearing or ripping pain	1 (5)	3 (8)	.61
Mediastinal widening, aortic widening, or both	17 (81)	10 (28)	<.01
Murmur of aortic regurgitation	14 (67)	5 (14)	<.01
Pulse differentials, blood pressure differentials, or both and aortic pain	1 (5)	0	...

In addition, our patient presented on admission a functional impotence of abrupt onset with a para pyramidal syndrome in its flaccid phase on clinical examination.

Acute aortic dissection is one of the etiologies of acute paraplegia due to medullary infarction responsible for paraplegia. It is estimated that 10% of acute aortic dissections are associated to spinal cord syndrome [8]. The physiopathological mechanism mentioned is the obstruction of the intercostal segmental artery as well as the Adam-Kiewicz artery by the back and forth movements of the intimal flap of the false channel [9, 10].

In our patient, the motor deficit of the 2 lower limbs is explained by spinal compression by endo-canal infiltration of the mediastinal mass.

To sum up, in our patient:

- The mediastinal mass is responsible of the acute pain, probably due to compression of the neighboring organs.
- Tension asymmetry is caused by the mass encompassing the left subclavian artery.
- The visualization of the mediastinal mass is at the origin of the visualization of a superior mediastinal enlargement.
- Finally, paraplegia, is caused by bone lysis, and endo-canal infiltration of the mass with spinal compression and not by obstruction of the artery of Adam-Kiewicz.

## CONCLUSION

We report in this observation, the case of a patient with a mediastinal mass with the full clinical presentation of an aortic dissection: History of hypertension, acute migrating chest pain, blood pressure asymmetry, functional impotence of the 2 lower limbs with brutal onset, mediastinal enlargement on chest X-Ray.

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