



Operation Information

Coronary Artery Bypass Graft ± Endoscopic Vein Harvesting (CABG ± EVH)

Introduction

Coronary Artery Bypass Graft (CABG) surgery is an open-heart surgery to treat severe obstructive coronary artery disease. Coronary heart disease can cause angina, which is chest pain that occurs when the supply of oxygen-rich blood to the heart becomes inadequate. Some cases of angina can be treated with medication, severe angina may require Percutaneous Coronary Intervention or a coronary artery bypass graft to improve the blood supply to the heart.

A doctor creates new conduits (using healthy vessels from other parts of the body) to by-pass the narrowed and blocked coronary arteries, allowing sufficient blood flow to the heart muscle. The most commonly used vessel is a vein from the lower extremity called the Greater Saphenous Vein or the artery that lies on the undersurface of the sternum called Internal Mammary Artery. Radial artery of the non-dominant arm can also be used as a graft.

The Endoscopic Vein Harvesting (EVH) method may be considered to obtain the graft by using small incisions and specialized minimally invasive instruments to view internally, cut and seal side branches, remove the healthy blood vessel with minimal trauma to the vessel or surrounding tissues. EVH shows important benefits, including a reduced risk of infection and other complications.

Outcomes

This operation will improve blood supply to the heart. After having a coronary artery bypass graft, the risk of heart attack will be lowered.

Procedures

1. The operation is performed under general anaesthesia.
2. The doctor will make an incision in the center of the chest and enter through the sternum or the breastbone.
3. In the case of "off-pump" surgery, the doctor use devices to stabilize the heart. If the case is "on-pump", a heart-lung machine is set up to start cardiopulmonary bypass. The body is cooled down in order to slow down the blood flow and to minimize damage to the body.
4. One end of each graft is sewn on to the coronary arteries beyond the blockage and the other end is attached to the aorta.
5. One or more flexible tubes are placed in the mediastinum and pleural space to drain the blood from around the heart and lungs.
6. The sternum is wired together and the incisions are sutured closed.

Possible Risks and Complications

1. Wound bleeding
2. Wound infection
3. Arrhythmias (Irregular heart rhythm)
4. Stroke
5. Heart attack
6. Renal failure
7. Damage to other organ(s)
8. Death

** The risks listed above are in general terms and the possibility of complications is not exhaustive. Please understand that even though all operations are carried out with utmost professionalism and care, this does not rule out the possibility of complications arising. In the event of peripheral organ damage or post-operative haemorrhage or leakage, further operations may be required.

Pre-operative Preparations

1. Good hygiene can prevent surgical wound infection. Therefore, we advise you to clean up yourself on the day of operation.
2. The procedure and possible complications will be explained by the doctor and a consent form must be signed prior to the operation.
3. Please inform the doctor and nurse all your past medical history, previous surgical operations, current medication and any complication with drug or anaesthesia. Please inform doctor if you are taking medications that affect blood coagulation, such as Aspirin, Warfarin, Xarelto or Pradaxa and Chinese medication.
4. The bowel preparation medication (e.g. laxatives) will be administered to empty the bowel the night prior to the operation.
5. No food or drink six hours before operation.
6. Please change into a surgical gown after removing all belongings including undergarments, dentures, jewelry and contact lenses.
7. Please empty your bladder before the operation.

Post-operative Instructions

General

1. After general anaesthesia, you may:
 - experience discomfort in the throat after tracheal intubation.
 - experience side effects of anaesthesia including feel tired, drowsy, nausea or vomiting. Inform the nurse if symptoms persist or worsen.
2. You will need to stay in ICU for close monitoring for a few days immediately after the operation.
3. The heart rate and blood pressure will be continuously monitored during this period. Intravenous medicines are often given to regulate blood circulation and blood pressure.
4. You are sedated and a breathing tube is used in the initial phase to minimize the workload of the heart.
5. Chest drains are placed in the chest for 2-3 days to drain fluid from around the heart.
6. A urinary catheter is also used to monitor the amount of urine output.
7. Please inform the nurse of wound pain. Proper pain relief treatment by injection or oral medication will be prescribed by the doctor.
8. Regular deep breathing and coughing exercise should be done under the guidance of physiotherapist with the use of the incentive spirometer after the breathing tube is removed.
9. All drains and catheter will be removed when the patient's condition is stable. You will then be transferred to general surgical ward.

Wound Care

1. You may feel pain around the site of incision on the chest bone and the area where an artery or vein was taken for grafting. The doctor will prescribe analgesic to relieve the wound pain.
2. Please keep the dressing intact. If the graft was taken from lower extremity, pressure stocking will be applied to prevent swelling and promote venous return.
3. Press on the chest wound gently during deep breaths or coughs.
4. The wearing of loose-fitted clothing is encouraged to avoid irritation of the wound.

Advice on Discharge

1. CABG is a major operation. It takes about 2-3 months to fully recover. A healthy lifestyle, balanced diet and light exercise can promote recovery.
2. Prescribed pain medication may be taken as needed.
3. Lifting, pushing or pulling heavy objects should be avoided whilst the breastbone is healing.
4. Keep the wound dry. Showering is allowed when the wound is closed and sutures have been removed.
5. For extremity wound, continue wearing pressure stocking to promote circulation and prevent deep vein thrombosis.
6. Resume daily activities gradually.
7. Immediately consult your doctor or return to hospital for professional attention in the event of severe wound pain associated with redness and swelling, draining pus or blood seepage, shivering, high fever over 38 °C or 100.4 °F, or any other unusual symptoms etc.
8. Any follow-up consultations should be attended as scheduled.
9. Detailed instructions on self-care at home will be given to you upon discharge.

Should there be any enquiries or concerns, please consult the attending doctor.

Under the professional care of the doctor, you will gradually recover. We wish you all the best during your treatment and recovery.

If you have any questions after reading the entire leaflet, please write them down in the spaces provided in order for the doctor to further follow-up.

Compiled by Union Hospital Operating Theatre (OT) Governance Committee

The above information is for reference only, please enquire your physician for details
Our Hospital reserves the RIGHT to amend any information in this leaflet without prior notification