

Cardiac Stent: Preventive Measure for Cardiac Arrest

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DESCRIPTION

Stents are used to treat blocked or narrowed coronary arteries. This is a tiny tube that plays a big role in treating heart disease. Immediately after a heart attack, it helps keep arteries (blood vessels that carry blood from the heart to other parts of the body) including the heart muscles open. A cardiac stent is an expandable coil which is made up of a wire mesh and is permanent, while some are made up of fabric. These are called stent grafts and are usually used for larger arteries. Others are made up of materials that dissolve and are absorbed by the body over time. Coronary arteries deliver oxygen-rich blood to the heart muscles. Over time, plaque builds up in the coronary arteries and can restrict the blood flow through them; this condition is called as Coronary Heart Disease (CHD) and can cause chest pain, which can damage the heart muscles. Plaque which is build-up of cholesterol, fat, and other substances in the blood, can also cause blood clots that block blood flow to the heart, putting you at a risk of causing heart attack. Stent may be inserted during coronary angioplasty, which is a non-surgical, minimally invasive procedure. This device is designed to support arterial walls, keep arteries open, and improve blood flow to the heart. Angioplasty with stent placement is usually recommended for those who have only one or two blocked arteries. If the person has two or more blocked arteries, bypass surgery will be the better option.

A doctor can insert a cardiac stent under a local anesthesia. To insert the stent, a small cut is made in a blood vessel in the arm or neck. A catheter with a stent and balloon at the tip is then inserted. A special dyes and monitors are used to guide a catheter through a blood vessel into a narrowed or blocked coronary artery. When the stenosis or blockage area is reached, the balloon is inflated. This expands the stent, stretching the artery and increasing blood flow. Finally, the balloon is deflated,

the catheter is removed, and the stent is left behind. During this procedure, the filter prevents plaque and blood clots from breaking up and floating freely in the bloodstream. After the procedure, you will need to take medication to prevent clotting within the stent. As the artery begins to heal, your own tissue begins to fuse with the stent's mesh, strengthening the artery. A specific type of stent called a Drug-Eluting Stent (DES) may be used. Drug-eluting stents are artificial blood vessels used by interventional cardiologists to reopen and preserve coronary arteries narrowed by arteriosclerosis. In some cases, if tissue grows excessively around the stent, the stenosis can block the artery again and cause restenosis, so it is coated with a drug to reduce the risk of restenosis. Bleeding on the spot where the catheter is inserted, damage to blood vessels by the tube, infection, allergic reactions, irregular heartbeat, kidney damage, are some of the risk factors when the stent is inserted.

After the stent is placed, aspirin or another drug are prescribed to be taken to prevent forming blood clots. In addition to pain relief, reducing fever and inflammation, aspirin can also prevent from forming blood clots. Blood clots are the main cause of heart attacks and strokes, are caused when plaque (cholesterol and other substances that build up in the walls of arteries) ruptures and the body tries to hold the damage by forming blood clots. If an artery is already narrowed by plaque build-up, a blood clot can block the vessel and stop blood flow to the brain and heart. Regular use of aspirin reduces the blood's ability to form clots by targeting the body's smallest blood cells. They are called platelets and bind together when they encounter damaged blood vessels. Aspirin's "blood-thinning" properties can help prevent heart attacks and strokes. Daily use of aspirin can reduce the risk of heart attack, blood clot-related stroke, and heart attack in patients with cardiovascular disease or those who have had a previous heart attack or stroke.

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