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Thoracic Aortic Aneurysm Revealed by Haemoptysis on a 10-Year-Old Girl at Paediatrics Department of Yalgado Ouedraogo University Hospital

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Abstract

Thoracic aortic aneurysm is a rather rare disorder in children and difficult to diagnose. It is generally linked to congenital heart defects or connective-tissue diseases. Our case is a 10-year-old girl admitted in the pediatric emergency care unit on January 19th, 2015 for massive haemoptysis and severe anaemia. Examination revealed severe anemia and a silent left lung. The Chest X-Ray revealed an abnormal mass on the upper left side of the mediastinum, and left lower lobe consolidation. The thoracic CT scan highlighted a 64 mm aneurysm of the subisthmic aorta with a thin 5 mm hole. It also showed pseudo-coarctation of the aorta. Treatment in intensive care consisted of blood transfusion and iron supplement. She was due to travel abroad for cardio vascular surgery, but died on November 2016. Thoracic Aortic Aneurysm in our setting was discovered incidentally. In spite the fact that it is an extreme surgical emergency, in Burkina Faso, treatment can only be possible abroad upon medical evacuation.

Keywords

Aorta, Aneurysm, Haemoptysis, Coarctation, Burkina Faso

1. Introduction

An aortic aneurysm is a stretched and bulging section in the wall of the aorta. There are two types of aortic aneurysms: thoracic aortic aneurysms and abdominal aortic aneurysms [1]. The thoracic aortic aneurysm is rare in children and

difficult to diagnose; it is generally associated with congenital heart defects or connective-tissue diseases. The global incidence is not known, however the scientific literature reports few cases [2] [3] [4]. Our study reports a thoracic aortic aneurysm revealed by a haemoptysis on a 10-year-old girl, in the pediatric department of Yalgado Ouédraogo University Hospital.

2. Observation

A 10-year-old girl was admitted in pediatric emergency care unity on January 19th, 2015 for massive haemoptysis and severe anaemia. She had a one year history of recurrent headache, chest pain, and haemoptysis. The haemoptysis episode which led to hospitalization was massive, with severe anaemia and dizzinesses.

Medical history: Pregnancy and birth were normal with no history of neonatal resuscitation, cyanosis, or respiratory distress syndrome. Her immunization charts were up to date and complied with the national immunization schedule for the age. She had normal weight and height growth. Her psycho-social development was also normal.

Family history revealed that, she was the 4th child of the family of 6 children; there was no parental consanguinity; her mother suffered from numbness (following childhood meningitis); her 4-year-old brother died recently from unknown cause.

Physical examination noted:

- patient conscious, in bad condition with very pale skin and in good nutritional state.

- vital signs: pulse 124 p/mn, respiratory rate 22 c/mn, blood pressure: 100/50 mmHg on the right arm, weight: 24 kg, height: 129.5 cm, BMI: 14.31 kg/m^2.

- cardiovascular examination: shock, a systolic murmur grade IV on the lower axillairy line in the 5th left intercostal space, irradiating to the armpit.

- lung examination: a decrease of breath sounds on the left lung.

Laboratory tests: blood test confirmed severe anaemia (haemoglobin: 3.6 g/dl)

- blood tests in search of bacterial infections were negative, blood urea, creatinine, and glycemia were normal.

- sputum culture for the tuberculosis infection was also negative.

Front Chest X-Ray highlighted a dense left para hilar mass in the mediastinum (**Figure 1**) and left lung consolidation (**Figure 2**).

Echocardiography showed no heart defects, subisthmic aortic aneurysm measuring 64 mm diameter.

Thoracic CT scan showed more details of the abnormalities: complexe malformation of aortic trunks: aberrant sub clavian arteries, a subisthmic aortic aneurysm (64 mm) with a 5 mm narrow opening, and a pseudocoarctation of the aorta (**Figure 3**). The left lung consolidation was probably associated with pneumonia or lung sequestration.

Treatment consisted of red blood cells transfusion. She died on November

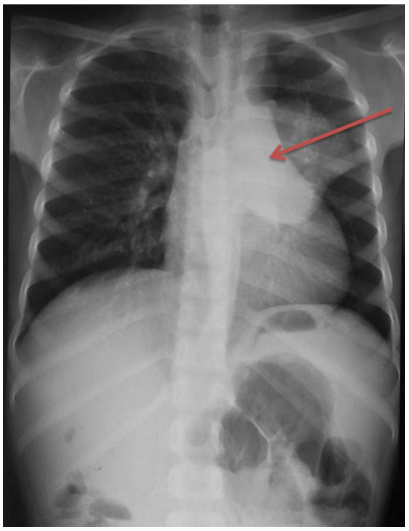

Figure 1. Front chest X-ray: dense para hilar mass in the left mediastinum.

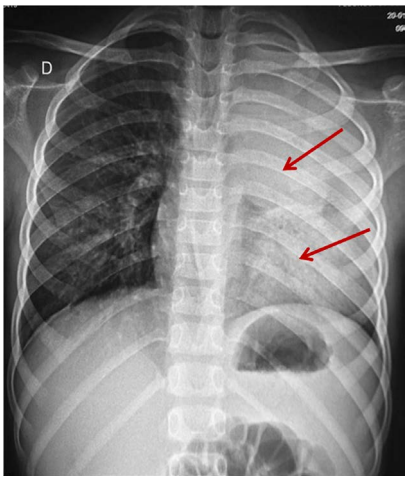

Figure 2. Front chest X-ray: dense para hilar mass and pneumonia (two months after).

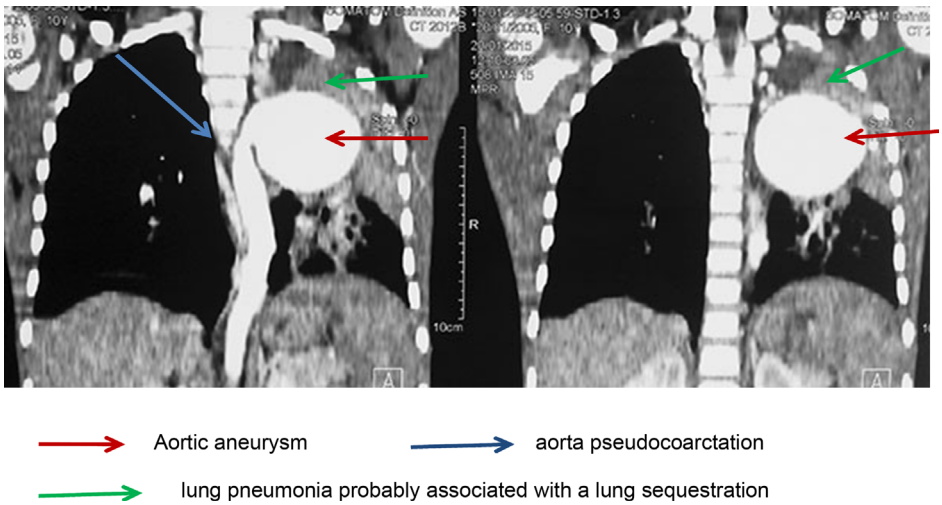

Figure 3. Thoracic CT scan: Aortic aneurysm and aorta pseudocoarctation.

2016, from severe haemoptysis. She was still on a waiting list for medical evacuation abroad for cardiovascular surgery.

3. Discussion

Thoracic aortic aneurysm is rare in children [5]; few cases have been reported in the scientific literature. Abdominal aortic aneurysm is the most common. Most aneurysms are associated with other disorders like connective-tissue diseases: Marfan syndrome, Ehler-Danlos syndrome, Loeys-Dietz syndrome, Bourneville's disease [4], or cardiovascular pathologies such as hypoplastic left heart syndrome [3], sternal cleft [2] [5], aortic stenosis [6], bicuspid aortic valve [4], aortic coarctation [5] [6]. However, abdominal aortic aneurysm can also be caused by an infected umbilical catherism [7]; aneurysm of tuberculosis and mycosis origin has also been reported [8] [9] [10]. Our patient had several vascular defects: pseudocoarctation of aorta and aberrant sub clavian arteries.

Our patient was 10 years old at the time of the diagnosis. We found no data in the scientific literature specifying the mean age at the time of diagnosis in children.

Clinical symptoms are not specific: epigastric or chest pain, vomiting, aerophagia [3] [11] [12]; most aneurysms are discovered incidentally when screening for malformation. The risk here is when they bust or leak [3]. In our setting, treatment was a challenge as heart surgery is not available in the country. The nature of the aneurysm could only be specified after surgery, unfortunately the patient died before the surgery and it was not possible to perform post mortem lab tests.

4. Conclusion

Thoracic aortic aneurysm in our working setting was discovered incidentally. In Burkina Faso, in spite the fact that the condition can be potentially life-threatening, cardio vascular surgery is only possible abroad. The implementation of a vascular surgery unit is necessary in order to improve the prognosis of this disease and other cardiovascular diseases in children.

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