Coronary stenting: Procedure, risks, and benefits.

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Abstract

One of the leading causes of morbidity and mortality is coronary artery disease. This is a condition characterized by narrowing of arteries due to plaque buildup. The standard treatment for this disease is the insertion of a stent into the affected area. This life-saving tubular device supports blood vessels and keeps blood flow pathways open to deliver vital nutrients and oxygen to the heart muscle. Several generations of stents have been repeatedly developed to improve patient outcomes and reduce unwanted post-implantation side effects. This field of research is constantly evolving, moving from bare metal stents to drug-eluting stents and more recently to bioresorbable stents.

Keywords: Blood vessel prosthesis implantation, coronary stent infections, Coronary stents.

Introduction

A coronary stent (CS) is an expandable tubular metal device that is inserted into a coronary artery that is narrowed due to underlying atherosclerosis. This revascularization is called percutaneous coronary intervention or coronary angioplasty with stent placement. In the pre-stent era, balloon angioplasty was the mainstay of coronary revascularization, in which balloon-tipped inflatable catheters were percutaneously inserted through arterial ostial sites in extremities and advanced into the coronary arteries.

Once in the coronary artery, the balloon was inflated to press the atherosclerotic plaque against the vessel wall and restore blood flow to the myocardium. After deflation, the balloon was withdrawn. This method had major drawbacks: B. Acute vascular occlusion due to arterial recoil, coronary artery dissection, acute arterial thrombosis, and restenosis due to neointimal hyperplasia. With the advent of coronary stents, the expandable metal mesh of stents eliminated coronary artery dissection and vascular recoil and prevented negative remodeling [1,2].

Coronary artery stenting is a medical procedure used to treat patients with coronary artery disease (CAD) caused by plaque buildup in the arteries that supply the heart. In coronary stenting, a small mesh tube called a stent is inserted into a blocked or narrowed artery to keep it open and allow blood to flow freely [3].

This procedure is performed by a specially trained cardiologist in a hospital or clinic. Before the procedure, people are usually given drugs to help them relax and a local anesthetic is used at the site where the stent will be placed. In some cases, general anesthesia may be used. During the procedure, a cardiologist inserts a thin, flexible tube called a catheter into an artery in the groin or wrist and guides it to areas of blocked or narrowed coronary arteries. A small balloon at the end of the catheter is then inflated to push the plaque against the artery wall and widen the opening. Once the artery is open, a stent is inserted and expanded to keep the artery open and allow blood to flow freely. Coronary stenting is a minimally invasive procedure that can be performed on an outpatient basis, allowing patients to go home the same day. It is usually used to treat moderate to severe CAD patients who have symptoms such as chest pain and shortness of breath, or who are at risk of heart attack [4].

One of the major advantages of coronary stenting over other treatments for CAD is that B. Bypass surgery is less invasive and has a shorter recovery time. Patients who have had coronary artery stenting can usually return to normal activity within days, whereas those who have had bypass surgery may take weeks or months to fully recover. I have. However, coronary stents are not without risks. In some cases, the stent may become clogged or narrowed again, requiring additional surgery or medication. There are also risks of bleeding, infection, and damage to arteries during surgery. Patients receiving coronary stents must take medications, such as blood thinners, to prevent blood clots from forming around the stent [5].

Conclusion

Coronary stenting is an effective, minimally invasive procedure for treating patients with coronary artery disease. Although this is a safe and effective treatment option for many patients, it is important to understand the risks and benefits before undergoing the procedure. Patients considering the use of coronary stents should consult with their physician to determine whether this is an appropriate treatment option.

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