

CORONARY ARTERY BYPASS GRAFT SURGERY



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March 2014 ICN #



آغا خان یونیورسٹی ہسپتال، کراچی

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Why Cardiac Surgery?

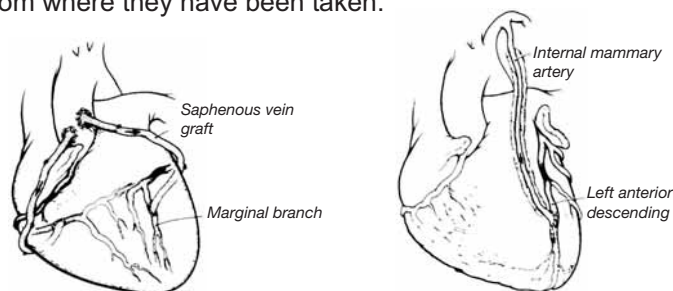
The purpose of Coronary Artery Bypass Graft (CABG) Surgery is to improve blood flow to the heart. More blood flow should eliminate chest pain or angina pectoris that comes with exercise and in some patients, even at rest. CABG improves quality of life and exercise capacity. Other benefits include reducing the need for medication and restoring a sense of well-being. In persons with certain types of severe coronary artery disease, life is prolonged. The operation has been shown to prevent life threatening heart attacks.

This booklet will help you understand how care is delivered to you by a highly skilled team of doctors, nurses and technicians before, during and after your Open Heart Surgery. It is this teamwork, with your help that will ensure that you get the most benefit from your surgery.

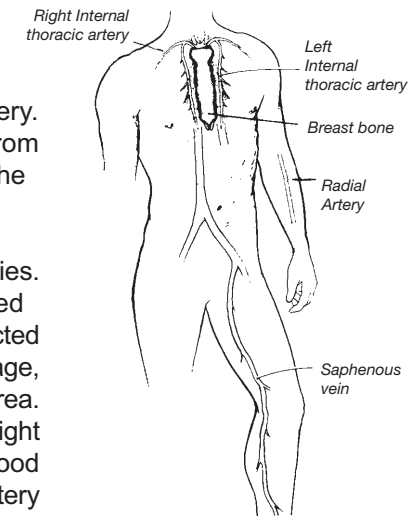


What is Coronary Artery Bypass Graft Surgery?

Coronary Artery Bypass Graft Surgery is an open heart operation, in which arteries or veins are taken from another part of the body to channel the needed blood flow to the coronary arteries. The arteries and veins used in the operation are expendable; removing them does not significantly affect the flow from where they have been taken.



Typically, the artery that is used is on the inside of the chest alongside the breast bone, called the internal mammary (IMA) or internal thoracic artery. The vein that is usually used, comes from just beneath the skin on the inside of the leg, called the saphenous vein. During surgery, these arteries or veins are connected directly to the coronary arteries. One end of the vein or artery is attached to the aorta and the other end is connected to the coronary artery beyond the blockage, bypassing the narrowed or obstructed area. In some cases, other vessels, e.g. the right gastroepiploic artery which supplies blood to the stomach, the inferior epigastric artery from the abdominal wall or arm veins are used as bypass conduits.



What will Coronary Artery Bypass Graft Surgery accomplish?

Coronary Artery Bypass Surgery is performed to improve blood supply to the heart. The ultimate aim of this operation is to improve patient's quality of life by relieving angina in the vast majority of cases. It not only improves the patient's symptoms like chest pain or occasional difficulty in breathing but also protects the heart against a potential risk of a massive heart attack.

Will My Heart Disease be Cured once I have had Bypass Surgery?

Bypass surgery is not a cure for heart disease. It is a form of treatment that relieves symptoms and improves the quality of life for many patients. Coronary artery disease is a steadily progressive illness and may eventually clog the remaining arteries of the heart as well as the bypasses. It is essential that you reduce your risk for heart disease by controlling your heart-risk factors. This will ensure that you get the best long-term result from your bypass surgery.

Preparing for Surgery

It is natural to feel anxious and nervous, once the decision is made to have Coronary Artery Bypass Graft Surgery. Such worries will often be reduced if you understand the need for the operation, meet the members of the professional team and have your questions answered. Aspirin is generally stopped ten days before to prevent troublesome bleeding during surgery. Pre-operative breathing exercises will ease the recovery process after surgery. A visit to the anaesthesiologist is desirable before admission.



What about the Hospital admission ?

Usually, a patient is admitted to the Hospital with enough time before the operation date to allow diagnostic tests to be done. These include, blood and urine tests, electrocardiogram (ECG), chest X-ray and breathing tests. Cardiac Catheterization with coronary angiogram must have been done before the surgery or during the pre-operative Hospital stay. When these tests have already been done, the patient may be admitted to the Hospital a night before the surgery.

Who will Visit me Prior to the Operation?

The anesthetist will come and visit you, with the objective of evaluating your cardiac status as well as any other medical problems. He/she will explain and discuss the plans which they carry out to care for all your body functions during the surgical procedure. He/she will try and reduce your fears and anxieties about surgery and the postoperative period, with special emphasis on the aspect of pain relief after the operation. You will also be encouraged to ask questions. The surgical staff (doctors) will visit to examine you, discuss the details of the operation and answer questions. The nursing staff will also evaluate your needs and make you as comfortable as possible.

What Needs to be Done to Get ready for the Operation?

Before your operation, much of your body hair will be shaved off, specially from your chest and legs. You will be asked to shower and wash with antiseptic soap to remove bacteria from the skin. This reduces the chance of infection.

You should remove personal items such as eye glasses, contact lenses, dentures or detachable bridge work, watches and jewelry, and give them to family members for safe keeping.

Usual medications are generally taken on schedule, but consult the doctor or nurse before taking any medicines. Medications that make you relax and drowsy, will be given about an hour before the operation. After you are in the operating room, the anaesthesiologist will give you an anaesthetic that brings sleep and freedom from pain during the operation.

What Happens in the Operation Room?

Coronary Artery Bypass operations are performed using a heartlung machine. This machine makes it possible to stop the beating or motion of the heart by acting as both the heart and lungs during the operation. Then the artery or vein grafts can be precisely connected to the tiny coronary arteries. The operation usually lasts from three to five hours, however the total duration depends upon what needs to be done.

AFTER THE OPERATION

Where Do Patients Go after the Operation?

You will be taken directly from the Operating Room to the Intensive Care Unit (ICU) / Cardiac Intensive Care Unit (CICU). Here, you will wake up slowly after the anaesthetic wears off. Some patients may not be able to move their legs or arms when they first wake up, but in a short time their body and mind will again be co-ordinated. This is due to certain medication given during the operation.

How Soon after the Operation May the Family Visit Me?

Your family may visit you briefly in the Intensive Care Unit / Cardiac Intensive Care Unit (CICU) within an hour or two after the operation. You will be asleep at this time and attached to a breathing machine.

Will There Be Pain?

You will have some discomfort in the incision made to reach the heart. (It is made along the midline of the chest through the breast bone). Usually, there will be one or more incisions in the leg, if a vein was removed to use for the bypass. These incisions may also hurt. Medications will be given regularly to relieve pain.

What about Tubes and Wires Connected to the Body?

When you wake up in the Intensive Care Unit / Cardiac Intensive Care Unit (CICU), you will be aware of tubes and wires which were inserted or connected during your surgery. They provide for safe and efficient recovery. Catherers, which are small tubes, will be in place, usually in the arm. They are used to help the staff give medications and fluids, take blood samples and carefully monitor your blood pressure. One or two tubes in the chest will drain off fluids that collect normally during and after the operation. Electrodes on your chest are attached to the monitor which allows the nursing staff to monitor your heart rhythm and rate. Small wires may be attached to the lower chest to permit pacing the heart, if needed. A breathing tube (endotracheal tube) in your mouth goes by the vocal chords (sound box) into windpipe. It is not painful, but does prevent talking. The nurse will help you find other ways to indicate your needs. The breathing tube is usually taken out within 24 hours after the surgery.

A Foley catheter is inserted into your urinary bladder. The purpose of the catheter is to accurately measure and record urine output. It will be removed after a day or two in the Intensive Care Unit.



Are there any Peculiar Feelings Experienced at the Intensive Care Unit / Cardiac Intensive Care Unit (CICU)?

It is hard to keep track of time in an area where lights are on 24 hours a day and where there is continuous activity. Such a setting misleads the senses, and you may become confused and disoriented. Medicines given for pain may increase confusion. This temporary confusion, if it occurs, is not serious. It will go away within a day or two after you are moved to a quieter room. As you are able to rest, normal patterns of sleep, wakefulness and thought processes will return.

What Can Be Done To Help in Recovery?

Deep breathing exercises and coughing are important ways to help speedy recovery. Coughing reduces the chances of pneumonia and will not harm the incision or bypass grafts. Most patients, fearing pain or discomfort, do not like to cough after an operation. Still, coughing is essential. While coughing, the chest is supported by a pillow. You can also help your own recovery by changing positions often in bed.

What Can I Eat and Drink?

Once your breathing tube is removed, you will be able to swallow liquids. How quickly you are able to progress from liquids to a regular diet, depends on your own digestive system.

When Can I Get out of Bed?

Patients may get out of bed and sit in a chair or walk around the room as soon as they are able, usually, within a day or two. Later, they can take short walks in the Hospital corridor. Eventually, they can climb stairs and

take longer walks in preparation of going home.

What about Bathing?

Sponge baths are given in the Intensive Care Unit / Cardiac Intensive Care Unit (CICU). In a few days, a shower and shampoo will be allowed. Do not allow the spray of the shower to directly hit your incisions as they may be sensitive. You should not bath in the tub until your incisions are fully healed and the scabs have fallen off.

Is one Position Better than another for Sleeping?

It is best to try to lie on your side at least part of the time, moving every few hours, if you can. Lying on your back for a long time, is not good for your lungs.

What about Healing of the Incisions?

Soon after the operation, the chest wound is exposed to the air that allows it to dry. Once it is dry and not draining, washing it with soap and water is a good idea.

The number and length of leg incisions vary from patient to patient. They depend on how many vein grafts the surgeon must make. Some patients have an incision in only one leg while others have incisions in both. You will, most probably, have bruising along the leg incisions, but this will gradually disappear.

What about Ankle Swelling?

There may be some tendency for the ankle to swell in the leg from which the veins were taken for bypass. You may also feel a burning sensation when standing up on the leg from where the vein was taken. Elastic-support stockings help circulation and reduce swelling. Walking helps blood circulation in the legs and also helps lungs and heart. Standing in one place may aggravate the swelling. It often helps to elevate the foot while sitting. It takes six to eight weeks for other veins in the leg to take over the extra blood flow from the removed vein.

External stitches or staples, if used, are removed from the chest about a week after the surgery. Leg stitches may not require removal as absorbable stitches may be used. These wounds require about six weeks to heal completely. Avoid lifting heavy objects during this period. The colour of the wound will gradually change from purple to red to pink and return to normal after several months.

How Long is the Convalescent period in the Hospital?

The usual Hospital stay after an operation, is from one to two weeks. During that period, most patients have "good days" and "bad days" with overall progress and a gain in strength.

Will the breast bone break apart?

The breast bone is wired together after surgery using six to ten stainless steel wires. These wires remain permanently. It takes six to eight weeks for the breast bone to start to knit. You may feel the breast bone move or shift when you turn in bed or lift something. This feeling is normal and will gradually disappear. As the breast bone heals, you should not drive, lift heavy objects or do any strenuous activity for six to eight weeks after surgery. This will allow the breast bone to heal properly. Brisk walking and climbing stairs, however, can be undertaken as soon as you are comfortable doing it.

RETURNING HOME

Can leaving the Hospital Cause Mixed Feelings?

It is not at all unusual to feel anxious or depressed about returning home. Sometimes, these feelings are prompted by concerns about leaving the security of the Hospital. Home care, by comparison, may seem uncertain. Remember, no patients are discharged until the doctor thinks that their condition is satisfactory for them to continue their safe recovery at home.



What about a Special Diet?

The doctor, dietician or nursing staff will explain how to modify your eating style. It is wise to reduce coronary risk factors as much as possible by reducing saturated fats or cholesterol (ghee, egg yolk, butter, chocolate, etc.) and salt in the diet. It is also important to avoid being overweight.

What about Smoking?

Tobacco smoke contains nicotine. Nicotine increases your heartbeat, narrows your blood vessels and raises your blood pressure. Together these actions increase the heart's workload. If you keep smoking after heart surgery, there is a chance your new bypasses will start closing off, just like the original arteries did. Therefore, if you smoke, you must quit and if you do not smoke, do not start at all.

What Medications Should be Taken?

You should only take the medicines your doctors have prescribed for you. Do not keep taking medicines that you took before the operation, unless they are specifically re-prescribed.

What Should I be Doing at Home?

You should follow these general rules:

- Get up at a normal hour;
- Bath or shower if possible;
- Always dress in regular comfortable clothes.
- Take a rest period in the mid-morning and mid-afternoon or after periods of activity;
- After a short morning walk, take a nap or rest when you get home. You will gradually be able to increase your activity and walking is one of the healthiest ways;
- You have no restriction in climbing stairs when you leave the hospital. It is advisable to take a little rest for a couple of minutes after climbing every 10-15 stairs.

When Should the Doctor be Contacted?

If there are any signs of infection (redness or drainage at the incision), fever, chills, shortness of breath, change in heart rate or any other sign or symptom that seems disturbing.

When can I return to Work?

Most patients can return to work in 6 to 8 weeks, depending on their occupation. Ask the surgeon on the day of your check-up in the Consulting Clinic about when you will be ready to return to work.

What about Sexual Relations?

Sexual activity need not be feared after heart surgery. It can be resumed when you and your partner feel comfortable. Be sure that you have not just eaten or recently strenuously exerted yourself. Give your partner time to adjust after the surgery as she may be fearful of injuring you or over exerting you. If you have any questions, ask your doctor.

What Changes can I expect to Feel after the Operation?

As your recovery progresses, you will be able to more fully appreciate the effects of the surgery. The increased blood flow through your coronary arteries should mean less angina (chest pain) or none at all. You may find that you need little or no medication and your ability to sustain physical activity and exercise has improved. Incisional pain may at times be mistaken for angina pain. This usually settles in a few weeks.

It is important to control your heart-risk factors, so you can get the maximum long-term benefit from your bypass surgery.

Risk Factors for Atherosclerosis Cardiac Diseases

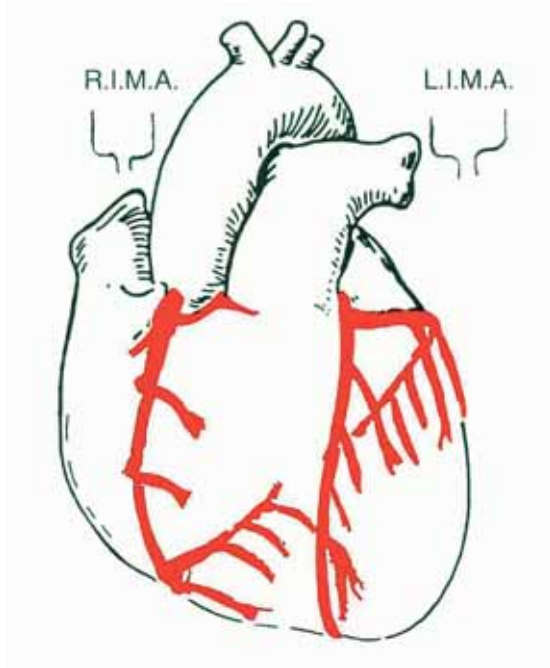
- | | |
|---|--|
| • Aging | • Low level of HDL Cholesterol |
| • Male Sex | • Diabetes Mellitus |
| • Family History of premature Coronary Artery Disease | • Personal History of Cerebrovascular or occlusive peripheral vascular disease |
| • Hyperlipidemia (High level Triglycerides) | • Marked obesity |
| • Cigarette smoking | |
| • Hypertension | |

If you have any questions, be sure to ask your heart surgeon, cardiologist or the nursing staff.

In case you develop any cardiac problem at home, you can contact the cardiac surgery team 24 hours a day by calling on phone 34930051 and requesting the operator to page the on call cardiac surgery doctor.

CARDIOVASCULAR OPERATIVE NOTES

MEDICAL RECORD NUMBER



Date _____

Preop Dx _____

Postop Dx _____

Angiographic/Echo Findings _____

Surgeon _____

Anaesthesiologist _____

Operation _____

Findings _____

Post-operative Course _____

Signed _____

Date _____