

# EDUCATION CORNER

## LOBAR LUNG TRANSPLANTATION

### Background

- A single lobe can be taken from the donor lung for transplantation into smaller, adult patients.
- Lobar lung transplantation (LLT) was first reported in 1994 (Bisson, et al.).
- Currently, in limited practice and championed at the University of Pittsburgh Medical Center in the U.S.
- Lung allocation score (LAS) system does not take size matching into account, LLT can help maximize the donor pool for patients for whom mortality is particularly high (25%), while they await transplant (Shigemura, et al.):
  - ⇒ Smaller patients
  - ⇒ Restrictive lung disease patients

### Procedure

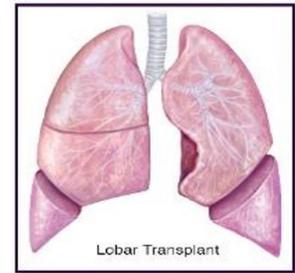
- Lung fissures are evaluated carefully onsite and suitability discussed at time of visualization during procurement.
- Lower lobe is preferable unless contraindicated (e.g. trauma, consolidation, etc.).
- Lobectomy is performed on the back table pre-transplant.
- Bronchial stump is typically reinforced with viable donor pericardium.

### Risks of LLT

- Longer post-operative recovery with special post-transplant care pathway considerations.
- Modestly longer warm ischemic times due to lobectomy time requirements.
- Bronchial stump dehiscence and implications for technical surgical considerations and post-surgical management.

### Lessons Learned

- LLT is a viable option for patients with smaller chest cavities and restrictive lung disease.
- Due to LLT-specific risks, potential recipient and donor identification must be selective.
- Protocolized and multidisciplinary approach are key to successful outcomes which are competitive with normal anatomic lung transplantation.



### References:

Bisson, A. et al (1994).  
*Bilateral pulmonary lobe transplantation: left lower and right middle and lower lobes.*  
*Ann Thorac Surg.* 1994; 57: 219-221.

Shigemura N., et al (2013).  
*Lobar lung transplantation: a relevant surgical option in the current era of lung allocation score.*  
*Ann Thorac Surg.* 213; 96(2): 451-456.

*This inservice is also available on The Alliance blog: <http://organdonationalliance.org/education-corner-lobar-lung-transplantation/>*

*Taken from a webinar presentation by Dr. Jonathan D'Cunha, MD, PhD, FACS (UPMC Presbyterian). A special thanks to Dr. D'Cunha for his contributions to this inservice.*

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