

Orthotopic heart transplantation: A surgical approach.

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Description

Heart transplantation is a surgery that involves replacing a sick and dysfunctional heart with a healthier donor's heart. Heart transplants are usually reserved treatments for people whose condition has not improved with medication or other surgery. Heart transplantation is a major surgery, but with proper follow-up care, your chances of survival increase.

Despite the development of several new therapies for patients with end-stage heart failure, including mechanical circulation support, biventricular pacing, and significant advances in stem cell therapy, heart transplantation remains the gold standard. The use of donor hearts (eg, older donors), which was considered marginal or suboptimal in the past few years for orthotopic heart transplantation technology has increased in the present era and is due to LVAD. Not only the number of patients undergoing heart transplants, but also the number of patients undergoing heart transplants as a united network for organ sharing status has also had a dramatic impact.

In adults, heart failure can be caused by weakening of the heart muscle (cardiac disease), coronary artery disease, heart valve disease, congenital heart disease (congenital heart disease), dangerous recurrent cardiac arrhythmias (ventricular arrhythmias), those uncontrolled by other treatments, and previous heart transplant failure. Heart failure in children is mainly caused by either of congenital heart disease or cardiomyopathy.

Another organ transplant can be done at the selected medical center for people with a specific medical condition at the same time as a heart transplant (multi-organ transplant) is performed. This includes: 1. Heart and Kidney Transplant- This procedure may be an option for people with renal failure in addition to heart failure. 2. Cardiac Liver Transplant- This procedure may be an option for people with specific liver and heart conditions. 3. Heart-Lung Transplant- In rare cases, a doctor may suggest this procedure for people with severe lung or heart conditions that cannot be treated with a heart or lung transplant alone.

However, heart transplants are not for everyone. You may not be a good candidate for a heart transplant if you have: Severe kidney, liver, or lung disease, active infection, recent history of cancer. Those do not want to change their lifestyle has to maintain the health of donor heart by avoiding drinking alcohol and smoking. The applicability of heart transplants is limited by the availability of suitable donors.

Usually, Potential heart donors must meet the criteria for brain death as a result of a catastrophic event and be free of heart

disease. Echocardiography remains the best initial screening mechanism for potential donors. Donor underlying pathologies, including heart contusion, cocaine use, heart pathology, or social history, often prevent donations due to the short preserving life of the heart (4-6 hours), procurement channels are limited.

Conclusion

Careful planning of the entire surgery attempt is important to limit the ischemic time of the donor to less than 6 hours, preferably less than 4 hours. The ischemic time should also be limited to about 4 hours or less in certain situations with marginal donor hearts (elderly donors) and in recipients with increased pulmonary vascular resistance. The constant presence of a heart transplant coordinator is essential for a smooth and common heart transplant. Here are some factors to consider when adjusting the timing of surgery: 1. The time it takes for other organ procurement teams to complete the dissection before cross-clamping the donor's heart. 2. Organ transport time. 3. Time required for anesthesia, to attach monitor leads, Swan Ganz catheters, and leads. 4. Time required for recipient's heart incision and explantation. The timing of recipient surgery is certainly more complicated for patients with LVAD and/or multiple sternotomies, and for long-distance donor heart withdrawals. Where, it is essential that the donor's heart is not held in the ice cooler of operating room for a long time as it prolongs the ischemic time. Therefore, complete coordination of donor and recipient manipulation is key to limiting the *ex vivo* ischemic time of the donor heart.

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