



Minimally Invasive Implantation of an LVAD

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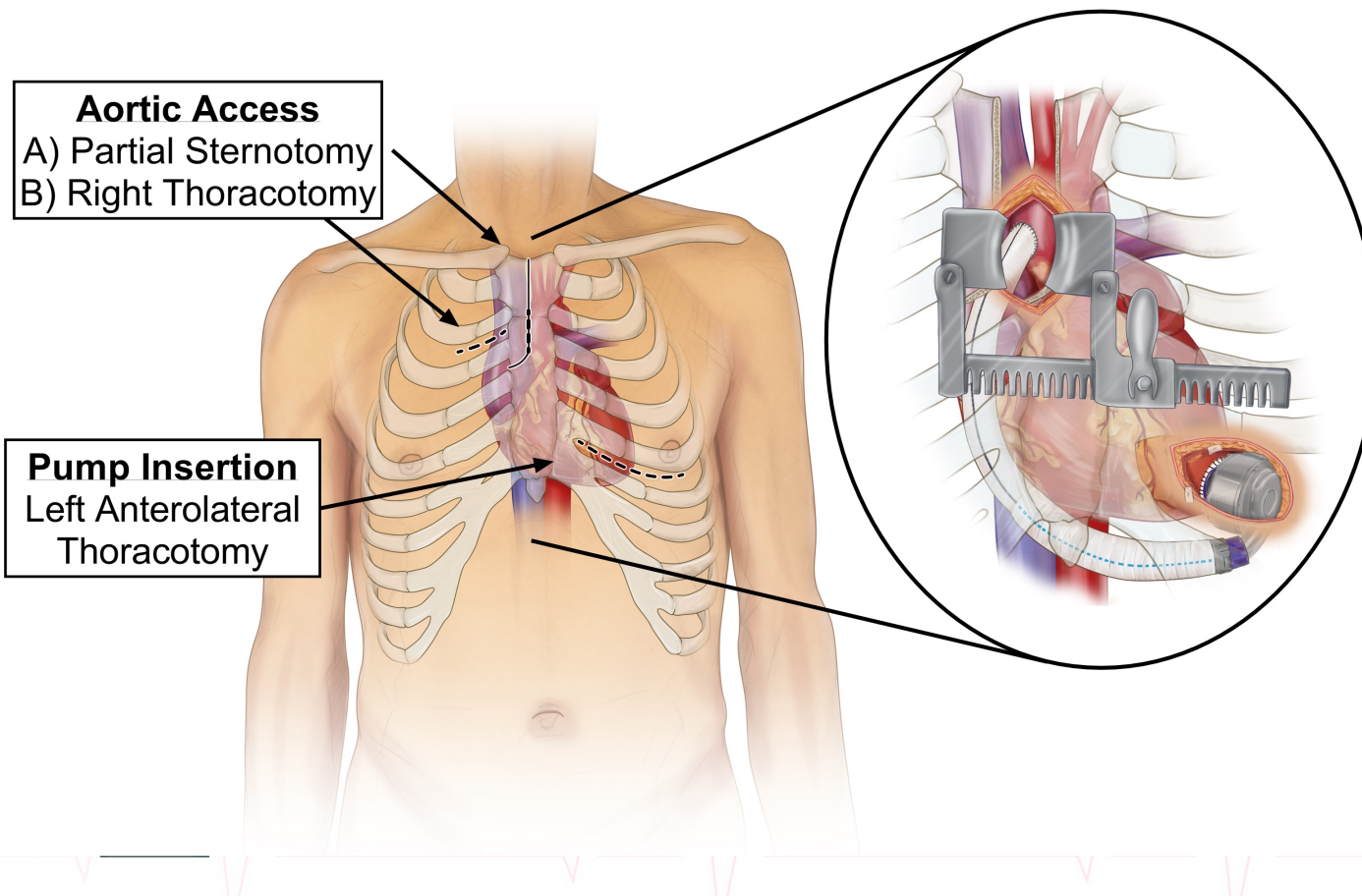


Conflict of Interest Disclosures

- Abiomed, Atricure, Abbott



Thoracotomy-based Implant Technique



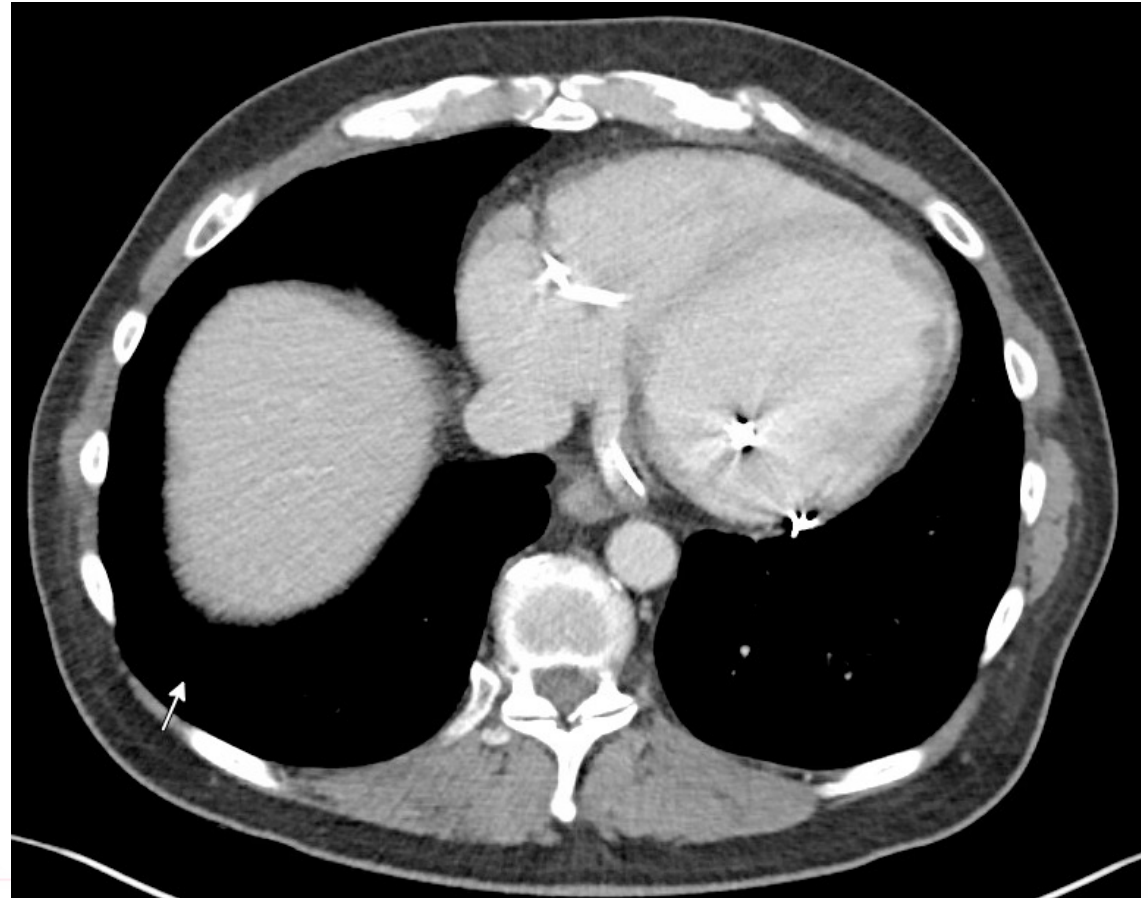
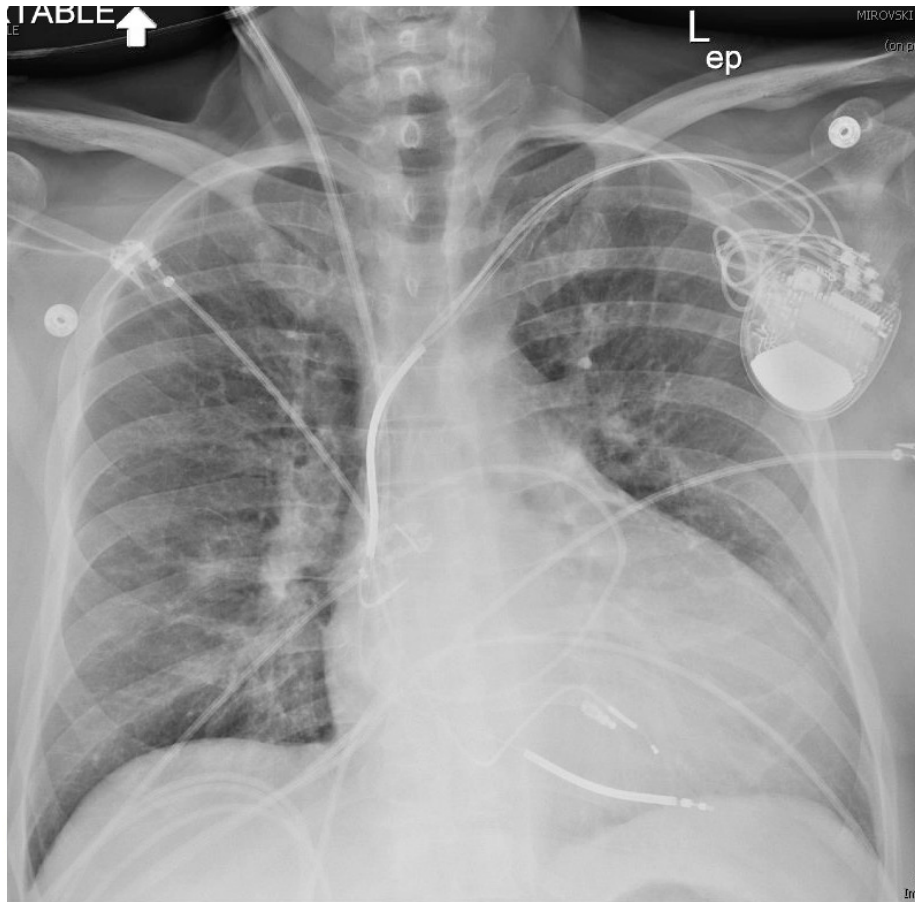


Case Presentation

- 60 y.o. male with dilated cardiomyopathy (LVEF 30%), s/p CRT-D, MitraClip with moderate residual MR
- RHC: RA 9, PA 48/26/26, PCW 20, Thermo 3.3/1.6, Fick 4.09/1.98.
- NYHA Class III
- Not candidate for heart transplant due to high risk for malignancies post-transplant (history of multiple cancers)



Pre-operative X-ray and CT

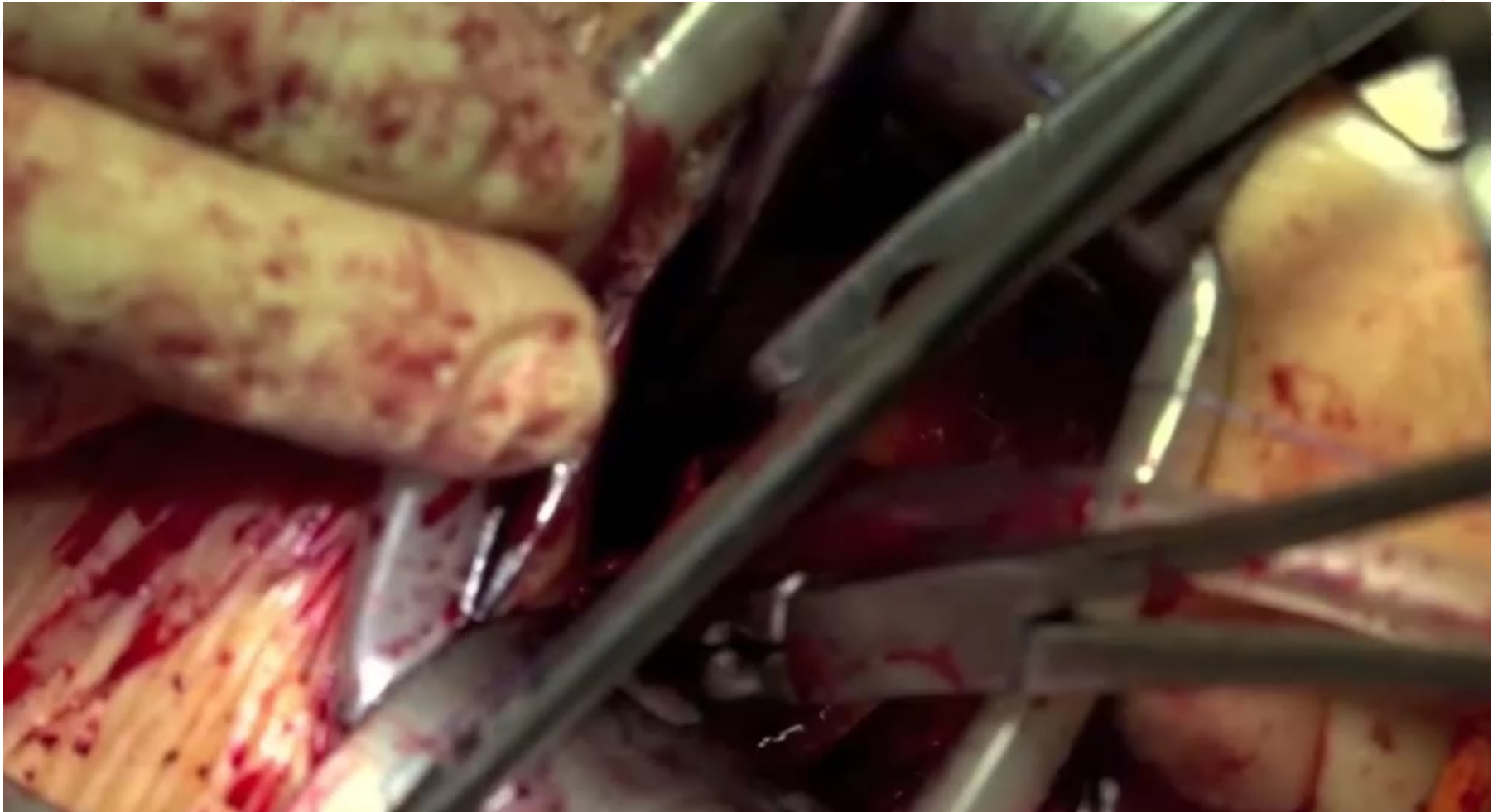




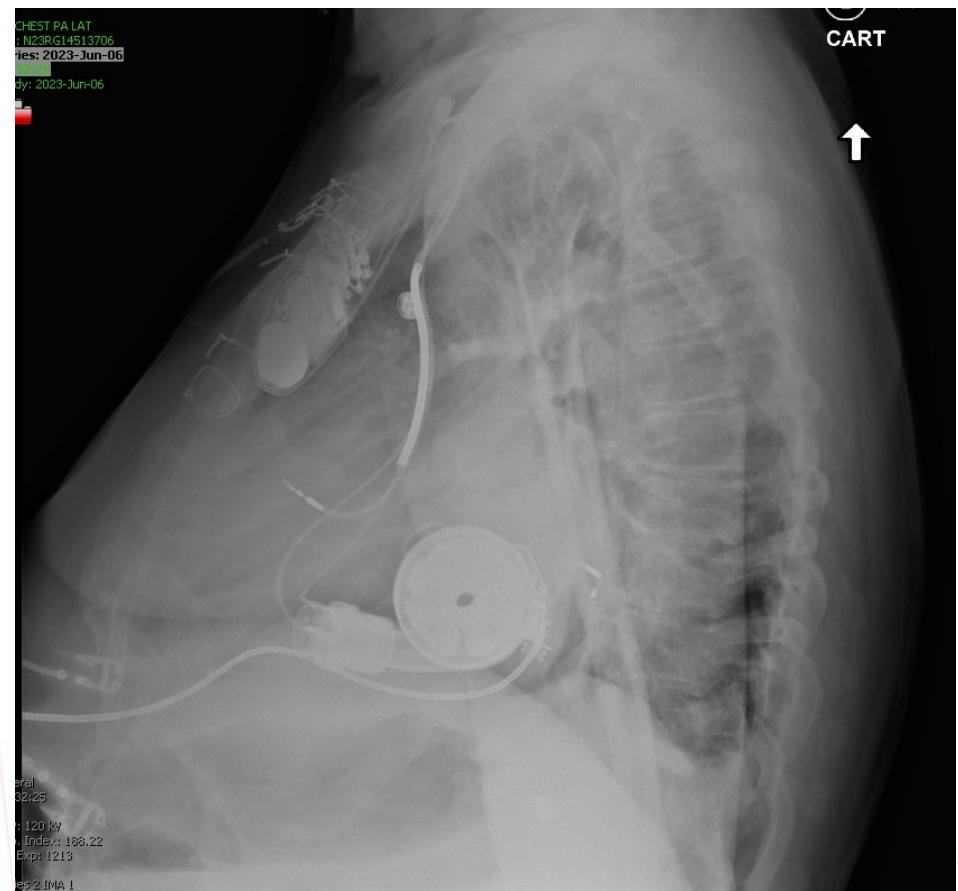
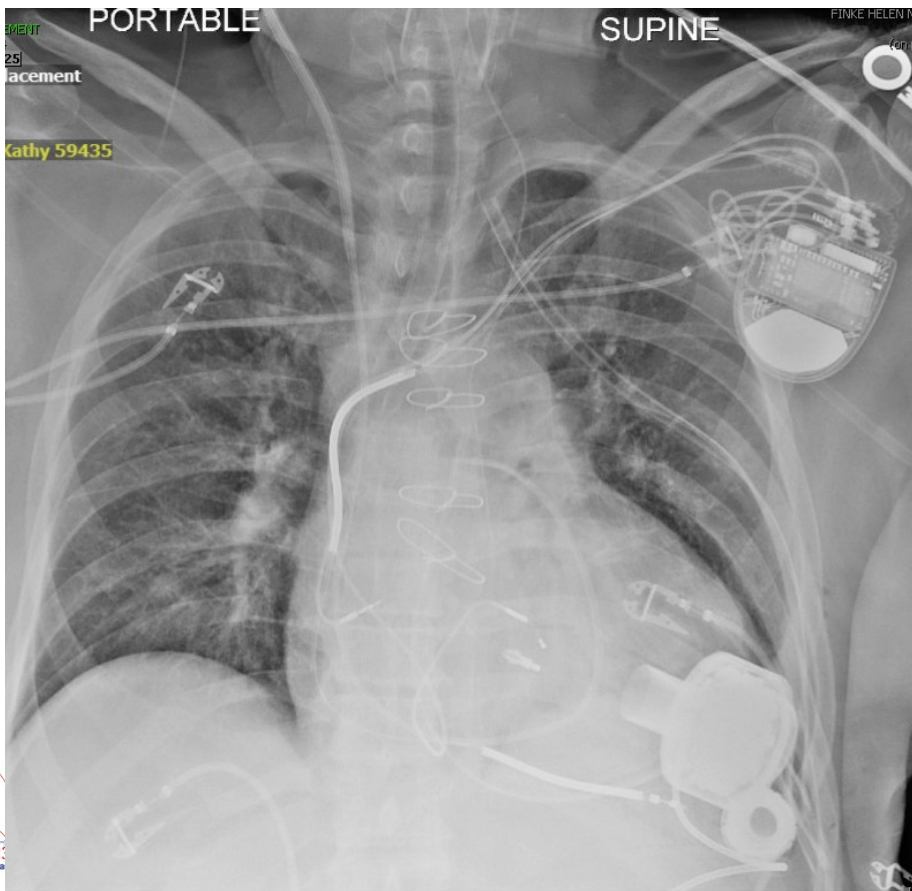
- Can be done on pump or off pump
- Incision
 - Left minithoracotomy and Hemisternotomy
 - Left minithoracotomy and Right anterior minithoracotomy
 - Left Thoracotomy



LVAD IMPLANTATION VIA
UPPER HEMISTERNOTOMY AND
LEFT THORACOTOMY



Post-Operative X-ray





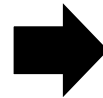
Discussion

Miniaturization
of the device

Development of
surgical technique




Thoracotomy-based
Implant Technique



Less Transfusion

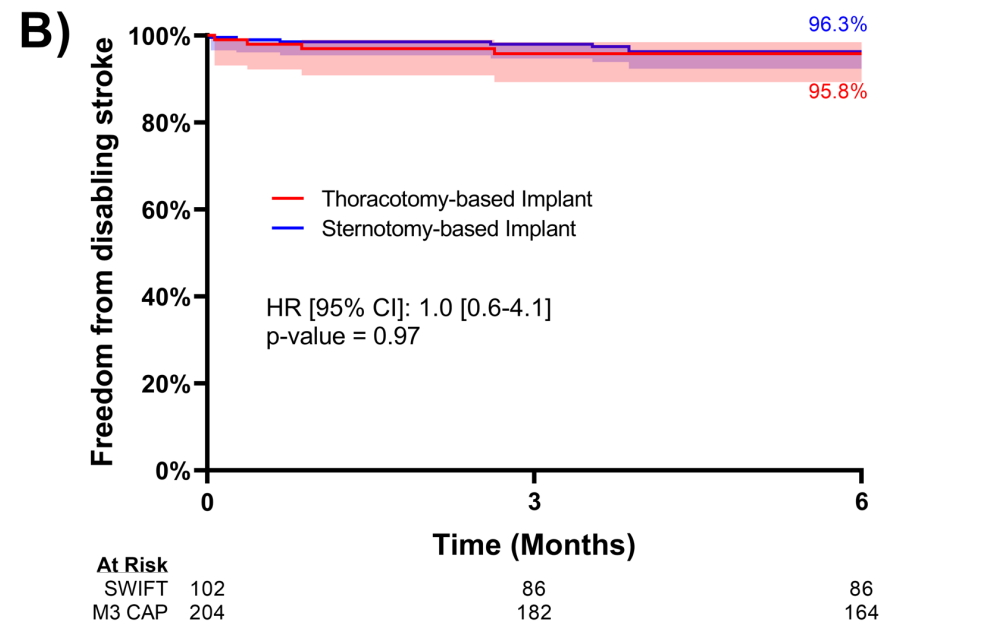
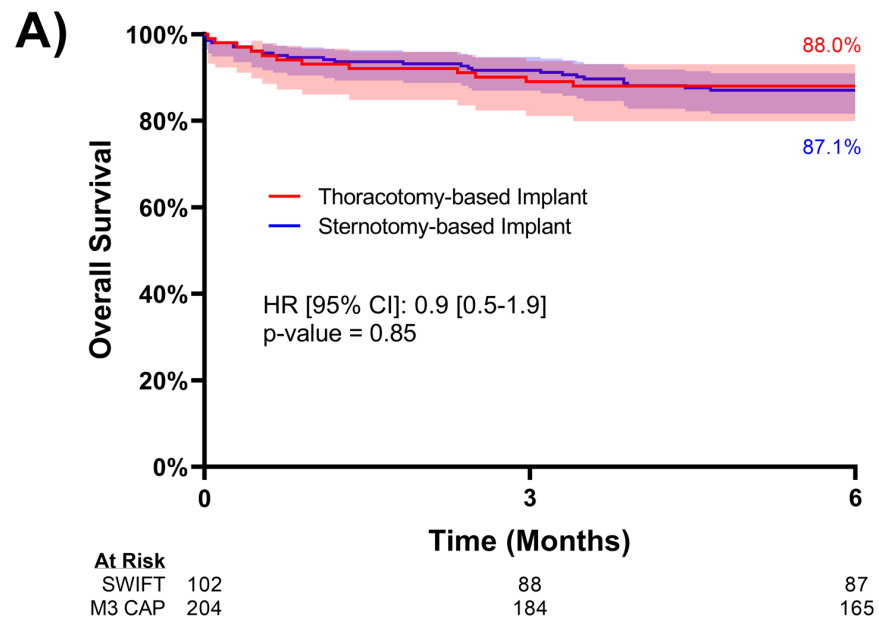
Less RV Failure

Less ICU/Hospital Stay



J Heart Lung Transplant 2020;39:37-44
ASAIO J 2021;67:47-52
J Heart Lung Transplant 2021;40:289-297

Clinical Trial



Thoracotomy-based implantation is **NON-INFERIOR** to implantation via standard full sternotomy.





Conclusion

- Minimally invasive LVAD implantation via upper hemi-sternotomy or right anterior thoracotomy with left thoracotomy is feasible and may offer several benefits





Thank You

