STANDARDIZATION OF TRANSPLANT PROCUREMENT PROCEDURES

To the Editor:

We read with interest the article by Pasque¹ and applaud the author's efforts to standardize thoracic organ retrieval. Organ procurement has been conducted by surgical teams from the geographically nearest transplant center on the Zonal Retrieval Scheme in the United Kingdom since 1995. This has significantly improved cost-effectiveness and enhanced the safety of surgical teams. We recommend a number of important additions to the organ retrieval procedure that we believe to be vital in facilitating organ preservation and improving recipient outcomes.

Cardiac output monitoring (usually by using a Swan–Ganz catheter) is extremely useful, if not indispensable, in the assessment and optimization of donor hemodynamic parameters, and we strongly recommend it as a routine.

We have also found individual pulmonary vein gas sampling to be useful in recognizing unilateral dysfunction, allowing a greater number of single lungs to be identified as suitable for transplantation.²

Extension of cardiac ischemic time even beyond 1 hour progressively increases early mortality,³ and therefore minimization is vital. To this end, we routinely pack and dispatch the donor heart before completion of the donor pneumonectomy.

The author suggests extubation of the donor followed by tracheal sta-

pling. Although we appreciate the need to prevent overdilation of the donor lungs (especially with airborne transportation), we have found that complete loss of airway pressure can precipitate recollapse of previously recruited areas of atelectatic lung. Laboratory evidence suggests that both atelectasis and overdilation are detrimental to postreperfusion function.⁴ We therefore advocate partial inflation immediately before tracheal division. Therefore as the endotracheal tube is slowly withdrawn, the stapling device is closed and fired, allowing control of the inflation volume.

Furthermore, the inclusion of the esophagus in the lung block poses an unnecessary risk of contamination of the operative field. Dissection of the trachea from the esophagus at the time of removal of the lung block is straightforward and without injury to the airway or esophagus.

The timing of organ retrieval procedures and the regular involvement of members of staff and hospitals unfamiliar with organ retrieval can propagate many errors in acquiring accurate information and ensuring full and complete communication. Procedural errors are also possible in such a complex and time-sensitive undertaking. We feel strongly that such errors could be avoided by the use of an appropriate procedural checklist for both retrieval and implantation surgical teams.⁵ An adaptation of the World Health Organization's surgical checklist has recently been adopted in the United Kingdom, and cardiopulmonary transplant-specific checklists might be of great value in ensuring best practice.

We once again congratulate Dr Pasque on an excellent and timely synopsis but believe that our supplementary points can further enhance patient safety and improve outcomes.

Phil Botha, MRCS
Stephen C. Clark, FRCS(Cth)
John H. Dark, FRCS
Department of Cardiopulmonary
Transplantation

Freeman Hospital
Newcastle upon Tyne, United
Kingdom

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Reply to the Editor:

The stated goal of the publication of a proposed standardization of the thoracic organ procurement protocol was to stimulate enlightened commentary from leading international thoracic transplant centers, such as that found at the Freeman Hospital in Newcastle upon Tyne, United Kingdom. It is only with the input from such centers of excellence that the protocol can be optimized. Although the final adoption of a protocol on which everyone agrees is unlikely, the completion of this vital open-forum dialogue between centers at the very least educates the next generation of surgeons in regard to the major issues and the available technical options.

Although we have not found it necessary to insist on the placement of a pulmonary artery catheter in the overwhelming majority of cases as suggested by the Newcastle group, we have no problem with its routine application and most certainly have found it to be of critical importance in high-risk donors in whom optimal hemodynamic management or organ use decisions are in need of more quantified hemodynamic information. A best estimate of our current use of

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