

C11-6

TOTAL CARDIAC UNLOADING WITHOUT AUGMENTATION FOR BEATING HEART LVAD IMPLANTATION

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Objective: The traditional approach for Left Ventricle Assist Device (LVAD) implantation with trans-apical outflow cannula includes central cardiopulmonary bypass (CPB), aortic cross-clamping and cardioplegic arrest or electrically induced ventricular fibrillation. Recently, remote cannulation with augmentation of the venous drainage has also been recommended. We describe our experience on beating heart LVAD implantation relying on peripheral venous drainage with self-expanding cannulas gravity drainage.

Methods: Five consecutive patients requiring LVAD implantation underwent peripheral cannulation using a self-expanding cannula for passive venous drainage. One patient was re-operated (6 procedures) because of an external cable damage requiring machine replacement. The implantations were performed without aortic cross-clamping and on the beating heart, after total unloading (flat arterial line, no aortic valve opening in the TEE). Either the Heartmate II (4/6) or the Thoratec IVAD (2/6) were used as bridge to transplantation.

Results: All procedure succeeded (6/6) on the beating heart without cardioplegia or other artifices. The mean age was 52.66 ± 7.53 years (range 43-62), they were all male, the mean body surface area was 1.89 ± 0.26 m² and the mean calculated target pump flow was 4.54 ± 0.26 l/min. The mean achieved pump flow was 5.43 ± 0.55 l/min (119.6% of the calculated flow). Complications related to air embolism were not detected and there were no neurological events or cannula-related complications. Thirty-day mortality was 0%; 1/5 patients was transplanted and discharged; 3/5 patients are on the waiting list and one patient died late from multi-organ failure.

Conclusions: Optimized venous drainage with self-expanding cannulas allows for beating heart LVAD implantation without augmentation and provides more than target pump flow (119%) without active suction. Total flow is achieved by peripheral cannulation and additional cannulas in the thorax can be avoided, a fact very helpful specially when a clamshell approach is recommended by a previous tracheotomy (one patient).



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