Cardiomyopathy Overview

What is cardiomyopathy?

Cardiomyopathy is a problem with the heart muscle that can cause heart failure. There are 3 main types of cardiomyopathy:

- [Dilated cardiomyopathy]. The heart muscle gets weak. As the heart muscle weakens, it is less able to pump enough blood to the body. Because the heart can't pump as well, the main pumping chamber of the heart (the left ventricle) fills with blood and cannot empty. The extra blood in the left ventricle causes the heart muscle to stretch, just like a balloon expands when you put air into it. The heart slowly gets bigger over several weeks to months. The pressure in the heart never gets high enough to cause the heart to tear or pop.
- [Hypertrophic cardiomyopathy (HCM)]. The heart muscle cells get bigger. This makes the walls of the heart muscle thick. When the walls of the heart get too thick, the heart cannot pump well. Thick walls are usually very stiff, making it hard for the heart to fill with enough blood to pump. Some people with HCM develop a weak heart muscle over time. The weak heart muscle can slowly change to be dilated cardiomyopathy.
- [Restrictive cardiomyopathy.] The heart muscle gets very stiff. This may be caused by deposits (like iron) that build up in the heart muscle, or scars that form on the inside of the heart. The stiffness makes it hard for the heart to fill with blood and pump properly. This is the least common kind of cardiomyopathy.

How does it occur?

The heart muscle may be weakened by many things. Coronary artery disease (CAD) causes poor blood supply to the heart and may hurt the heart muscle, making it weak. This is the most common cause of dilated cardiomyopathy. Cocaine or heavy alcohol use can weaken the heart muscle. Some medicines used to treat cancer are deadly to heart muscle cells and can weaken the heart.

Often what causes the heart to enlarge and weaken is not known. When the cause is not known, it is called idiopathic dilated cardiomyopathy.

HCM may be caused by high blood pressure. High blood pressure makes the heart pump harder. The walls of the heart enlarge just like the muscles of a weight lifter get bigger. When high blood pressure goes untreated for many years, the heart muscle will get thicker and you may develop hypertrophic cardiomyopathy. HCM often runs in families. It may be caused by abnormal proteins that control heart muscle growth. The heart tries to make up for

this by enlarging, becoming thick and deformed.

Many diseases, including some cancers and infections can cause restrictive cardiomyopathy. These diseases cause scar tissue to build up on the inner surface of the heart or within the walls of the heart. This scarring keeps the heart from filling with blood fully, so it cannot pump properly.

What are the symptoms?

Cardiomyopathy may not cause symptoms. If it does, the symptoms may include:

- chest pain
- shortness of breath with physical activity
- waking up short of breath
- swelling of the legs or ankles
- dizziness
- fainting.

How is it diagnosed?

Your healthcare provider will ask about your symptoms, examine you, and listen to your heart. You may have:

- chest X-rays
- electrocardiogram (ECG), which is a recording of your heart's electrical activity
- echocardiogram (an ultrasound scan of the heart), which can show areas of heart muscle that are thick.

You may also need to wear a Holter monitor. A Holter monitor is used to record your heart rhythm for at least 24 hours.

Because the disease may run in families, your healthcare provider may suggest testing other members of your family.

How is it treated?

Treatment depends on the type of cardiomyopathy you have and what caused it.

Medicines such as beta blockers or calcium channel blockers may be used to relax the heart muscle. Your healthcare provider may prescribe a drug called a vasodilator. It makes the blood vessels open up. The increased size of the blood vessels lets more blood to flow through them. This lowers blood pressure slightly so the heart does not have to work as hard. ACE inhibitors are another type of medicine

that can relax blood vessels and lower blood pressure. This helps the heart to pump more blood out to the body.

Your healthcare provider may also prescribe a blood thinner (anticoagulant). Blood thinners help to keep the blood from clotting and prevent artery blockages and strokes.

Procedures that may be used to treat cardiomyopathy include:
- myectomy (muscle removal). In some case, this can be done with a heart catheter and surgery is not required.
- implanting an artificial pacemaker or a cardioverter-defibrillator (ICD) to treat abnormal heart rhythms.

Written by Edward Havranek, MD, for RelayHealth

Published by RelayHealth.