

Left cardiac catheterization

Left-sided cardiac catheterization is the most accurate method of **coronary heart disease (CHD)**.

- Most often under sciascopic control retrogradely through the aorta and it's branches
- Under local anesthesia we puncture the femoral artery or radial artery → we insert the guidewire and the introducer (**Seldinger's technique**) → we insert our own diagnostic catheters through the introducer into the distance of the coronary artery extra et sinistra + into the left ventricle
- Unusually **left-sided transeptal catheterization**: the catheter is introduced through the femoral vein into the right atrium → we puncture the inter atrial septum and we penetrate the left atrium into the left atrium or left ventricle
- *Left heart catheterization includes:*
 1. **Selective coronarography + left ventriculography** – coronary artery injection + left ventricle with X-ray contrast agent
 2. **Tonometry** – test to measure the pressure inside your eyes. The test is used to screen for glaucoma. It is also used to measure how well glaucoma treatment is working.
 3. **Oxymetry** – taking blood from individual sections of the heart (determination of blood oxygen saturation) to detect short circuits

Coronary angiography

- Widely used method to assess coronary artery/ coronary artery bypass grafting
- We determine the degree of narrowing of the coronary artery - in % (lumen of the artery in the narrowed area/ in the nearest unaffected area)
 - **A narrowing of >50% is significant**
- *We also assess:* type of stenoses, presence of collaterals, calcifications, developmental abnormalities
- **Indications:** suspicion of severe coronary artery disease, assessment + differential diagnostic reasons after heart transplantation
- **Relative contraindications:** Active infection, severe anemia, disruption of the internal environment, severe uncontrollable Hypertension, bleeding, severe blood clotting disorders, patient disapproval of revascularization

Left ventriculography

- We determine the regional and global systolic function of the left ventricle
- Currently it can be replaced by ECHO → we perform it only in connection with selective coronarography
- *Evaluation of momentum of individual parts of the left ventricle:*
 1. **Normokinesis** (normal contractility),
 2. **Hypokinesis**,
 3. **Akinesis** (the monitored part of the left ventricle does not contract),
 4. **Dyskinesis** (abnormal arching of part of the left ventricular wall during systole),
- **Ejection fraction (EF)** – it expresses the global systolic function of the left ventricle; standard: >55%
- $EF = (EDV - ESV) / EDV \cdot 100\%$.

Complications of left heart catheterization

- **Local:** haemorrhage, hematoma, pseudoaneurysm, arteriovenous fistula at the femoral artery
- **Cardiac and general:** AIM, heart failure, arrhythmias, stroke, vagal reactions (hypotension+ bradycardia).

References

Related articles

- Right cardiac catheterization

References

- DÍŤĚ, P.. *Internal medicine*. 2. edition. Praha : Galén, 2007. ISBN 978-80-7262-496-6.

