

Successful Treatment Of Tortuous Abdominal Aorta-Right Atrial Fistula by Vascular Plug: A Previously Unreported Cardiac Malformation



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INTRODUCTION

Aorta-right atrial fistula is a rare congenital anomaly characterized by a fistulous communication between the aorta and the right atrium. We report a child in whom a fistula connected the descending abdominal aorta to the right atrium. To the best of our knowledge, this is a previously unreported cardiac malformation. We were successfully closed by trans-catheter embolisation using an Amplatzer vascular plug IV.

CASE REPORT

A 2-year-old asymptomatic boy was referred to our institute for evaluation of a murmur. The physical examination was normal apart from a continuous murmur, which was best audible at the left upper sternal border. The electrocardiogram was normal with no evidence of volume overload or chamber hypertrophy. Chest X-ray showed no abnormalities. During echocardiographic examination, a small shunt from the proximal descending aorta to the main pulmonary artery was seen. The diagnosis of patent ductus arteriosus (PDA) was made. Left ventricle was slightly dilated with good function, intact ventricular septum, normal aortic and pulmonic valves, and normal aortic arch with no aortic coarctation but extra cardiac a structure as parallel to inferior vena cave was opened into right atrium (Fig. 1). Computed tomography angiography confirmed the diagnosis and delineated the anatomy (Fig. 2). Cardiac catheterization was done to confirm the diagnosis and possibly attempt closure of the PDA and aorto- right atrial fistula. Right and left heart catheterization were done and confirmed the diagnosis of the very small PDA, unusual communication and tortuous fistula, which originated from the descending abdominal aorta to the right atrium (Fig. 3). The fistula ended in a sac beside the junction of the inferior vena cava with the RA, which opened into the RA with a large orifice. The anomaly was successfully treated by closing the proximal of fistula using an Amplatzer vascular plug IV (Fig. 4).

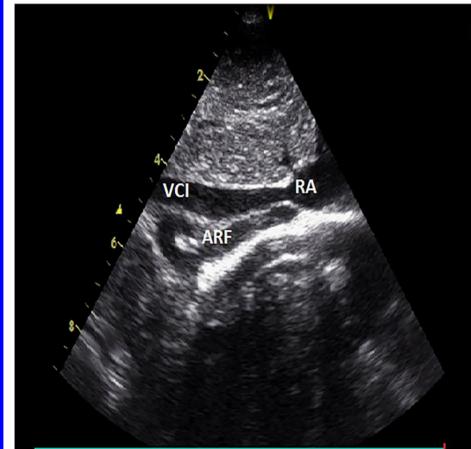


Fig. 1- Transthoracic echocardiogram, subcostal inferior vena cava view showing the aorto- right atrial fistula. IVC, inferior vena cava; RA, right atrium; ARF, aorto-right atrial fistula.

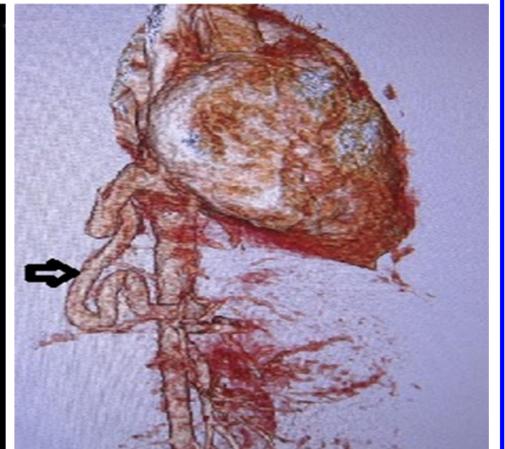


Fig. 2- Computed tomography angiography showing a tortuous, large and the very long fistula between abdominal aorta and right atrium (arrow).



Fig. 3-Abdominal aorta angiography in the anterior-posterior projection shows a tortuous fistulous tract was seen to arise from the abdominal aorta and opening into the right atrium (arrows).

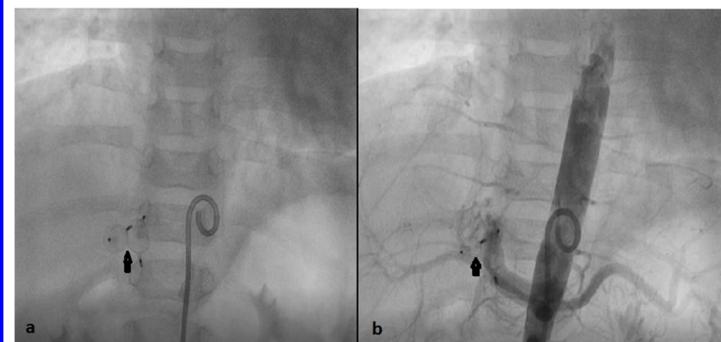


Fig. 4- a) Devices were deployed to Instead of the narrow and curved at a distance of about 5-6 mm from the proximal fistula, b) after detachment reveals no residual shunt. Arrow indicate the position of the Amplatzer vascular plug IV.

CONCLUSION

ARF is an very rare clinical problem. Various occlusion devices and techniques for device delivery are available. The choice of device and technique for any patient is based on many factors especially the anatomic characteristics of the fistula. We report successful closure of a tortuous ARF with Amplatzer vascular plug IV. The transcatheter closure of ARF with the Amplatzer vascular plug IV is technically feasible, easy and safe. The percutaneous closure of ARF with an Amplatzer vascular plug type device IV can be considered a therapeutic option in cases when the anatomy is favorable.

References:

1. Gajjar T, Voleti C, Matta R, Iyer R, Dash PK, Desai N. Aorta- right atrial tunnel: clinical presentation, diagnostic criteria, and surgical options. J Thorac Cardiovasc Surg. 2005;130:1287-92.
2. Ahmed F. Elwatidy, MD, FRCS, Ahmed N. Galal, MD, David Rhydderch, FRCA, and Abdullah K. Ashmeg, FRCS. Aorto-Right Atrial Fistula. Ann Thorac Surg 2003;76:929-31