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Patients with congestive heart failure also suffer from a variety of other cardiac problems besides the weakness of their heart muscle. Hence, a variety of surgical options are available to improve the overall heart function and to prolong life in certain individuals.

The surgical procedures that are aimed at the heart rhythm could include pacemakers and defibrillators.

Pacemakers

Patients with advanced heart failure may develop abnormalities in cardiac rhythm such as atrial fibrillation, sick sinus syndrome, heart blocks. Atrial fibrillations can seriously compromise the failing heart function. Some patients may undergo radiofrequency ablation to restore the normal sinus rhythm. This procedure is done in the cardiac catheterization where several catheters are placed to map the electrical activity of the heart. Certain areas in the heart muscle where abnormal electrical activity is noted are frozen using catheters that deliver radio-frequency waves. This procedure is known as RF ablation. It is very effective

in atrial flutter, regular supraventricular tachycardia, and also in atrial fibrillation.

Cardiac resynchronization devices

More than 50% of the patients may have heart rhythm and electrical conduction problems that can cause asynchrony in the contraction of the right and the left side of the heart thus reducing the overall heart efficiency. These people may benefit from biventricular pacemaker that restores cardiac synchronization and improves the cardiac performance. Here both the ventricles are made to contract at the same time by pacing both ventricles at the same time.

Implantable cardiac defibrillators

Ventricular arrhythmias may pose a serious hazard in patients with congestive heart failure, including rare cases of sudden death. Patients with left ventricular ejection fractions of less than 35% are especially prone for such arrhythmias. These patients may benefit from implantable defibrillators [ICDs]. These devices shock the heart in the event of serious ventricular arrhythmias to restore the normal rhythms. They are miniature version of devices used on the planes and in the hospital to shock people who are in cardiac arrest. However, since the device is inside the body and connected to the heart with a wire, the amount of energy released is very small.

None the less, when this device goes off, patients can feel a jolt coming from within the chest.

Valve replacement

Some patients may have severe valve leak such as mitral regurgitation or aortic regurgitation that can lead to heart failure. In such patients replacement of heart valve can present further deterioration in the heart function. Basically, there are two kinds of valves, namely mechanical and bioprosthetic. All patients receiving mechanical valves have to be on blood thinner such as warfarin that requires regular blood checks to monitor its effectiveness. Most patients who receive the bioprosthetic valves may not need the blood thinner.

Aneurysm resection

Some patients with a history of previous heart attack may develop thinning and stretching of the heart muscle to a point where that area instead of contracting with each heart beat, bulges outward thus reducing the pumping efficiency of the heart. If a patient is going for bypass surgery to improve the circulation, the surgeon may also resect the scar tissue and reduce the left ventricular size to improve the heart function. People who have triple vessel disease with heart failure do better after bypass compared to those who are treated with medicines alone.

Left ventricular assist device

Patients with advanced heart failure, who can barely maintain blood circulation at rest, may need additional support to just sustain life. Such patients may benefit from an artificial pump called the Left Ventricular Assist Device [LVAD] that is attached to the tip of the left heart chamber. This device pumps the blood forward with each heart beat. The modern devices can pump as much as 5 liter of blood per minute to sustain life. However, this is a temporary measure in patients with severe heart failure who are waiting for a donor heart transplant. None the less, these devices have been left in place for months in some patients with reasonable success. Since it is a foreign object, there is increased risk of infection or blood clot formation.

Heart transplant

Younger people with severe failure, who fail to respond to maximum medical treatment, may be candidates for heart transplant. However, the transplant process cannot be taken lightly. It is a very intense process where all systems such as kidneys, lungs, liver etc are evaluated along with the psychological assessment, social support to determine the eligibility for heart transplant. This may take 18 to 24 months. In addition, the patients should not have any debilitating diseases. When a donor heart does become available, the donor heart is

removed from the body and placed in an ice box to preserve the heart muscle and is transported to the recipient's place where the recipient's chest is being prepared to receive the donor heart. At this time, the recipient's left and the right ventricles are removed leaving only a part of the atria or the upper chambers. The donor's atria are sutured to the recipient's atria to establish a closed circuit. There are challenges after the heart transplant, the most significant of which is the rejection of the donor heart. Anytime, there is a foreign object in the body, there is a tendency for the body to reject it. Hence, these patients need to be on drugs to prevent rejection.

Experimental treatments

Some procedure such as wrapping the heart in a mesh bag to prevent the heart from enlarging and reducing the left ventricular size by resecting segments of the walls are being evaluated as alternative treatments.

Disclosure: Information provided here is for educational purpose only. Please consult with your physician for any medical advice.

visit www.sugarlandheartcenter.com for a more comprehensive information on heart diseases.”

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