

## Treatment for Severe Coronary Artery Disease

Many people are unaware that they have severe coronary artery disease. These people have silent ischemia, a lack of blood supply and oxygen to heart muscle without experiencing pain. They may suffer from a heart attack with no prior warning. Studies have shown that 30% of patients with heart attacks died suddenly. Many patients are surprised to know that they had the most severe forms of coronary artery disease such as left main stem and triple vessel disease at their regular cardiac checkups. Fortunately, with the advancement in medical technology and technique, even these severe forms of coronary artery disease can be treated by minimally invasive procedures.



**Dr. Adam Leung**  
Specialist in Cardiology

Traditionally coronary artery bypass graft surgery (CABG) was considered to be the preferred therapy in patients with left main stem and triple vessel disease. However, percutaneous coronary intervention (PCI) or commonly called coronary angioplasty in addition to stenting has been used to treat obstructive coronary artery disease for over 30 years. With the advance in technology and expertise, this less invasive technique is the therapy of choice for patients with severe coronary artery disease.

In the past decade, there have been dramatic advances in PCI techniques, devices, and medications. Drug-eluting stents are among the most notable development. These stents not only keep the artery open, they also slowly release medication that can prevent the overgrowth of scar tissue at the stented segment which can cause re-narrowing of the artery, a complication known as restenosis. Today, with the improvement in drug-eluting stent technology, PCI can also be used to treat even the most severe forms of left main stem or triple vessel disease.

Advantages of PCI include its minimally invasiveness which requires only local anaesthesia, a small wound site (2mm), short hospital stay and prompt recovery. At the present time, PCI is utilized to treat over 90% of patients with severe coronary artery disease. Although CABG is an open heart surgery, it is considered the conventional choice of therapy in patients with left main stem and triple vessel disease because of its proven survival benefit.

This past February, a large international study was published which randomized clinical trials comparing PCI using drug-eluting stents versus CABG in patients with left main stem and triple vessel disease. This study involved 1800 patients divided into 2 groups - one received PCI and the other CABG. At the end of one year study, there was no difference in mortality (PCI 4.3% vs. CABG 3.9%) and heart attack rate (PCI 4.8% vs. CABG 3.2%). The stroke rate was about 4 times higher in patients who received CABG (PCI 0.6% vs. CABG 2.2%). The repeat procedure rate was about 2 times higher in patient with PCI (PCI 13.5% vs. CABG 5.9%).

This study further cements the role PCI plays in treating patients with severe coronary artery disease. With its much lower stroke rate, similar heart attack and survival rates, most patients may choose PCI as their therapy because of its minimally invasiveness despite the higher chance of a repeat procedure.

Regular cardiac checkups will pick up important risk factors with the aim of lifestyle and medical modification in order to prevent coronary artery disease. Even if silent severe coronary artery disease is detected during these checkups, we can now treat the ailment safely and effectively.