

Open Heart Surgery – 10 things you should know

Dr Randolph Rawlins MB.BS. FRCS (Ed), FRCS CTH

Consultant Cardiac & Thoracic Surgeon

Lead Surgeon – Advanced Cardiovascular Institute Surgical Therapies (ACIst)

Cardiovascular disease is the number one cause of death worldwide. It accounted for 17.9 million deaths in 2019 and this number is expected to rise to 23 million by 2030, based on World Health Organisation projections. Most deaths are due to coronary artery disease.

Untreated heart attack or myocardial infarction survivors are at risk of reduced life expectancy, worsening symptoms, or poor quality of life. Open heart surgery prolongs life and relieves symptoms in patients with surgically treated heart conditions.

Here are 10 things you should know about open heart surgery

1. Open heart surgery is safe.

Published data indicate risks associated with open heart surgery are low.

This is despite many patients being older, with multiple pre-existing conditions. Improvements in anaesthesia, improved cardiopulmonary bypass technology and better heart protection strategies have contributed to risk reduction. This, combined with dedicated and committed medical and nursing teams providing good “after care” or post operative care, has led to excellent outcomes for patients. The cardiac surgeon now has at his disposal significantly advanced technology and equipment not previously available.

2. After open heart surgery the following symptoms of heart disease are usually eliminated:

- Chest pains or angina: This refers to chest tightness or pains radiating down the arms, to the neck or jaw. Diabetics may have atypical symptoms.
- Shortness of breath
- Irregular heartbeat
- Leg oedema or swollen legs.

3. Patients undergoing Open heart surgery may present with one or more of the following risk factors:

- Diabetes
- Hypertension or high blood pressure
- Dyslipidemias or high cholesterol levels
- Smoking
- Family history of coronary artery disease.

4. There are different types of open heart surgery operations.

Heart surgery may be performed for defects present from birth or conditions acquired in adult life. Operations include coronary Artery Bypass Grafting (CABG), heart valve repair or replacement for defective valves, aortic dissection or aneurysm surgery, or a combination of these. Arrhythmia surgery or ablation to eliminate atrial fibrillation is one of the most significant advances in cardiac surgery, with a high success rate. Coronary Artery Bypass Grafting (CABG) is the most frequently performed open heart surgery in adults. It is performed to treat blocked arteries due to plaque build up. New arteries and veins are used to create new routes of blood flow thus reducing the chance of heart attacks. More than 20,000 CABG operations are performed annually in the United Kingdom. Successful surgery prolongs life, relieves symptoms and improves quality of life.

5. Heart surgery does not involve breaking or cracking of ribs.

Some patients are afraid of undergoing life saving heart surgery because of misinformation surgery involves “cracking open the chest”. The median sternotomy, the standard surgical incision at the front of the chest does not involve cracking or breaking ribs. It is a stable incision associated with less discomfort. Additionally patients are routinely prescribed strong intravenous painkillers, for example morphine infusions. This is subsequently replaced by strong oral analgesics when patients are able to swallow.

6. Heart surgeons can predict the chances of successful outcomes.

Risk assessment allows for open discussion between patients, relatives and the cardiac surgeon before surgery. There are risk assessment models, such as the Euroscore and logistic Euroscore, which allow cardiac surgeons to quantify risks. Scores are given for patient-related factors, cardiac-related factors and surgery-related factors. Factors include age and gender, underlying medical conditions such as renal/kidney disease, lung diseases and intraoperative findings. The cumulative score reflects the overall risk.

7. Being female may influence outcome after heart surgery.

Women referred for heart surgery usually present at older ages than men.

Older age means they are more likely to present with age-related conditions like diabetes and hypertension or significant past medical history which may add to risks. Asymptomatic Females with known risk factors or patients with new symptoms or a family history of heart disease should be encouraged to undergo early investigations.

8. A coronary angiogram is performed before heart surgery in most patients.

Coronary angiography provides information about the blood supply to the heart.

It provides a road map of the coronary arteries and is used to identify blocked arteries or other abnormalities in people with angina or chest pains. It is a low-risk procedure mostly performed as an outpatient or day case.

9. Age influences the length of hospital stay after open heart surgery.

Patients recovering after cardiac surgery are usually suitable for discharge from hospital after five or six days. Most are fully mobile, able to shower independently and climb a flight of stairs. The younger and fitter the person, the more likely they can meet this target. Older patients, higher risk candidates, those undergoing complex procedures or those with post-surgery complications may remain longer in hospital.

10. Use of Cell savers during Open heart surgery reduces the need for blood transfusions.

Cell savers are devices that collect the patient's own blood from the operative field during surgery. Blood collected is returned to the patient, minimizing the need for blood transfusions. This is important in societies with limited blood reserves, and also has benefits for the patients. It is especially important for patients undergoing open heart surgery who do not accept blood transfusions on religious grounds.

Open heart surgery is safe, relieves symptoms and prolongs lives of patients with coronary artery disease, heart valve diseases and other heart conditions requiring surgery. Early referrals to cardiac surgeons are encouraged to minimize risks.