

Insights of Cardiothoracic Surgery

Peifeng Li*

Department of Pediatric Cardiology, Heart Center Georg August University, Göttingen, Germany

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Introduction

Cardiothoracic surgery is the field of medicine involved in surgical treatment of organs inside the thoracic cavity—generally treatment of conditions of the heart (heart disease), lungs (lung disease), and other pleural or mediastinal structures.

In most countries, cardiothoracic surgery is further subspecialized into cardiac surgery (involving the heart and the great vessels) and thoracic surgery (involving the lungs, oesophagus, thymus, etc.); the exceptions are the United States, Australia, New Zealand, and some European Union countries such as the United Kingdom and Portugal.

A cardiac surgery residency typically comprises anywhere from 4 to 6 years (or longer) of training to become a fully qualified surgeon. Cardiac surgery training may be combined with thoracic surgery and / or vascular surgery and called cardiovascular / cardiothoracic / cardiovascular thoracic surgery. Cardiac surgeons may enter a cardiac surgery residency directly from medical school, or first complete a general surgery residency followed by a fellowship. Cardiac surgeons may further sub-specialize cardiac surgery by doing a fellowship in a variety of topics including: paediatric cardiac surgery, cardiac transplantation, adult acquired heart disease, weak heart issues, and many more problems in the heart.

The earliest operations on the pericardium (the sac that surrounds the heart) took place in the 19th century and were performed by Francisco Romero, Dominique Jean Larrey, Henry Dalton, and Daniel Hale Williams. The first surgery on the heart itself was performed by Norwegian surgeon Axel Capelin on 4 September 1895 at Rikshospitalet in Kristiania, now Oslo. He ligated a bleeding coronary artery in a 24-year-old man who had been stabbed in the left axilla and was in deep shock upon arrival. Access was through a left thoracotomy. The patient awoke and seemed fine for 24 hours, but became ill with increasing temperature and he ultimately died from what the post mortem proved to be mediastinitis on the third postoperative day. The first successful surgery of the heart, performed without any complications, was by Ludwig Rehn of Frankfurt, Germany, who repaired a stab wound to the right ventricle.

Surgery in great vessels (aortic coarctation repair, Blalock-Taussig shunt creation, closure of patent ducts arteriosus) became common after the turn of the century and falls in the domain of cardiac surgery, but technically cannot be considered heart surgery. One of the more commonly known cardiac surgery procedures is the coronary artery bypass graft, also known as "bypass surgery." In this procedure, vessels from elsewhere in the patient's body are harvested, and grafted to the coronary arteries to bypass blockages and improve the blood supply to the heart muscle.

Conclusion

Open heart surgery is a procedure in which the patient's heart is opened and surgery is performed on the internal structures of the heart. It was discovered by Wilfred G. Surgeons realized the limitations of hypothermia – complex intra cardiac repairs take more time and the patient needs blood flow to the body, particularly to the brain. The patient needs the function of the heart and lungs provided by an artificial method, hence the term cardiopulmonary bypass. John Gibbon at Jefferson Medical School in Philadelphia reported in 1953 the first successful use of extracorporeal circulation by means of an oxygenator, but he abandoned the method, disappointed by subsequent failures. In realized a successful series of operations with the controlled cross-circulation technique in which the patient's mother or father was used as a 'heart-lung machine'. John W. Kirklin at the Mayo Clinic in Rochester, Minnesota started using a Gibbon type pump-oxygenator in a series of successful operations, and was soon followed by surgeons in various parts of the world.

*Correspondence to

Peifeng Li

Department of Pediatric Cardiology

Heart Center Georg August University

Göttingen, Germany

E-mail: Peifeng@gmail.com

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