UNIVERSITY OF TORONTO LUNG TRANSPLANT PROGRAM

HEART-LUNG RETRIEVAL OPERATIVE NOTE

Hospital: _____ Date: _____

Patient Name: _____ Medical Record Number: _____

Surgeons: _____

The patient was brought to the operating room and placed supine on the table. A preoperative bronchoscopy was performed as part of the pre-transplant lung evaluation. The patient's chest and abdomen were prepped and draped in the usual sterile fashion. A midline sternotomy was performed and a sternal retractor was placed. The heart was exposed via a vertical pericardiotomy with the aid of pericardial retraction sutures. Carefully each pleural space was entered bilaterally to facilitate gross inspection and palpation of the lungs.

The heart was assessed by the cardiac transplant surgeon for suitability for transplantation after which the lungs were assessed by the thoracic transplant surgeon for suitability for transplantation.

Dissection of the inferior vena cava at the level of the diaphragmatic surface of the pericardium was undertaken to free up an adequate length for transection and venting of the liver during perfusion.

The superior vena cava was mobilized in the pericardial space to the superior pericardial reflection, further extrapericardial dissection to the level of the azygos vein was performed and azygos vein was encircled with a silk ligature, the SVC was encircled proximal to the azygos vein with a separate silk ligature.

The ascending aorta was reflected laterally and the posterior surface of the pericardium was incised between the superior vena cava and aorta to expose the trachea. Sharp and blunt dissection was utilized to encircle the trachea 3 cm proximal to the level of the main carina.

Attachments between the main pulmonary artery and ascending aorta were divided to expose and properly separate the great vessels.

In order to perform simultaneous heart and lung perfusion, a 4-0 purse string was placed in the ascending aorta and the aorta was encircled to allow proper cross-clamp placement. A 5-0 purse string suture was placed in the main pulmonary artery just proximal to the bifurcation to the left and right main pulmonary vessels. Systemic heparinization was provided by IV injection of heparin (at least 300 IU/kg). Once systemic heparinization was established, the ascending aorta was cannulated with a cardioplegia cannula and the pulmonary artery was cannulated with a perfusion cannula.

With all transplant surgeons appropriately ready to perfuse their respective organs, a direct injection of 500 micrograms of prostaglandin PGE_1 into the main pulmonary artery was made.

When systemic pressure reached 80 mmHg, the SVC was ligated, a cross-clamp was applied to the ascending aorta distal to the cardioplegia cannula, the IVC was transected and the left atrial appendage was transected in order to vent the lungs.

Cardioplegia and pulmonary flush was then instituted. Three litres of cold Celsior solution was used as cardioplegia to arrest and preserve the heart. Through the entire pulmonary flush process, mechanical ventilation was maintained by the anesthetist. An ice-cold saline slush solution was placed in the pericardial space to facilitate topical hypothermia of the heart.

Once the flush solutions had passed through the heart and lung completely, we proceeded to remove the heart - lung bloc.

The aorta was transected at the proximal arch. The superior vena cava was then transected above the azygos vein and the IVC transection was completed. The heart was allowed to lie in the pericardial sac with slush ice for topical cooling.

The pericardium was transected at the diaphragm down to the esophagus bilaterally in order to enter retropericardial space. Blunt dissection was carried forward along the line of the esophagus and aorta posteriorly up to the level of the trachea just above the carina. The inferior pulmonary ligaments were then transected bilaterally to free up the entire lung bloc inferiorly.

The trachea was then transected proximally with a bronchial stapler with the lungs having been manually inflated to an inflation pressure of 25 mm Hg and allowed to deflate to approximately 70-80%. Tissue in the right and left paratracheal spaces superior were transected in order to free up the lung bloc completely and the heart-lung bloc was removed from the donor chest cavity.

The donor heart was inspected for adequate length of aorta and vena cavae as well as for the presence of a patent foramen ovale. The donor heart-lung bloc was then placed in cold perfadex solution within sterile containers for transport.

ADDITIONAL NOTES

Aberrant Vessels: _____

_____

Organs Retrieved: _____

_____

Other: _____

_____

Signature: _____