

Right heart valve diseases

Right heart valve diseases includes tricuspid and pulmonary valve disease. Defects of these valves occur less frequently in adulthood than defects of the mitral or aortic valve. As with the left heart - **insufficiency** (**regurgitation**) or **stenosis** of the right valves may occur.

Stenosis prolongs the time to evacuate the ventricle or atrium, which is why patients with stenosis tolerate bradycardia better than tachycardia. In **regurgitation** (on the contrary) tachycardia is more advantageous in these patients in order to shorten the time when the blood flows back against the pressure gradient.

Compared to the 20th century, the etiology of valve defects has changed significantly. With the onset of antibiotic treatment, **valve diseases** have **decreased** significantly **due to rheumatic fever**, with the exception of developing countries. Thus, **degenerative disorders**, congenital disorders or **secondary disorders**, eg due to ventricular dilatation, predominate in the etiology of heart valve disease.

Echocardiography with Doppler examination now plays a crucial role in the diagnosis of not only right-sided valve defects. Thanks to this method it is possible to assess not only anatomical abnormalities but also their functional impacts (including pressure gradients).

Treatment methods currently consist of a surgical solution, but also of increasingly used interventional catheterization techniques. This is especially true for left heart valve involvement (TAVI, MitraClip, etc.)

Tricuspid regurgitation

Tricuspid regurgitation is caused by the insufficiency of the tricuspid valve between the right atrium and the right ventricle. Mild or trace tricuspid regurgitation is a common echocardiographic finding without hemodynamic effects. Significant insufficiency may be either primary or more often secondary due to pulmonary hypertension or left heart disease. Diagnosis is based on echocardiographic examination. Cardiac surgery still dominates in the treatment of major insufficiency, although various catheterization approaches are already being tested.

Tricuspid stenosis

Tricuspid stenosis is a rare valve defect, and regurgitation of the valve is much more common. Tricuspid stenosis is most often the result of rheumatic damage, usually with concomitant left heart valve involvement. Symptoms of right heart failure predominate in the clinical picture. The basic diagnostic method is **echocardiography**. Both percutaneous valvuloplasty and surgery are used in treatment.

Pulmonary regurgitation

Pulmonary insufficiency is the insufficiency of the pulmonary valve tips between the right ventricle and the lungs. Mild pulmonary insufficiency is a relatively common finding in contrast to severe pulmonary insufficiency, which is most commonly present in congenital heart defects and **pulmonary hypertension**.

Pulmonary stenosis

Pulmonary stenosis is a rare valve defect in adult cardiology. May occur alone or as part of a more complex stenosis in the right ventricular outflow tract, mainly the pulmonary area. More generally, pulmonary stenosis refers to both **pulmonary valve stenosis** and **subvalvula** or **supravalvular obstruction**. Diagnosis is based primarily on echocardiographic examination or catheterization examination to assess pressures.

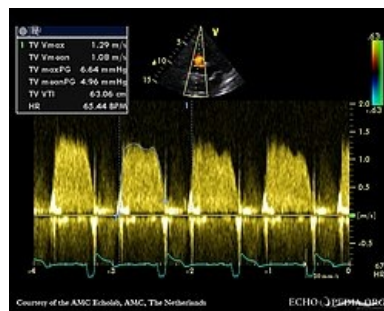
ECHO records of right valve defects



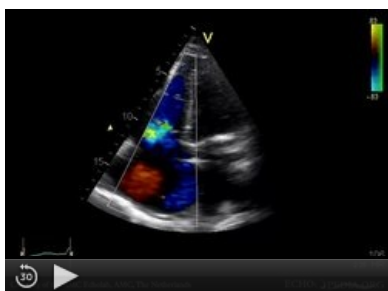
Doppler examination of pulmonary valve flow demonstrating severe pulmonary insufficiency (visible retrograde movement of blood through the valve)



Four-cavity apical projection with an example of tricuspid stenosis



Doppler measurement of pressure gradients on a tricuspid valve in stenosis



Echocardiographic evidence of severe tricuspid regurgitation (apical four-cavity projection)

References

Related articles

- Congenital heart defects
- Developed heart defects
- Tricuspid regurgitation
- Tricuspid stenosis
- Pulmonary insufficiency
- Pulmonary stenosis

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