

Ductal aneurysm with postsubclavian coarctation of aorta in an adult

Dibya Ranjan Behera, Krishna Kumar Mohanan Nair, Bijulal Sasidharan

Department of Cardiology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India

ABSTRACT

We describe a case of ductal aneurysm in an adult patient with post subclavian coarctation of aorta, which is a very rare association.

Keywords: Angiography, coarctation of aorta, ductal aneurysm, post subclavian

A 41-year-old male with coarctation of aorta and systemic hypertension was evaluated with computed tomography (CT) angiography followed by cardiac catheterization and angiography, to assess the anatomy and pressure gradient. CT angiography demonstrated postsubclavian coarctation with minimum lumen diameter of 10.8 mm × 11.2 mm and focal anterior bulging of immediate coarctation segment and no collaterals [Figure 1]. Catheterization study showed pullback gradient of 24 mmHg across the coarctation segment. Aortic angiography confirmed postsubclavian coarctation with focal anterior bulging of immediate postcoarctation segment in the region of ductus arteriosus (DA) forming ductal aneurysm size of 23 mm × 20 mm [Figure 2].

Ductal aneurysm is a focal outpouching at the arterial end of DA. It is a rare condition and usually presents in neonatal age group. In a series of 24 cases of neonatal ductal aneurysm, Dyamenahalli *et al.* found that most are isolated entities and only seven had associated syndromes such as Marfan syndrome, Smith-Lemli-Opitz syndrome, trisomies 21 and 13, and Ehlers-Danlos syndrome.^[1] Hayashi *et al.* described a ductal aneurysm rapidly developing to a coarctation of aorta in a neonate.^[2] It is rare in adulthood and

its association with adult coarctation has never been reported. DA closes from its pulmonary end, and nonobliteration of aortic end of DA leads to the formation of ductal diverticulum. With subsequent transmission of high systemic pressures, it may enlarge to ductal aneurysm.^[3] Usually, it possess an obtuse angle with aortic wall with smooth margin.^[4-6] In the described patient as the coarctation is of moderate severity, the relatively high distal aortic pressure could have enlarged the ductal diverticulum to an aneurysm. On the contrary, if it was a tight coarctation, such large ductal aneurysm may not have been developed. This may be the reason for ductal diverticulum or aneurysms not being commonly reported with coarctation of aorta.

The most common differential diagnosis is aneurysmal dilation of the poststenotic segment of coarctation, which tends to be fusiform dilatation.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Behera DR, Nair KK, Sasidharan B. Ductal aneurysm with postsubclavian coarctation of aorta in an adult. *Ann Pediatr Card* 2017;10:310-1.

Access this article online

Quick Response Code:



Website:

www.annalspc.com

DOI:

10.4103/apc.APC_165_16

Address for correspondence: Dr. Bijulal Sasidharan, Department of Cardiology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram - 695 011, Kerala, India. E-mail: bijulalsasidharan@gmail.com

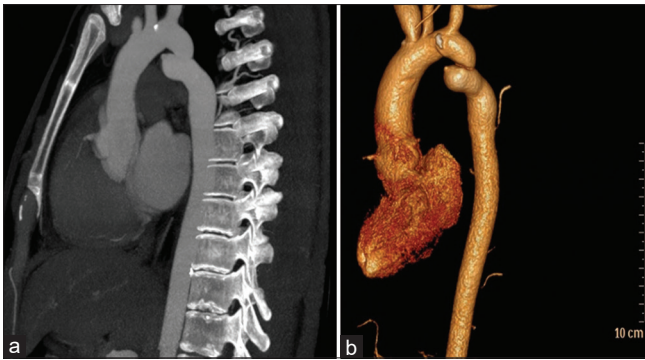


Figure 1: (a and b) Computed tomography scan showing discrete postsubarclavian coarctation of aorta with focal anterior bulging of ductus – ductal aneurysm

REFERENCES

1. Dyamenahalli U, Smallhorn JF, Geva T, Fouron JC, Cairns P, Jutras L, et al. Isolated ductus arteriosus aneurysm in the fetus and infant: A multi-institutional experience. *J Am Coll Cardiol* 2000;36:262-9.
2. Hayashi T, Yoshizawa H, Yoshikawa Y. A ductal aneurysm rapidly developing into coarctation of the aorta. *Eur J Cardiothorac Surg* 2013;43:1264.
3. Ohtsuka S, Kakihana M, Ishikawa T, Noguchi Y, Kuga K, Ishimitsu T, et al. Aneurysm of patent ductus

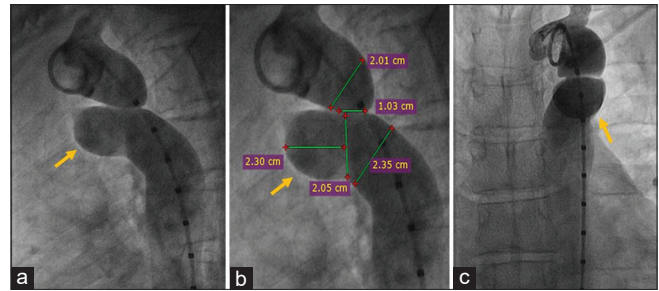


Figure 2: Aortic angiogram with marker pigtail *in situ*. (a) In lateral view, the discrete postsubarclavian coarctation of aorta with focal anterior bulging of the ductus forming ductal aneurysm. (b) The dimensions. (c) posteroanterior view. Arrow marks showing ductal aneurysm

- arteriosus in an adult case: Findings of cardiac catheterization, angiography, and pathology. *Clin Cardiol* 1987;10:537-40.
4. Kalisz K, Rajiah P. Radiological features of uncommon aneurysms of the cardiovascular system. *World J Radiol* 2016;8:434-48.
5. Goodman PC, Jeffrey RB, Minagi H, Federle MP, Thomas AN. Angiographic evaluation of the ductus diverticulum. *Cardiovasc Intervent Radiol* 1982;5:1-4.
6. Danza FM, Fusco A, Breda M, Bock E, Lemmo G, Colavita N. Ductus arteriosus aneurysm in an adult. *AJR Am J Roentgenol* 1984;143:131-3.