

Aorto-left ventricular tunnel: Think about and treat early

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Introduction: Aorto-ventricular tunnels are rare, congenital, extracardiac channels between the ascending aorta and the cavity, mostly of the left ventricle (LV).

Depending on the size of the tunnel, symptoms vary between none and overt cardiac failure.

Echocardiography shows diastolic backflow from the aorta into the LV, leading to LV enlargement in spite of a normally developed aortic valve. We present two cases with aorto-LV tunnel diagnosed at different ages.

Case Reports: In the first patient, diagnosis was made in the 35th week of gestation and confirmed after birth by echocardiography. After an unremarkable postnatal adaptation, the newborn quickly developed cardiac failure and, on echo, progressive LV dilation and decreased contractility. Surgical repair with pericardial patch closure was performed at the age of 18 days without complications and with immediate normalisation of LV size and function. After a follow-up of 4.5 years, LV and aortic valve function is normal.

The second patient was assessed for a heart murmur at the age of 5 years, and diagnosis of aortic regurgitation was made. During follow-up, severe arterial hypertension with remarkably low diastolic blood pressure values and a progressive LV dilation due to regurgitant flow into the LV were documented at regular cardiologic examinations. Correct diagnosis of aorto-LV tunnel was finally established by a congenital cardiologist at the age of 15 years, as all clinical signs of aortic run off with severe LV dilation and a slightly reduced contractility were present (EF 50%). Cardiac surgery with patch closure of the aortic ostium and direct closure of the ventricular ostium was immediately initiated. The postoperative course was prolonged due to a moderately decreased LV function and postpericardiotomy syndrome. The patient was discharged on cardiac medication, and 6 months later LV size and function (EF 52%) are still abnormal with moderate aortic regurgitation present.

Conclusion: Aorto-LV tunnel is a rare lesion mimicking aortic valve regurgitation. Diagnosis should be suspected in the presence of LV dilation and severe run off in the aortic arch without obvious aortic valve lesions. Early diagnosis and surgical intervention prevent long term sequelae such as LV dysfunction.