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Contained Rupture of Thoracic Aorta Aneurysm in the Chest Wall Revealed by a Voluminous Scapular Mass: A Rare Presentation

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Abstract **Case Report**

We present a case of a 70-year-old male with a history of poorly monitored high blood pressure, who was transferred to our hospital due to a large thoracic wall mass, at the left scapular region. He complained of back and left shoulder pain. Chest X-ray revealed a middle and posterior mediastinal widening. Thoracic computed tomography showed a ruptured dissecting aneurysm of the thoracic aorta, with type B aortic dissection, large left thoracic wall mass of 15cm, costal and left scapular lysis. The patient was hospitalized during eight days, an analgesic treatment was instituted, he had blood transfusion and the high blood pressure was controlled with beta-blockers. We opted for a conservative therapy, open surgery being hazardous and endovascular treatment unavailable in our hospital. The patient couldn't afford to be evacuated. It was our first case of chest wall contained ruptured of thoracic aorta aneurysm. We haven't seen a similar case in the literature.

Keywords: Aortic dissection, dissecting aneurysm, open repair, TEVAR, poor resources country.

Abbreviations:
TEVAR: Thoracic Endovascular Aortic Repair

INTRODUCTION

Aortic dissection is one of major cardiovascular emergencies affecting a consequent number of people around the world per year. The lethality rate is very high at the acute stage. However, in the chronic stage, evolution can lead towards aorta aneurysm (dissecting aneurysm), which may require a surgical treatment. At that stage, rupture when it occurs, is often a fatal event. Sometimes rupture can be contained by neighborhood organs, which allows to keep temporarily safe the patient's life. We report a case of chronic type B aortic dissection, associated with a ruptured dissecting aneurysm of the thoracic aorta, in the chest wall causing a voluminous and pulsatile scapular mass.

CASE REPORT

A 70-year-old male was addressed to us, in June 2018, for the management of a ruptured thoracoabdominal aneurysm. He presented, since May 2018, a large posterior thoracic wall mass, at the left scapular region, associated with back and left shoulder pain, rated as 7 out of 10 on the intensity scale. He had a history of recent high blood pressure and no other medical antecedent. He did not smoke. He was initially received at Thies regional hospital, where they attempted first to biopsy the mass. They were confronted with an important bleeding that forced them to stop the procedure. They performed chest x-ray and thoracic computed tomography before sending us the patient.

On admission, the patient presented on examination a slightly elevated blood pressure (148/96 mmHg) on both arms. Cardiovascular examination showed tachycardia (110) and normal heart sounds without murmur. There was no carotid bruit. He presented a large (15x13 cm) and pulsatile scapular mass. The skin over was normal with an unhealed wound at the biopsy site (Fig-1).

Respiratory examination was quite normal. The abdomen was depressible, discreetly sensitive, without palpated mass. Electrocardiogram revealed anterior hemiblock and left ventricular hypertrophy. Chest X-ray showed a middle and posterior mediastinal widening. A dense and homogeneous opacity at the third middle of the left lung with tracheal attraction to the left. Lungs fields were otherwise unremarkable (Fig-2).

Thoracic computed tomography demonstrated a ruptured dissecting aneurysm (Fig-3) of the thoracic aorta, with type B aortic dissection, large posterior left thoracic wall mass of 15cm in diameter, costal and left scapular lysis (Fig-4). The false lumen was circulating with partial thrombosis. The dissection extended to the iliac axes. Abdominal viscera were without abnormalities apart from left renal cysts.

Biological baseline investigations included blood count, electrolytes, urea and creatinine levels, showed severe anemia at 6.4, and creatinine level at 19.1. Management consisted first to control pain with grade II/III analgesics and lower the blood pressure by administering betablockers. He had also blood transfusion. Given the topography of the aneurysm, surgery was not feasible. Endovascular treatment (TEVAR) was better indicated but unavailable in our structure. We therefore opted for a conservative therapy combining strict blood pressure control (target systolic pressure of 110mmhg), lipid lowering and antiplatelet. The patient was followed in double team with the cardiologists. He died at his home, on January 2019, after 7 months of follow up, of a probable internal rupture, the autopsy had not been done.

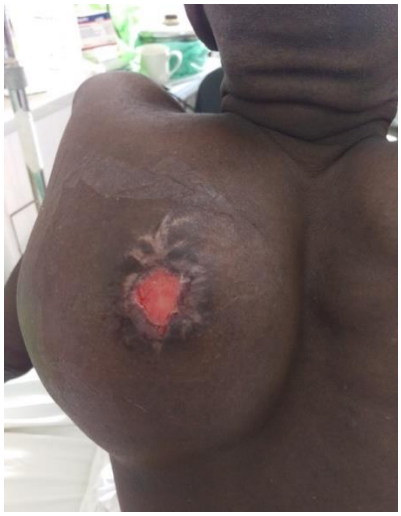

Fig-1: Bulky pulsatile scapular mass, scar from biopsy attempt

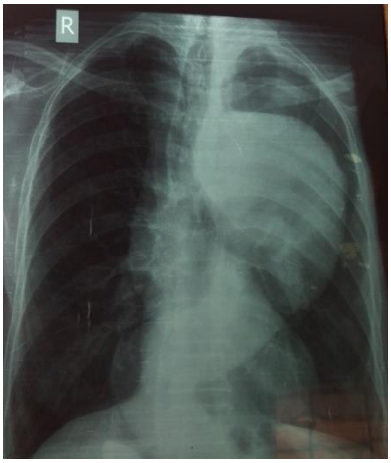

Fig-2: Chest X-ray shows mediastinum widening, unrolled aorta evocating a thoracic aorta aneurysm

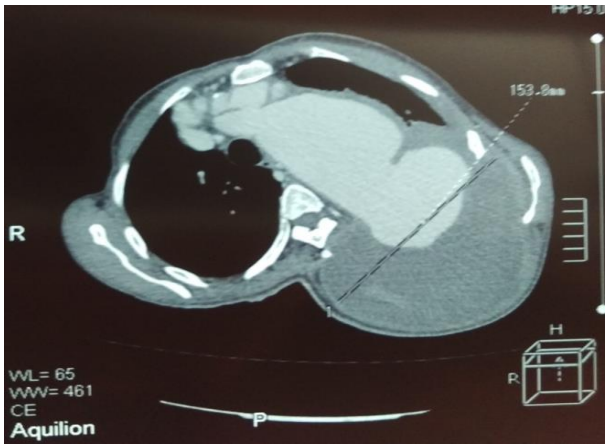

Fig-3: Thoracic computed tomography shows aortic dissection and ruptured dissecting aneurysm

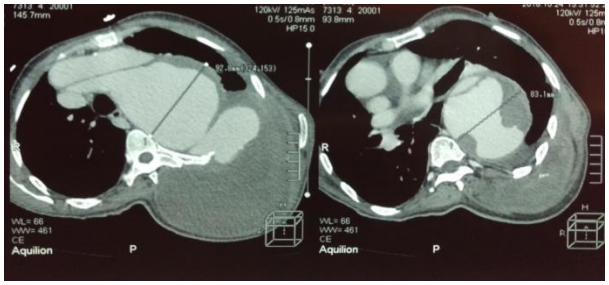

Fig-4: Thoracic computed tomography shows aortic dissection, dissecting aneurysm and chest wall hematoma

DISCUSSION

Aortic dissection is a medico-surgical emergency with high morbidity and mortality at the acute stage [1, 2]. While in the West the epidemiological data of dissection are reported, it remains poorly described in Sub-Saharan Africa [3]. Causes of dissection are multiple. We have congenital forms: connective tissue disorders (Marfan syndrome, Ehlers-Danlos syndrome and Familial Aortic Dissection syndrome). Acquired forms are secondary to hypertension, smoking, dyslipidemia, diabetes, … [1]. And there are post traumatic dissection which are a common form. The site of the intimal tear and the extent of the dissecting hematoma determine the classification of aortic dissection. Two classifications have been described for aortic dissection (DeBakey type and Stanford classification) [1]. Acute dissection is often symptomatic. Pain is the most frequently found sign. Rarely patients go unnoticed and evolve towards chronicity [1, 4]. Rapid diagnosis is imperative in aortic dissection, due to the high mortality rate of the pathology. First line investigations include rapid and non invasive diagnostic imaging. Chest X-ray finds classically a widening of the mediastinum as in our case. Echocardiography can evaluate ascending aorta and aortic arch. CT with its sensitivity and specificity is the most frequently used diagnostic test [1, 4]. Multislice CT identifies intimal flap, branch vessel involvement, extent of dissection, patency of false lumen, size of aorta, intramural hematoma. MRI gives the same results as CT with higher sensitivity and

specificity. It also has the ability to differentiate the true and false lumen by measuring velocity of blood flow. But its use is limited by its contraindication [1]. Aortography used to be considering the gold standard but is invasive. It has diagnostic and therapeutic utility. The evolution of aortic dissection can be towards false lumen thrombosis (form of healing) or to the constitution of an aortic aneurysm (dissecting aneurysm) [2]. The risk of rupture in dissecting aneurysm is high and very often fatal, when it is done in a large cavity. The rupture can be however contained by neighboring organs. Either way surgical or endovascular management is indicated associated with medical therapy [4-6]. That latter consists of adequate analgesia, rigorous control of blood pressure with betablockers and careful lipid control [1]. Vasodilating drugs can also be combined to the treatment. Surgical treatment has its indications limited in type B aortic dissection, to complications such as intractable pain, imminent aortic rupture and aneurysm [6, 7]. But it remains hazardous in such patients without proven superiority over interventional treatment [8]. It must be done in experienced centers. TEVAR introduced in 1994, is now well preferred over open surgery in ruptured thoracic aneurysms, due to its effectiveness in acute emergencies [5,8]. However, its long-term durability is poorly established. And TEVAR also has its own complications not only procedural but also at short and middle term. Endoleaks are the most common complications and indications of re-intervention after TEVAR [5]. We as a sub-Saharan country have not experiences in surgery of thoracic aorta aneurysms due to lack of resources. We also did not start practicing TEVAR. Therefore, those of our patients who can afford it are sent abroad.

CONCLUSION

Aortic dissection is a medico-surgical emergency at the acute stage. While surgery is the treatment for patients with type A dissection, optimal medical therapy is rather indicated in patients with uncomplicated type B dissection. And adequate beta-blockade is the cornerstone of that medical therapy. Dissecting aneurysm is one major complication of chronic type B dissection. Its optimal management is controversial between open surgery repair and TEVAR. Further complicating conventional repair, such patients have an increased risk of complications due to a lot of comorbidities. TEVAR is well-preferred nowadays for better short-term results but long-term outcomes are much less sure. And open repair surgery offers however acceptable results as much on short as long term if it's done by an experimented center. So management approaches in dissecting aneurysm should be considered carefully, considering both short and long-term risks. Either way, resources are essential for good support.

Conflict of Interest: Authors declare no conflict of interest.

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