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Case Report

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A Vascular Arc Mimicking Asthma in an Infant

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Abstract

The Arteria lusoria or retroesophageal right subclavian artery is the most common malformation of the aortic arch, it can be associated with other congenital anomalies of the heart and large vessels, including the bicarotid trunk which constitutes a common trunk giving rise to the two internal primitive carotid arteries. We report a rare observation of an aortic arc mimicking asthma in a 2-month-old infant discovered by an angioscan performed after poor evolution under bronchodilator treatment.

Keywords: Arteria lusoria; Bicarotid trunk; Aortic arch; Infant; Asthma.

Introduction

The aortic butt and its branches can be the seat of anatomical variations. The most common anomaly concerns the right subclavian artery which originates directly from the aorta and thus joins the right upper limb by taking an aberrant path, its incidence is of the order of 0.5 to 2% in the general population, and can be associated in 30% of cases with a bi-carotid trunk; It is most often asymptomatic and accidentally discovered [1]. Thus, we report a rare observation of an aortic arch mimicking asthma in a 2-month-old infant discovered by an angioscanner performed after a bad evolution under treatment, after free and informed consent of the parents.

Case report

A female aged 2 months and a half, youngest of a sibling of 2, from a non-consanguineous marriage, the pregnancy and childbirth went well and the child was up to date with his vaccinations. Her background was a notion of 2 episodes of wheezing dyspnea since the age of 20 days and 40 days and an asthmatic grandfather. It is admitted to our department for wheezing dyspnea installed 4 days ago associated with a wet cough day and night evolving in a context of apyrexia and conservation of the general condition. Clinical examination found a conscious polypneic patient at 62 cycles per min normocardium and apyretic, SaO_2 was 98% ambient air. She had no statutory weight delay. Pleuropulmonary examination found signs of respiratory control with a sub-costal pull type and bilateral sibilant rails. Cardiac auscultation did not find a breath. The count was normal and the CRP was 32.36 mg/L. A chest x-ray of the front showed chest distension associated with an absence of an aortic pimple and the diagnosis of infant asthma was retained in front of 3 episodes of wheezing dyspnea and atopy in the family. Initial management consisted of bronchodilator nebulization every 6 hours and administration of amoxicillin - clavulanic acid at a dose of 80 mg/kg/d in three doses. Respiratory PCR identified a rhinovirus and enterovirus. we concluded that

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a viral infection may have triggered the exacerbation of asthma. Faced with the non-improvement of the symptomatology after 10 days, an angioscanner looking for a malformation showed an appearance of arteria lusoria associated with a bi-carotid trunk. A cardiac ultrasound looking for an associated intracardiac abnormality was normal. After a month, the evolution has been favorable. There was no surgical indication at this age and in front of the current symptomatology and the patient was followed in cardiovascular surgery.

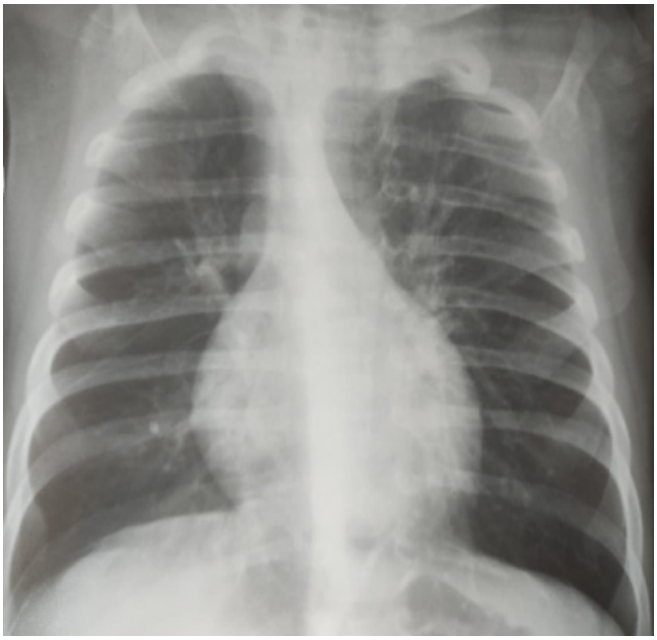

Figure 1: Chest X-ray of the face showing chest distension associated with absence of the aortic pimple.

Discussion

The aberrant right subclavian artery or arteria lusoria is the most common malformation of the aortic arch, its incidence is of the order of 0.5 to 2 % in the general population [1]. It is the result of aplasia of the 4th right aortic arch, compensated by a persistence of the ipsilateral right dorsal aorta, the persistence of the latter, which in the physiological state regresses makes it possible to correct the agenesis of one of the 4 aortic arches. Most often it is asymptomatic, however it becomes symptomatic when the esophagus and trachea are compressed between the arteria lusoria behind and the bicarotid trunk forward. Our patient had signs of tracheal compression with expiratory dyspnea type that attracted attention but were confusing with asthma. Thus, we emphasize the interest of thinking about vascular malformations in front of asthma that does not respond to treatment. Digestive signs such as dysphagia are often unknown and occur in the background [2,3]. Our patient had no eating difficulty or dysphagia. Indeed, stridor is the most common call sign, associated with wheezing dyspnea bronchitis. Very early in the neonatal period, stridor can be increased by tracheomalacia and can also give asthmatiform syndrome [4,5]. Our patient had no stridor. Radiography is an important part of diagnosis. It sometimes alone can evoke the diagnosis of compression of vascular origin. A localized and fixed narrowing of the tracheal caliber and an abnormality in the position of the aortic button should be sought [6]. It showed an absence of the aortic pimple in our patient. In our context, the angioscanner is the gold standard for making an anatomical diagnosis with good spatial resolution. In CT scan, it is a vessel that originates from the posterior side of the aorta, has a retroesophageal path to go up and forward in the axillary region. In developed countries, nuclear magnetic resonance imaging is the reference examination providing a better anatomical and functional description by dynamic sequences [7]. Ultimately, no treatment is indicated for asymptomatic arteria lusoria. Treatment is only justified if it leads to annoying dysphagia, signs of tracheal compression of more than 50% or in case of complication of this artery namely aneurysms whether symptomatic or not [6].

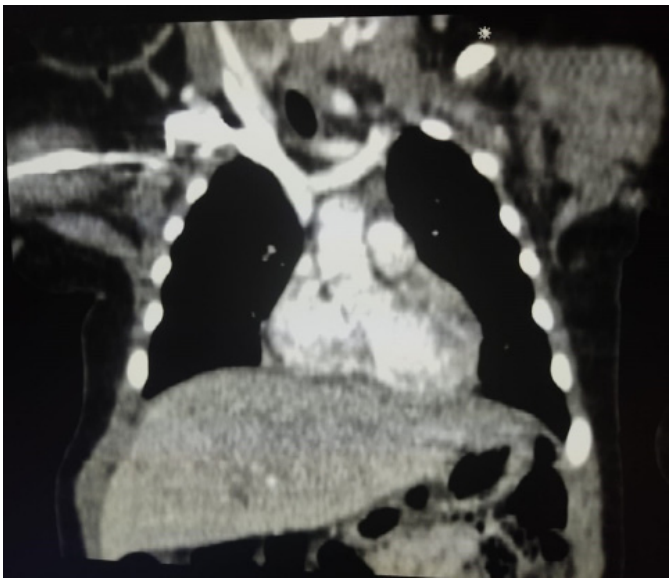

Figure 2: Angioscan in sagittal reconstruction showing a bi-carotid trunk.

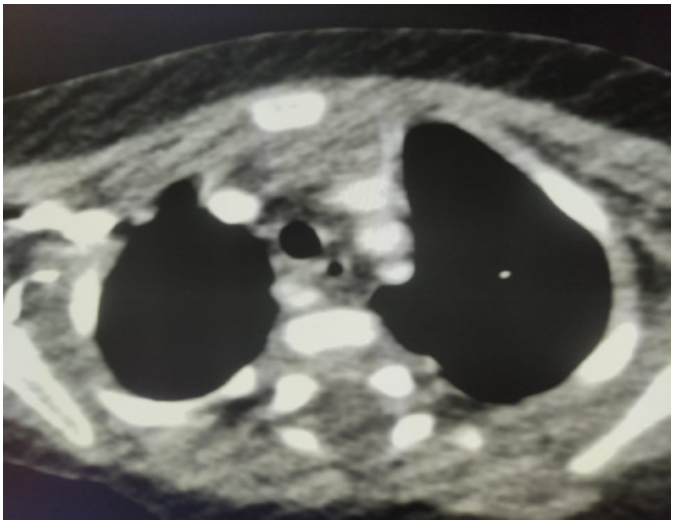

Figure 3: Angioscan showing an arteria lusoria.

Conclusion

Arteria lusoria is a rare vascular malformation often asymptomatic of fortuitous discovery. It is necessary to think of a vascular arch in front of any whistling dyspnea especially when it appears early. Its diagnosis must look for cardiac abnormalities and large vessels including the association with a bi-carotid trunk.

Conflicts of interest: None

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