The Catholic Doctor is In: Put on your LifeVest

During a heart attack, there is a significant risk of dying from fatal cardiac arrhythmias (cardiac arrest). This is one of the main reasons we teach people to call 911 when having symptoms of a heart attack. The quicker you get to the hospital, the better the chance that we can prevent death. The first hour after the heart attack begins is the most common time that your heart can suddenly go into a potentially fatal arrhythmia (ventricular tachycardia or ventricular fibrillation). Unless you are shocked (cardioverted) promptly, you will likely die.

How much permanent damage the heart sustains during a heart attack is controlled by many variables. One of the most important variables is how quickly the cardiology team gets you to the cardiac catheterization laboratory and opens the blocked coronary artery.

There are some people who have no detectable permanent heart damage by the time they go home, but there are others who appear to have sustained major damage to the heart (left ventricular dysfunction). Allow me to get a little technical.

The normal left ventricle pumps out between 55 percent and 70 percent of the blood that enters its chamber. A normal or average ejection fraction is usually quoted to be about 60 percent. It has been shown by scientific studies that if left ventricular function is reduced to an EF of 35 percent or less, there is a significant risk for fatal cardiac arrhythmias going forward. It is these people whose hearts are still severely weakened at the time of discharge from the hospital who are at the highest risk for sudden death. But, given more time, many of these hearts are still capable of recovery.

To protect these people during this interim period, a temporary wearable cardioverter defibrillator called a LifeVest was devised. It provides temporary protection after the patient returns home. The LifeVest is a tightly fitting jacket, worn with pads over the heart, connected to high power batteries. The heart is constantly monitored, and if a cardiac arrest occurs it automatically shocks the heart back to a normal rhythm and saves the day!

The overall plan is to wear this LifeVest for a few months, and if the heart recovers to an EF of over 35 percent then it is discontinued. For those people whose heart does not recover, we then discuss the option of an Implantable Cardioverter Defibrillator. An ICD is implanted just like a pacemaker. The brains of the device are the electronics inside a metal casing that is about the size of a pocket watch. Most this casing is taken up by high powered batteries.

The device is then implanted below the collarbone. A special wire, or "lead," is advanced through a vein into the right ventricle, where it can monitor the heart rhythm

continuously. This wire has coils in the proximal and distal portion, and if the heart goes into a potentially fatal arrhythmia this fact is quickly recognized. A shock is then sent from coil to coil across the heart, converting the arrhythmia back to a normal heartbeat. ICDs have saved countless lives over the last 20 years.

As I wrote this article, I could not but help to recall another protection we carry with us, as described in Ephesians 6: "Put on the armor of God so that you may be able to stand firm against the tactics of the devil. Our battle is not against human forces but against the principalities and powers, the rulers of this world of darkness, the evil spirits in regions above. You must put on the armor of God if you are to resist on the evil day; do all that your duty requires and hold your ground. Stand fast, with the truth as the belt around your waist, justice as your breastplate, and zeal to propagate the gospel of peace as your footgear." Now that's a great LifeVest!

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