
Implantable cardioverter-defibrillator

Definition

An implantable cardioverter-defibrillator (ICD) is a device that detects any life-threatening, rapid heartbeat. If such a heartbeat, called an arrhythmia, occurs, the ICD quickly sends an electrical shock to the heart to change the rhythm back to normal. This is called defibrillation.

Alternative Names

ICD; Defibrillation

Description

An ICD is made of these parts:

- The pulse generator is about the size of a large cookie. It contains a battery and the electrical circuits that read the electrical activity of your heart.
- The electrodes are wires, also called leads, that go through your veins to your heart. They connect your heart to the rest of the device. Your ICD may have 1, 2, or 3 electrodes.
- All ICDs have a built-in pacemaker. Your heart may need pacing if it is beating too slowly or too fast, or if you have had a shock from the ICD.

A surgeon will insert your ICD when you are awake. The area of your chest wall below your collarbone will be numbed with anesthesia, so you will not feel pain. The surgeon will make an incision (cut) through your skin and create space under your skin and muscle for the ICD generator. Usually this space is made near your left shoulder.

Using special x-ray to see inside your chest, the surgeon will place the electrode into a vein, then into your heart. Then the surgeon will connect the electrodes to the pulse generator and pacemaker.

The procedure usually takes 2 to 3 hours.

Risks

Risks for any surgery are:

- Blood clots in the legs that may travel to the lungs
- Breathing problems
- Heart attack or stroke
- Allergic reactions to medicines (anesthesia) used during surgery
- Infection

Possible risks for this surgery are:

- Wound infection
- Injury to your heart or lungs
- Dangerous heart arrhythmias

An ICD sometimes delivers shocks to your heart when you do not need them. Even though a shock lasts a very short time, you can usually feel it.

This and other ICD problems can sometimes be prevented by changing how your ICD is programmed. It can also be set to sound an alert if there is a problem. Your electrophysiologist, the doctor who manages your ICD care, can program your device.



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