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Abdominal Pain Revealing a Bilateral Idiopathic Aneurysm of Common Iliac Arteries

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Abstract

Aneurysms are unusual in pediatric population. They are generally caused by infections, arteritis, collagen vascular diseases, vascular malformations and trauma. Idiopathic aneurysms in children are very rare and most reported cases concern multiple localizations. The Iliac localization remains exceptional especially the bilateral form.

We present a case of 6-year-old child who has been admitted to the emergency department with complaints of abdominal pain. The diagnosis of an unruptured and idiopathic bilateral aneurysm of common iliac arteries was made.

Keywords:* *Common Iliac arteries; Aneurysm; Idiopathic; Child

1. Introduction

Arterial aneurysms are uncommon in children. Isolated common iliac artery aneurysms are even less common. A solitary iliac artery aneurysm is defined as an aneurysm of the iliac artery without a coexisting aneurysm at another location [1].

Pediatric aneurysms are usually secondary to connective tissue disorders, arteritis, or mycotic causes. The idiopathic etiology is very rare and only several cases have been described in the literature [2].

Because of their rarity and the difficulty of palpation, the diagnosis of isolated iliac artery aneurysm is delayed, and generally the aneurysm reaches large dimensions, which has a significant risk of rupture and high morbidity and mortality [3].

We describe the diagnostic workup, surgical treatment, and pathologic findings of a 6-year-old boy who presented an unruptured bilateral idiopathic aneurism of common iliac arteries.

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2. Case Report

A 6-year-old Moroccan boy was admitted to the emergency department with complaints of abdominal pain. The patient had fever without nausea, diarrhea, vomiting, dysuria, or hematuria. Medical and surgical history of the child was without pathologic findings.

On physical examination, the child was conscious, asthenic and febrile at 38 ° with mild abdominal tenderness. Blood test and urinalysis test ware normal.

Considering patient's age and clinical presentation, the diagnosis of acute appendicitis was suspected. Abdominal ultrasound found an appendix of usual topography with a normal morphology and size. The examination of the hypogastric region revealed the presence of a bilateral aneurysm of common iliac arteries with no other localization in the rest of the arterial system (figure 1). The maximum diameter was 3.2 cm on the right and 3 cm on the left.

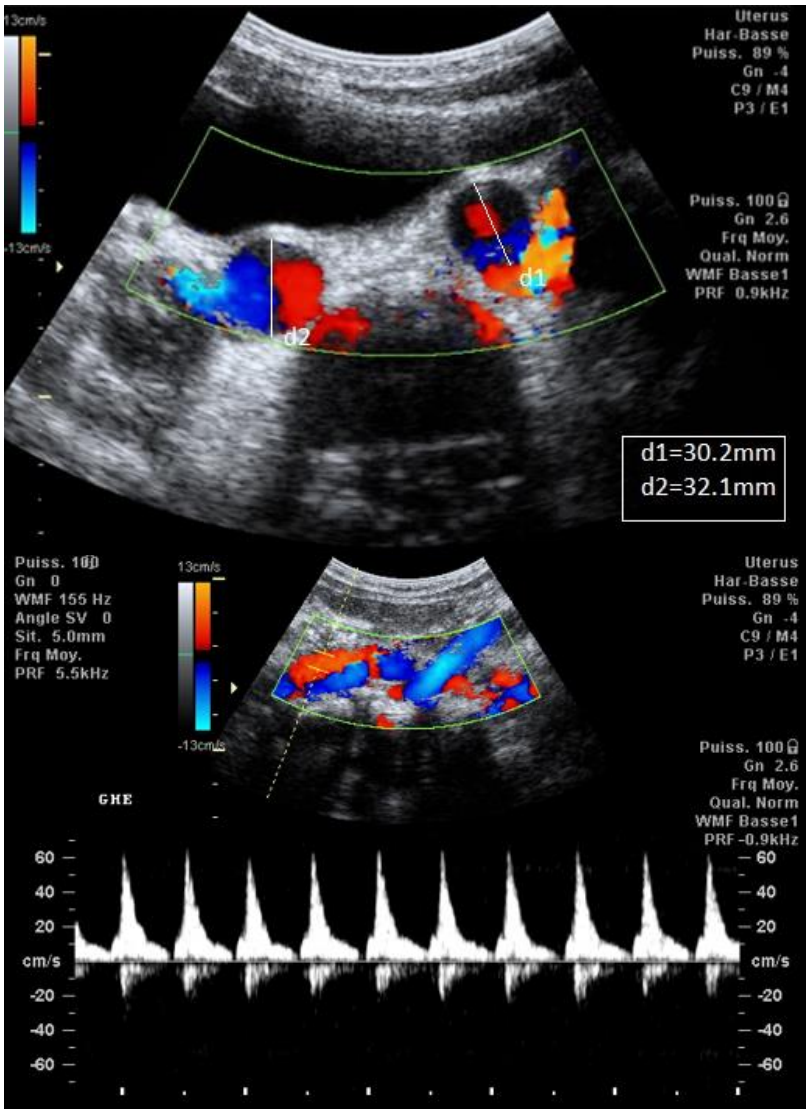

FIG. 1. Abdominal ultrasound showing the presence of a bilateral aneurism of common iliac arteries.

A subsequent computed tomography angiography was performed for the thorax, abdomen, and pelvis. This confirmed a bilateral common iliac artery aneurysm, with no further abnormalities nor other localizations. There were no calcifications or signs of thrombosis, or rupture.

Complementary investigation included a serological test for infectious disease, tumor markers, and autoantibodies. There were no similar cases in family history.

The diagnosis of a bilateral idiopathic aneurysm of the common iliac arteries was retained.

The treatment consisted on an exclusion with a bifurcated prosthetic interposition graft originating from the abdominal aorta. The management of this case and the short-term follow-up were successful.

3. Discussion

Aneurysmal disease is a rare entity in children. It should be carefully evaluated because it has several etiologies such as collagen vascular diseases, arteritis, vascular malformation, trauma, and severe infections.

The primary iliac arterial aneurysm is rare and is commonly associated with multiple congenital syndrome such as Ehlers-Danlos syndrome. The least common type is idiopathic iliac aneurysm (IIA), which is not associated with any of the aforementioned disorders [4].

The estimated prevalence of IIA is very low (0.008% to 0.03%), based on autopsy series [3]. One-third of iliac artery aneurysms are bilateral. No data are available of such aneurysms in the pediatric population [5].

This diagnostic work-up should be performed by an interdisciplinary team of physicians, including cardiologist, nephrologist, geneticist, and rheumatologist [6]. The diagnosis should only be made if no other cause for aneurysm development can be found after a thorough work-up.

For the patient reported no etiology was found. The diagnosis of an idiopathic common iliac artery aneurysm was therefore made.

Although multiple aneurysms are rarely found in children, a complete exploration of the entire vascular system must be considered [7].

Several deaths due to aneurysm rupture and limb loss due to aneurysm thrombosis or distal embolization were reported in literature for untreated patients.

There is no consensus regarding the management of IAA cases in children. [8,9].

Elective treatment remains open repair with interposition of a graft.

Repair of aneurysms in children involves specific considerations: the vessels have smaller dimensions, there is the expectation that the patient will grow, and life expectancy is long.

The vascular reconstruction material varies from case to case and includes prosthetic grafts, reversed saphenous veins, and cryopreserved arteries.

Chithra et al. [8] and Zimmermann et al. [9] conducted elective surgeries using femoral vein grafts to conduct open repairs of iliac aneurysms. Kaye et al. suggested using cryopreserved homologous grafts in younger patients and synthetic grafts in older children [10].

These patients should also be subject to rigorous long-term surveillance to detect any later development of connective tissue diseases or metachronous aneurysms.

4. Conclusion

Idiopathic aneurysms are certainly the rarest form of aneurysms that occur during childhood. This diagnosis should only be made if no other cause for aneurysm development can be found after a thorough work-up. Individualized surgical treatment on the basis of patient age and anatomical factors can be undertaken with minimal perioperative risk and sustained durability. Long-term follow-up with noninvasive studies and imaging is recommended in light of the pediatric patient's overall health and predicted long life expectancy.

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