

Clinical Cardiology :CABG in diffuse coronary artery disease (CAD) -Shyam Krishnan Ashok -Aster Ramesh Group of Hospitals

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Statement of the problem: In India 2.78 million deaths are due to cardiovascular diseases of which 50% are due to CAD. Peculiarities of CAD patterns in Indian patients younger age at presentation, high incidence of double vessel disease (DVD) and triple vessel disease (TVD), diffuse involvement, distal disease and significant left ventricular (LV) dysfunction at presentation.

Diffuse CAD: Length of significant stenosis > 20 mm, multiple significant stenosis (> 70% narrowing) in the same artery separated by segment of apparently normal vessel and significant narrowing involving the whole length of coronary artery.

Methodology: We in our institute perform Off Pump Coronary Artery Bypass (OPCAB), use left internal mammary artery (LIMA) and veins as conduits to perform the surgery. Once the conduits are harvested, we heparinize with I.V. Heparin 3 mg/Kg given to achieve an ACT >300. Using the octopus as stabilizer, we perform an endarterectomy of the left anterior descending (LAD) first and then use a vein patch to cover the defect. LIMA is then used to anastomose the LAD on the vein patch. Veins are used to bypass the Left Circumflex (LCX) and right coronary artery (RCA), as deemed appropriate. The proximal ends of the vein grafts are anastomosed to Ascending Aorta with side clamp and heart beating. Intraop we start Lomodex infusion 20ml/hr which is continued for 24 hours and the inotropes used are Adrenaline and Dobutamine as and when necessary. Postoperatively aspirin 75mg is given and Heparin infusion started after 6hours to maintain activated clotting time (ACT) of around 150 for 24 hours. Patients are usually extubated after 4 hours provided they are hemodynamically stable. Anticoagulation by Acitrom is commenced orally from day 1 to maintain an INR of 2 for 3 months. Your heart may be a strong muscular pump that's liable for moving about 3,000 gallons of blood through your body a day. Like other muscles, your heart requires endless supply of blood to figure properly. Your cardiac muscle gets the blood it must do its job from the coronary arteries. arteriacoronaria disease is that the narrowing or blockage of the coronary arteries, usually caused by atherosclerosis. Atherosclerosis (sometimes called "hardening" or "clogging" of the arteries) is that the buildup of cholesterol and fatty deposits (called plaques) on the inner walls of the arteries. These plaques can restrict blood flow to the guts muscle by physically clogging the artery or by causing abnormal artery tone and performance. The American Heart Association (AHA) estimates that somebody within the US features an attack about every 40 seconds. Additionally, for patients with no risk factors for heart condition, the lifetime risk of getting disorder is 3.6% for men and less than 1% for ladies. Having 2 or more risk factors increase the lifetime risk of disorder to 37.5% for men and 18.3% in women. Unstable angina could also be a replacement symptom or a change from stable angina. The angina may occur more frequently,

occur more easily at rest, feel more severe, or last longer. Although this will often be relieved with oral medications (such as nitroglycerin), it's unstable and should reach an attack. Usually, more intense medical treatment or a procedure is required to treat unstable angina. Non-ST segment elevation myocardial infarct (NSTEMI) this sort of attack, or MI, doesn't cause major changes on an electrocardiogram (ECG). However, chemical markers within the blood indicate that damage has occurred to the guts muscle. In NSTEMI, the blockage could also be partial or temporary, therefore the extent of the damage is typically relatively small. Ischemia may be a condition described as "cramping of the guts muscle." Ischemia occurs when the narrowed arteriacoronaria reaches some extent where it cannot supply enough oxygen-rich blood to satisfy the heart's needs. The guts muscle becomes "starved" for oxygen-rich blood to satisfy the heart's needs. The guts muscle becomes "starved" for oxygen. Ischemia of the guts are often compared to a cramp within the leg. When someone exercises for a really while, the muscles within the legs cramp up because they're starved for oxygen and nutrients. Your heart, also a muscle, needs oxygen and nutrients to stay working. If the guts muscle's blood supply is insufficient to satisfy its needs, ischemia occurs, and you'll feel pain or other symptoms. The fat and other substances combine to make a cloth called plaque. Over time, the within of the arteries develop plaques of various sizes. Many of the plaque deposits are crazy the within with a tough fibrous "cap" covering the surface. If the pave cracks or tears, the soft, fatty inside is exposed. Platelets (disc-shaped particles within the blood that aid clotting) come to the world, and blood clots form round the plaque. The endothelium also can become irritated and fail to function properly, causing the muscular artery to squeeze at inappropriate times. This causes the artery to narrow even more. Sometimes, the grume breaks apart, and blood supply is restored. In other cases, the grume (coronary thrombus) may suddenly block the blood supply to the guts muscle (coronary occlusion), causing one among three serious conditions and called acute coronary syndromes.

Result: Out of the 20 patients in last 18months outcomes have been excellent with no in-hospital mortality or cerebrovascular incidents.

Conclusion: Off pump CABG (Coronary Artery Bypass Grafting) with coronary end-arterectomy offers a good solution to the problem of diffuse coronary artery disease.

Biography

Shyam Krishnan Ashok, after completing his MBBS and MS in General Surgery, did his MCh in CVTS from Seth GS Medical College, Mumbai in 2008. He later joined NarayanaHrudaya- laya, Bangalore in 2008, which is a 1000 bedded hospital exe- cuting close to 600 open heart surgeries in a month. He worked as a Fellow in Adult Cardiothoracic department in Royal Mel- bourne Hospital, Australia, which is the second largest cardio- thoracic unit in the whole of Australia. After working in Australia for 2 years he rejoinedNarayanaHrudayalaya,

as a Consultant Cardiothoracic Surgeon in 2012 and worked there till 2015. He has independently performed about 1000 open heart surger- ies, consisting of Coronary Artery bypass surgeries and Valve Replacements. His area of interest is Coronary Artery Bypass, especially Total Arterial Revascularization. He joined Aster CMI Hospital in Feb 2016 as Consultant Cardiothoracic Surgeon.

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