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UNCOMMON CASE RAPPORT OF ACCIDENTAL DISCOVERY DURING A PREGNANCY OF AORTA COARCTATION

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Introduction

Coarctation of the aorta is a common congenital malformation with an estimated incidence of 3.2 per 10,000 births (1). It is a narrowing of the aorta that affects in most cases the isthmus of the aorta, downstream of the birth of the left subclaviculair artery. Achieving the isthmus represents only 0.5 to 2% of all coarctations (2). It is very often discovered in children. In the absence of management the evolution is fatal; this diagnosis is carried out exceptionally in pregnant women and hypertensives.
We report a case diagnosed in a young woman during a pregnancy our research methodology is based on Evidence Basis Medicine .

Observation:

We report a case of coarctation of the aorta discovered incidentally in a patient aged 35, pregnant with an 8-week pregnancy, hypertensive known for 5 months poorly followed.Admitted to emergencies for the installation quickly progressive ptosis left. The general admission examination revealed BP at 240/110 mmHg in both upper limbs, in an athletic chest patient with slender extremities. Cardiac auscultation found intense, medio-thoracic murmur, radiating to the supraclavicular troughs and back. The femoral pulses are perceived, their amplitude is low contrasting with radial pulses which are very wide. Electrocardiogram shows left ventricular hypertrophy. The chest x-ray showed cardiomegaly with a sub-diaphragmatic tip and ribs at the 6th left and 7th and 8th right sides (Figure 1). Echocardiography identifies an unextracted left ventricle with little hypertrophy with preserved systolic function (60% EF), minimal mitral insufficiency. In addition, the aortic valve is tricuspid, without stenosis or leakage. The diagnosis of coarctation was suspected in this clinical picture and confirmed by CT angiography, which showed a very tight and short stenosis of the aortic isthmus with presence of a left intra-cavernous carotid artery aneurysm measuring 32 mm × 30 mm mm pushing the oculomotor nerves in their cavernous paths without signs of rupture (Figure 2).
Therapeutic interruption of pregnancy was indicated in this patient then the patient underwent angioplasty with placement of a Palmaz stent (4.6 on 40 mm) by double percutaneous radial left and right femoral with a good agiographic result and recovery of femoral and distal pulses (Figure 3,4).
The blood pressure figures went down and the blood pressure was stabilized by a low dose calcium channel blocker. CT scan at 2 weeks showed good permeability of the stent area and diameter stability of the carotid aneurysm which will be programmed for embolization treatment due to its diameter and compressive nature (Figure 5) .

Discussion

Coarctation of the aorta accounts for 6-8% of congenital heart disease, and is the most common congenital heart disease in pregnant women (1).
The discovery of aortic coarctation is classically associated with high maternal mortality (3 to 10% depending on authors), with risk of rupture or aortic dissection, but also rupture of

aneurysm of the Willis polygon, cardiac failure and more rarely, infectious endocarditis (2, 3, 4). The predisposition to dissection is due to biochemical alterations of the connective tissue secondary to elevated estrogen levels or cystic medianecrosis (3, 5).
Increased blood volume and cardiac output, especially in the last trimester, also increase the risk of aortic rupture (3). Heart failure and pulmonary edema typically occur beyond the 4th month of pregnancy, but are
even more frequent and more severe in the last months (2). Their appearance in the first trimester aggravates the prognosis. Bacterial transplant can occur after delivery, especially if aortic disease (aortic bicuspid) or mitral insufficiency are associated (2).
These complications are all the more frequent as the blood pressure is high arterial hypertension justify drug treatment that can appeal to different classes of antihypertensive except those indicated during pregnancy (the angiotensin-converting enzyme inhibitors and angiotensin II receptor antagonists) with a preference for beta-blockers, with the risk of persistence of hypertension despite the treatment of coarctation (2, 3.6).
For these reasons, in the 1960s, most authors proposed contraception, sterilization, caesarean section or therapeutic abortion (2.7), therapeutic abortion was indicated in this patient after a multidisciplinary consultation between obstetricians, cardiologists , Emmergentists and neurosurgeons, given the early age of pregnancy (8 AS) and the very tight nature of coarctation, others have proposed surgical lacing during pregnancy
The clinical diagnosis of coarctation of the aorta is based on hypertension of the upper body and hypotension of the lower part with reduction or absence of pulse in the lower limbs, the physical examination must seek a significant difference in blood pressure among these areas (8). Chest X-ray can also contribute to diagnosis, especially in the older child and the adult, by showing the presence of costal erosions testifying to a collateral circulation.
Two-dimensional transthoracic ultrasound (TST) is used to visualize coarctation by the supersternal approach, to specify its anatomical shape (diaphragm, hourglass) and to evaluate the impact on the left ventricle. In continuous doppler, we can record, over sternal, a negative systolic flow with persistence of a diastolic flow in case of severe coarctation. The trans-stenotic pressure gradient can be evaluated from the maximum values of these peaks. speeds thanks to Bernouilli's formula. In color doppler, the mosaic flow of coarctation takes on an hourglass appearance by resolving in the descending aorta where it is very turbulent. Echocardiography can be used to look for other associated malformations such as aortic bicuspid disease, it remains an inexpensive examination, easily accepted by each patient, and can be repeated as often as necessary. Thus, the diagnosis rate of certainty is 90 , 6% and the misdiagnosis rate is 9.4%. Preoperative echocardiographic assessment provides a very satisfactory anatomical evaluation in most patients with coarctation. This makes preoperative angiography unnecessary. Thus, transthoracic echocardiography should be the first-line method for the diagnosis of aortic coarctation (9).
Thoracic angioscaning allows the precise localization of coarctation as well as a good analysis of collateral circulation and associated vascular anomalies (aneurysms upstream or downstream of coarctation) However during pregnancy magnetic resonance imaging is considered as the best means of diagnosisbecause it is not invasive, and does not use ionizing radiation, no adverse effects have been described on the fetus (10).
In adults, current recommendations for defining therapeutic indications are based on the field (age, hypertension, gradient) and imaging. It is therefore recommended to treat a coarctation responsible for a pressure gradient greater than 20 mmHg at rest and 40 mmHg at exercise (11, 12).
Endovascular treatment is an established, safe and effective alternative to surgical treatment

Conclusion:

Resistant arterial hypertension in children and young adults justifies the search for a curable cause Native coarctation in young adults should always be treated. Endovascular treatment represents a very interesting alternative to avoid all the complications inherent in conventional treatment. The main message remains that of lifetime clinical and imaging surveillance.

Figures:

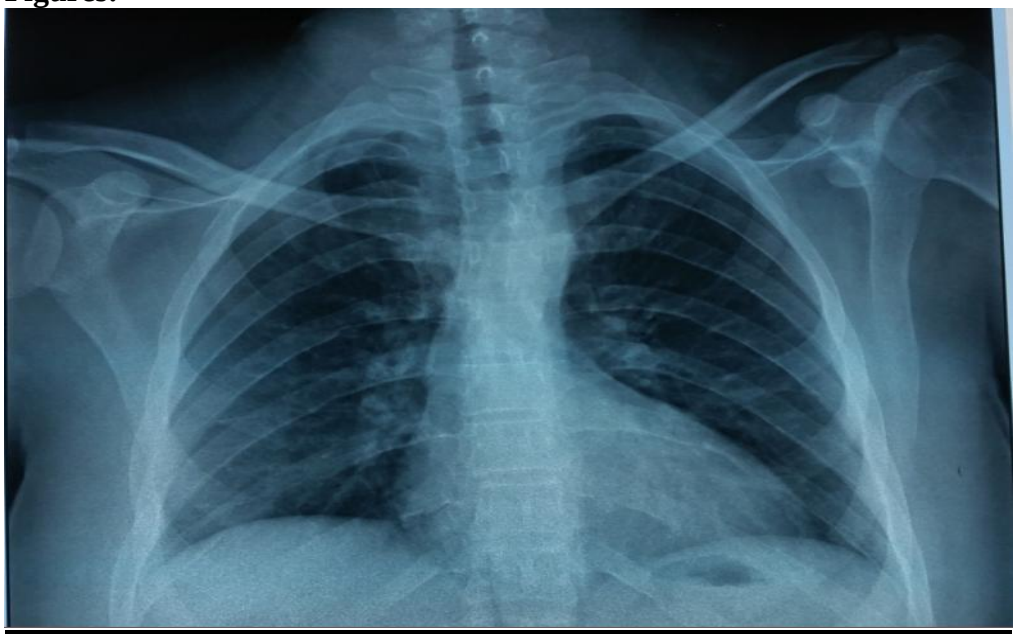

Figure1 :chest X-ray showing the costal densification .

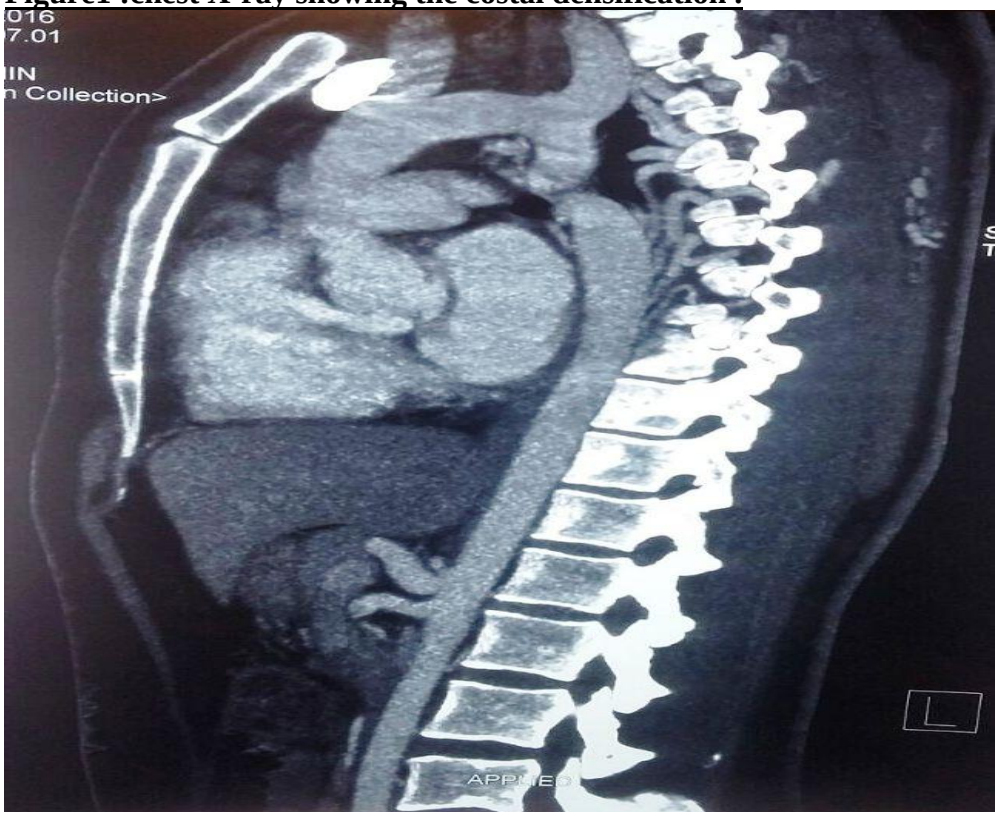

Figure 2 :CT angiography of the thoracic aorta (sagittal section with reconstruction) showing the isthmic localization of coarctation.

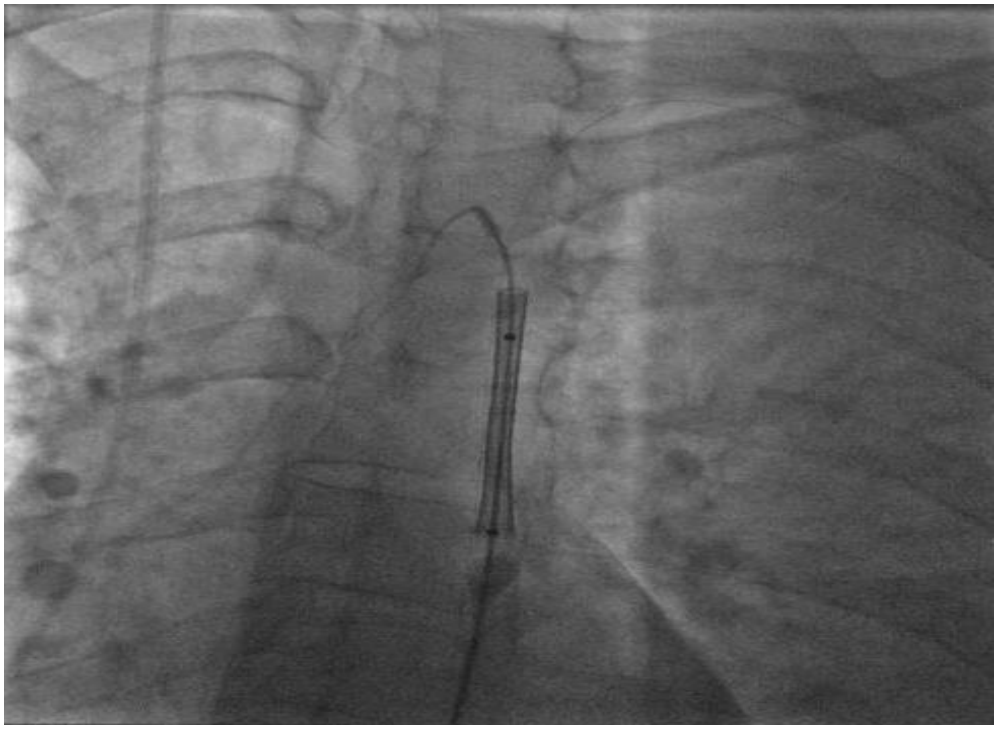

Figure 3 :: Stent placement after successful re-canalization by double radial left and right femoral first.

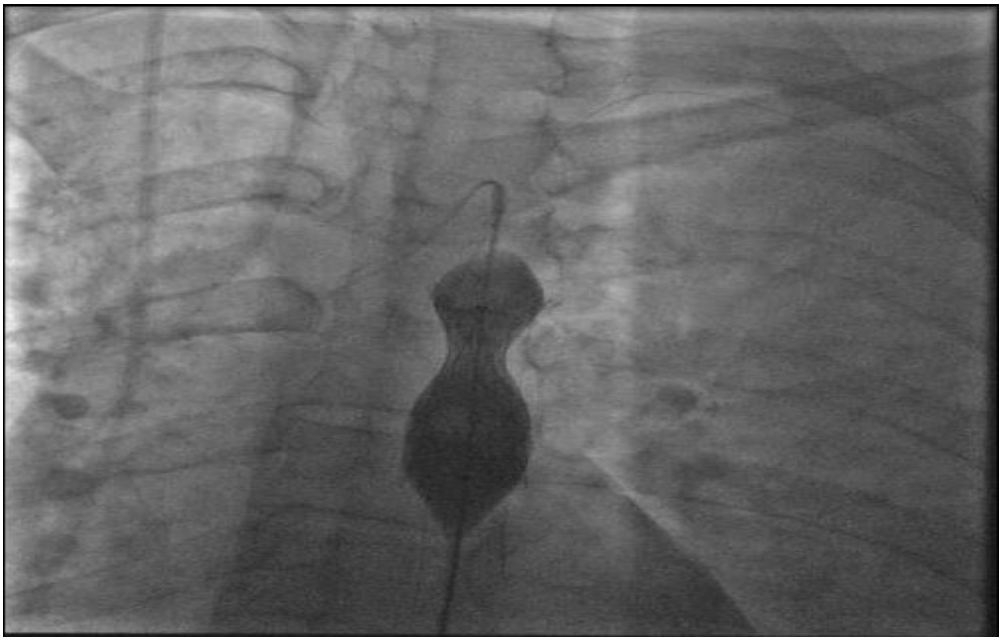

Figure 4: Balloonstentangioplasty 22 mm / 80 mm

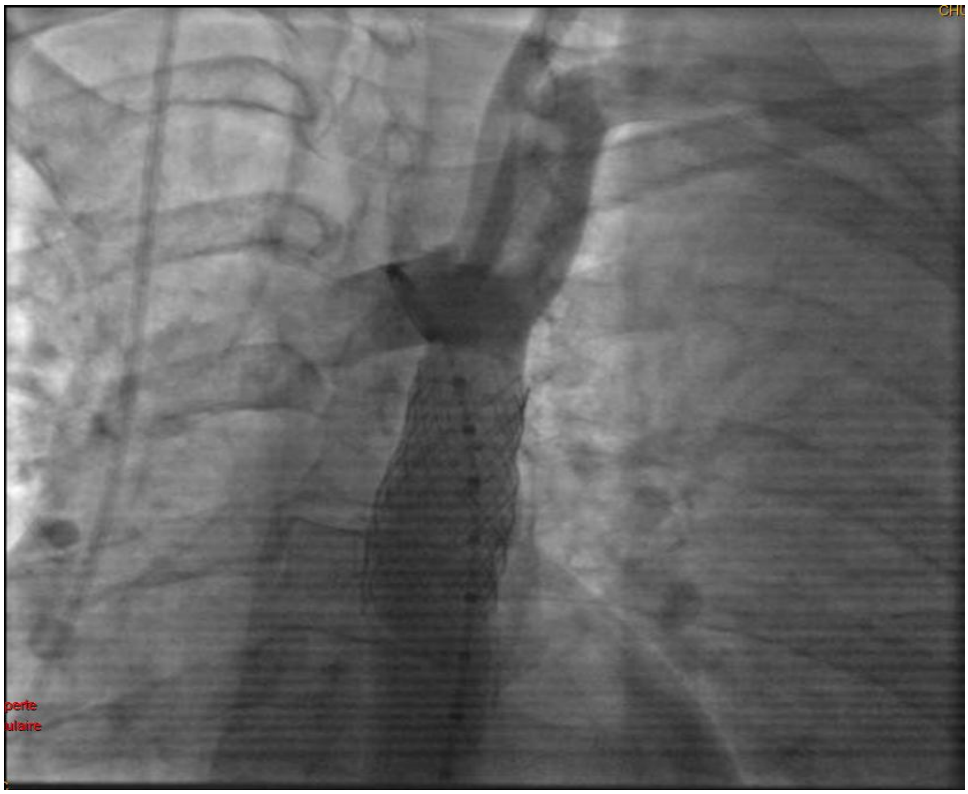

Figure 5 : Angiographic control of the placement of a stent.

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