Necessity is the mother of invention: Alternative techniques in living-related lobar transplantation come to the mainstream

Dustin M. Walters, MD, and Alexander Sasha Krupnick, MD

From the University of Virginia Lung Transplant Program, Department of Surgery, University of Virginia, Charlottesville, Va.

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Address for reprints: Alexander Sasha Krupnick, MD, University of Virginia Lung Transplant Program, Department of Surgery, University of Virginia, 1215 Lee St, Charlottesville, VA 22908 (E-mail: sashak@virginia.edu).

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More than 1400 people are currently waiting for lung transplantation in the United States alone. The donor organ shortage is compounded even more in countries such as Japan where, despite the legalization of organ procurement from brain-dead donors in the late 1990s, cultural beliefs still limit cadaveric organ donation.¹ Some regions of the world, where religious beliefs dominate cultural attitudes, severely limit transplantation options for those with end-organ failure.² To address this need, living-related organ transplantation has become a frequently utilized option in many circumstances.

Since the initial early reports of living-related lobar transplantation, the Starnes and Date³⁻⁵ groups have led the way in pioneering these innovative techniques. Date and colleagues⁵ report their overall success of expansion in surgical techniques of living-related lobar transplantation. They demonstrate that, in addition to the standard technique of implanting the lower right and left lobes from 2 healthy donors, nontraditional transplant techniques are similarly successful. Specifically, the use of inverted right lobar transplantation in the left chest cavity and the sparing of native upper lobes, as well as right lobar transplantation with concomitant left pneumonectomy, are viable options. The need for postoperative extracorporeal membrane oxygenation support, tracheostomy, or prolonged mechanical ventilation was similar between the 2 groups. Careful preoperative planning, including functional size matching using forced vital capacity and anatomic size matching using 3-dimensional computed tomography, contributed to the postoperative outcomes. This clinical success for recipients is relevant in light of the low complication rates reported for living donors.⁶ The decreased incidence of both acute and chronic rejection after living compared with cadaveric

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Central Message

Alternative technical strategies for living lobar transplantation provide equivocal results to the standard technique and can be used to extend the donor pool.

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lung transplantation highlights the utility of organs obtained in the absence of the organ deterioration associated with brain death.⁷ Based on the ever-present organ shortage, the success reported by Date and colleagues⁵ highlights ongoing innovation necessary to meet our patients' needs.

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