



講師

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授課主題

Beating Cardiac Transplantation (Anesthesiologist's Perspective)

摘要

Donation after circulatory death (DCD) can expand the cardiac donor pool by 30–50%, but DCD hearts are typically exposed to multiple episodes of warm and cold ischemia, increasing the risk of ischemia-reperfusion injury and early graft dysfunction. Traditionally, even with ex vivo perfusion systems like the Organ Care System (OCS), the donor heart undergoes a second arrest and period of ischemia before implantation.

Krishnan et al., from Stanford University has accomplished **First-in-human beating-heart transplant**, and published their achievements in *JTCVS Techniques* (2023). At the recipient center, a **modified setup** allowed the heart to remain beating. The donor heart was transferred from the OCS to the operating field, connected to CPB with warm recipient blood perfusion. No further cold storage or cardioplegia was applied. Anastomoses were performed with the heart beating and perfused.

In our hospital, we further extended their concepts, and did the first human heart transplant using a donation after brain death (DBD) donor where the heart **never stopped beating** at all.

We have accomplished this method in 2 cases, and will share our experience in this lecture.