

Chapter 2

CARDIOPULMONARY BYPASS

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► Cardiopulmonary Bypass Definition and History

Definition

Cardiopulmonary bypass (CPB); In order to provide optimal surgical vision, it is the process of depressing the heart and lung, which can be used in the respiratory system interventions, especially in cardiac surgery. In this method, the gas exchange through the heart lung machine is provided with oxygenators outside the body. Oxygenated blood is passed through a filter to replenish the tissues and organs to ensure their perfusion.

Cardiac surgery operations performed by cardiopulmonary bypass include repair of congenital heart or large vessel defects, valve repair and replacement, repair of ascending aortic aneurysm, repair of traumatic heart and large vessel lesions, repair of ventricular aneurysm, removal of akinetic segment and myocardial tumors, myocardial revascularization and heart transplantation.

Emerging technology has contributed positively to mortality and morbidity in cardiac surgery, and nowadays, open heart operations have become widespread in many centers. However, despite all these developments, complications such as arrhythmias, infection, ventricular dysfunction, inotropic support, pulmonary and renal dysfunction, can be seen as a postoperative morbidity factor in open heart surgery operations.

History

The first artificial circulation in 1812 by Le Gallois rabbit carotid arteries in the blood supply of the brain is provided. In 1885, Von Frey and Gruber developed the first blood pump, while in 1895 Jokobi used the isolated animal

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Picture 4. Blood Cardioplegia Solution

In conclusion, despite all these effects of cardiopulmonary bypass, open heart surgeries can be performed successfully with the help of developing technology.

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