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Management of the Congenital Aneurysm of the Left Ventricle Associated with Mitral Insufficiency in a Child: A Case Report

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ABSTRACT

The combination of congenital left ventricular aneurysm associated with mitral insufficiency is rare. We describe the case of a girl aged 11 years, bearing these two entities simultaneously. Aneurysmal resection of the left ventricle was performed with Dor technic to allow remodelation of the anatomy of the left ventricle. Mitral annuloplasty was performed through a transseptal approach. Three months after surgery, the child presents a good myocardial contractility without mitral regurgitation and normal ejection fraction.

Introduction

Congenital aneurysms of the left ventricle are uncommon entities. The largest series of these kinds of aneurysms that we found in the literature is 6 cases over a period of 11 years, described by Eloi Marijon *et al*. in 2006.[1] In addition, many cases of ventricular aneurysms have been described in children and from post-traumatic stress disorder. The first case was successfully treated by Green and colleagues in 1965.[2] The post-traumatic aneurysms appear days or weeks after thoracic trauma; while initial cardiac examination is generally negative or a simple contusion of the ventricular wall can be observed.[3-5]

True congenital aneurysm of the left ventricle is usually associated with other birth malformations such as ventricular diverticula, septal defect, malformation of the thoraco-abdominal aorta and other complications; however, it can also be alone.[1] The congenital aneurysms can be symptomatic or not symptomatic.

Some authors such as Okeene and colleagues, to prevent possible complications, recommend systematical surgical treatment in all cases after diagnosis.[6]

Clinical case

We present a 11 year old girl, without medical past history, which was taken to the hospital with her parents for a progressively worsening dyspnea. Clinical examination did not reveal any signs of right heart failure; only a systolic murmur in mitral focus could be auscultated. Chest X-ray showed a heart sabot with a cardiothoracic index of V2; however, the pulmonary vasculature appeared normal. Echocardiography revealed a dilated left ventricle with an acceptable ejection fraction associated with left ventricle aneurysm of the apical region (Figure 1). Mitral valve was associated with a moderate insufficiency. Chest MRI confirmed a large aneurysm supplied by a wide collar.

We found a protuberant aneurysm (Figure 2), and his aneurysmal sac was opened longitudinally, the collar was reduced and fixed with Dacron patch at the junction with the healthy area of the endocardium using a DOR technique and the mitral annuloplasty was performed through the cross-septal approach.

Discussion

There are two groups of left ventricular aneurysms in children, the first group concerns acquired aneurysms (traumatic) and the second is the congenital aneurysms which have not been sufficiently described in the literature.[1,6]

Congenital aneurysm of the left ventricle may appear as an isolated malformation or associated with other congenital anomalies. It is important to distinguish the congenital aneurysm and a congenital diverticulum of the left ventricle as these two entities may be confusing. Papagiannis and colleagues identified congenital aneurysms as the saccular expansions of the ventricular wall, with a wide collar, communicating with the ventricular cavity. However, diverticula are elongated and have a narrowed neck.[7] Generally postoperative course of diverticula seems

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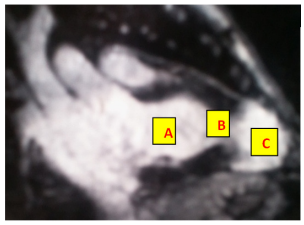

Figure 1. A- left ventricular cavity ; B-Collar of the aneurysm ; C-cavity of the aneurysm

simpler than the ventricular aneurysm.[1]

All authors agree with the surgical treatment when the aneurysm is symptomatic; however, controversy exists regarding the asymptomatic aneurysms. Some authors such as Okeene recommend a systematic resection to prevent complications such as thrombosis, rupture of the aneurysm, and left ventricular failure[6] while other authors such as Eloi and colleagues do not recommend routine resection due to the elevated mortality.

In our case, we performed a median sternotomy and found a large aneurysm of the apical region of the left ventricle associated with significant mitral regurgitation. Resection was performed under cardiopulmonary bypass with aortic clamping. The surgical technic was that of DOR (longitudinal opening of the aneurysmal wall, closing collar with a Dacron patch to reshape a ventricular anatomy and in the end we sutured the walls of the aneurysm above the patch). Mitral annuloplasty was performed through a trans-septal approach. Histological examination of the aneurysmal wall revealed a non-specific fibrosis. The patient was examined three months later. She was completely asymptomatic, and echocardiography showed normal cardiac contractility with Dacron patch in place (Figure 3).

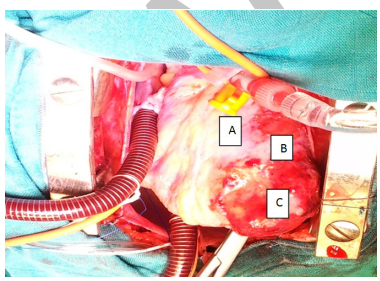

Figure 2. A- Left ventricular wall, B- Aneurysm collar, C- aneurysm wall.

In 2009, Jamshidi and colleagues reported good results in the treatment of ventricular aneurysm, in a 23-month-old girl with immunodeficiency syndrome using the same technic of DOR.[8]

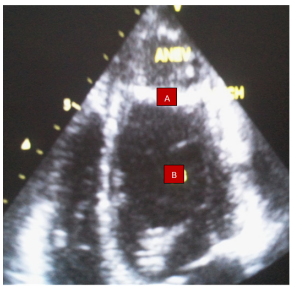

Figure 3. A- Dacron Patch; B- Left ventricular cavity

Conclusion

Symptomatic congenital aneurysms of the left ventricle must be resected routinely. Dor seems to be the best technic to remodel the left ventricular anatomy. Aneurysms should not be allowed to evolve as they accelerate the development of mitral insufficiency which in turn leads to left ventricular dysfunction.

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References

1. Eloi Marijon, Phalla Ou, Laurent Fermont, Susan Concordet, Jérôme Le Bidois, Daniel Sidi, et al. Diagnosis and outcome in congenital ventricular diverticulum and aneurysm. **J Thorac Cardiovasc Surg** 2006;131:433-7.

2. Green L, Oakley CM, Davies DM, Cleland WP. Sucessful repair of left ventricular aneurysm and ventricular septal defect after indirect injury. **Lancet** 1965;2:984-986.

3. Reginato E, Speroni F, Ricardi M, Verunelli F, Eufrate S. Post-traumatic mitral regurgitation and ventricular septal defect in absence of left pericardium. **Thorac Cardiovasc Surg** 1980;28:213-217.

4. Pretre R, Chilcott M. Blunt trauma to the heart and the great vessels. **N Engl J Med** 1997;336:626-632.

5. Stamm C, Feit LR, Geva T, Pedro J. Repair of ventricular septal defect and left ventricular aneurysm following blunt chest trauma. **Eur J Cardiothorac Surg** 2002;22(1):154-6.

6. Okeene OU, Cooley DA, Frazier OH. Congenital diverticulum of the ventricle. **J Thorac Cardiovasc Surg** 1986;91:208-14.

7. Papagiannis J, Van Praagh R, Schwint O, D'Orsogna L, Qureshi F, Reynolds J, et al. Congenital left ventricular aneurysm: clinical, imaging, pathologic, and surgical findings in seven new cases. **Am Heart J** 2001; 141:491-9.

8. Jamshidi R, Hornberger LK, Karl TR. Left Ventricular Aneurysm in a Child With Severe Combined Immunodeficiency Syndrome. **Ann Thorac Surg** 2009;88:1678-80.