

Tuesday

## Cases in Coronary Artery Disease: *Tips from the Experts*



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January 18, 2022

Disclosures: *None*

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## CAD & bi-ventricular pump failure



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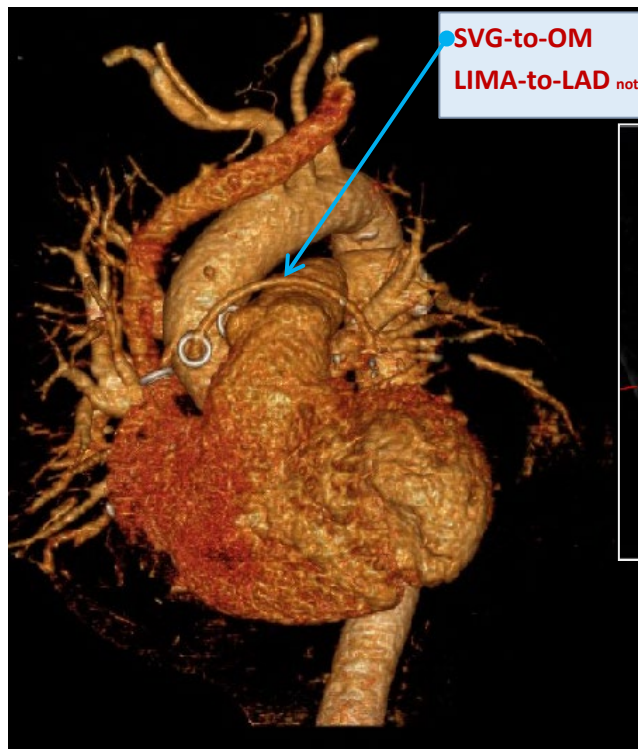
January 18, 2022

Disclosures: *None*

68 yr male: POD 12, ACB x 4

- readmitted with HF, recurrent CP - VT, VF arrest- resuscitated – intubated

CTA – large infarct VSD & 2 closed bypass grafts



SVG-to-OM

LIMA-to-LAD not shown

OPEN

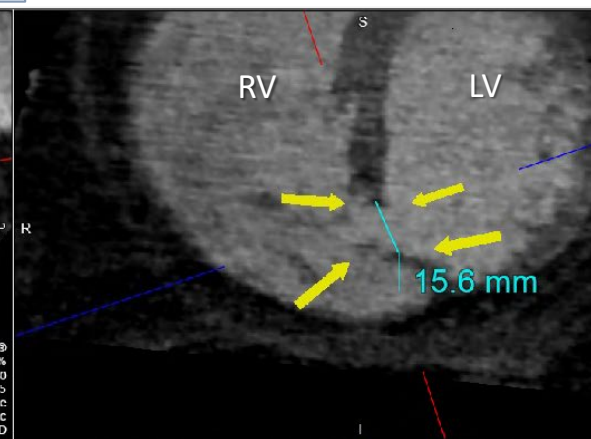
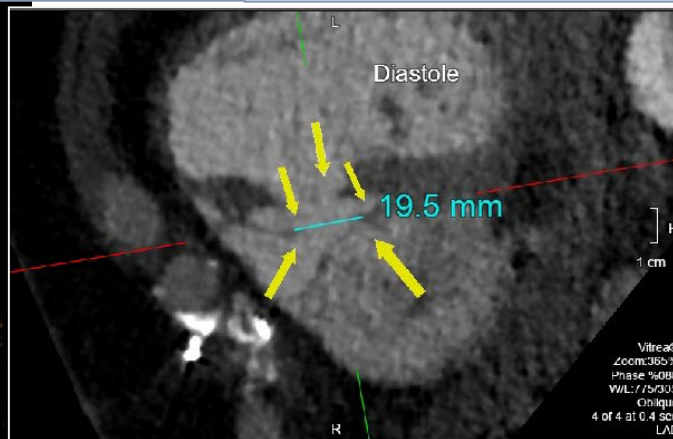
OPEN

SVG-to-RCA

SVG-to-Ramus I.

closed

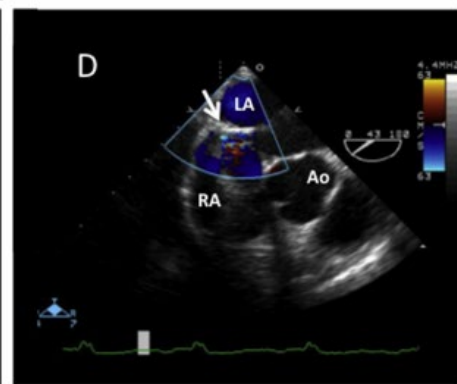
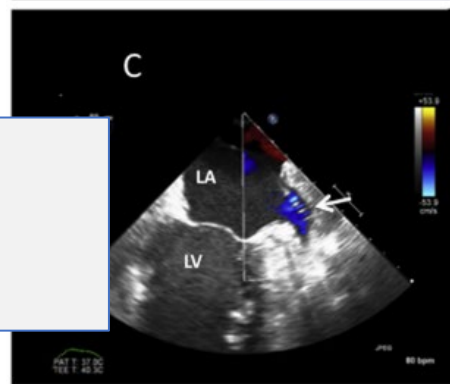
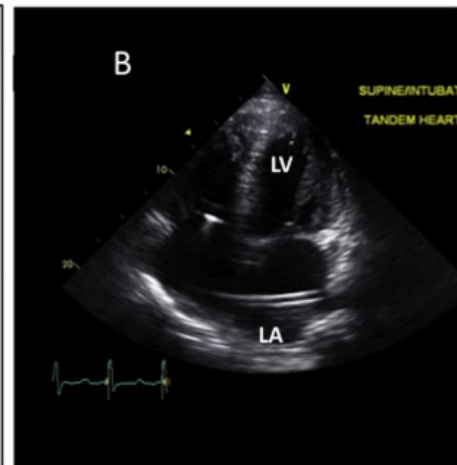
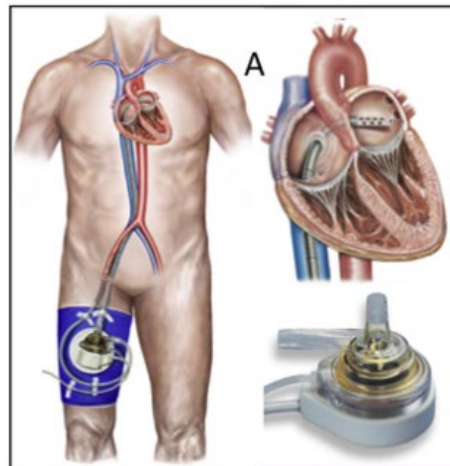
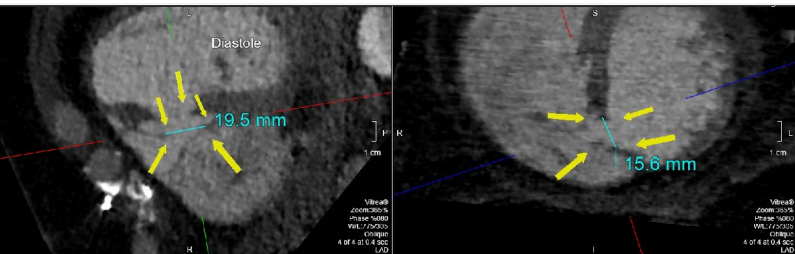
closed



Distal inferior septal rupture  
(infarct VSD) 1.6 x 2.0 cm

# shock due to large Infarct VSD – LVAD – support

## Tandem Heart - temporary LVAD



ASAIO Journal 2014

Adult Circulatory Support

### Perioperative Use of TandemHeart Percutaneous Ventricular Assist Device in Surgical Repair of Postinfarction Ventricular Septal Defect

IGOR D. GREGORIC, BISWAJIT KAR, TOMAZ MESAR, SRIRAM NATHAN, RAJKO RADOVANCEVIC, MANISH PATEL, AND PRANAV LOYALKA

**TandemHeart** - percutaneous LVAD – unloading LV, reduce VSD shunt  
Fem V. → trans atrial septal → LA inflow cannula → pump → Fem artery

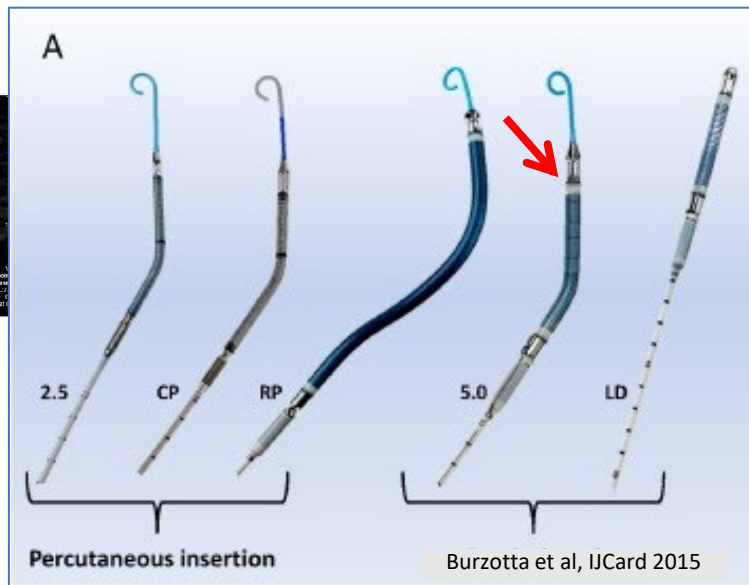
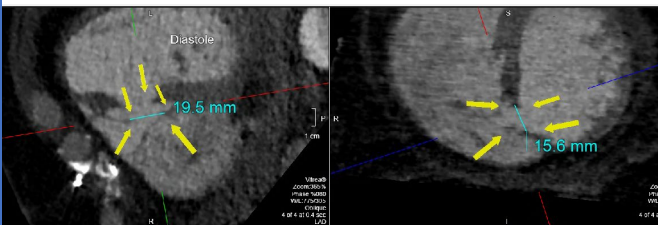
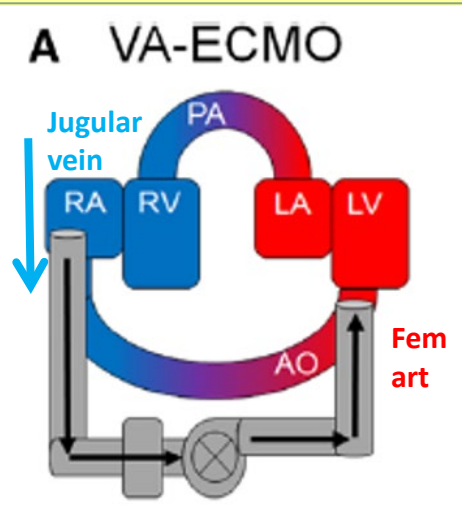
**Amplatzer VSD closure** (ICE guidance cath lab)

# shock due to large Infarct VSD – Bi ventricular support

## Peripheral VA – ECMO (RV support)

(Tandem Heart removed)

## Impella 5.0 (LV support)



Centrifugal Flow Pump Oxygenator

*Circulation*. 2017;136:314–326. DOI: 10.1161/CIRCULATIONAHA.116.025290

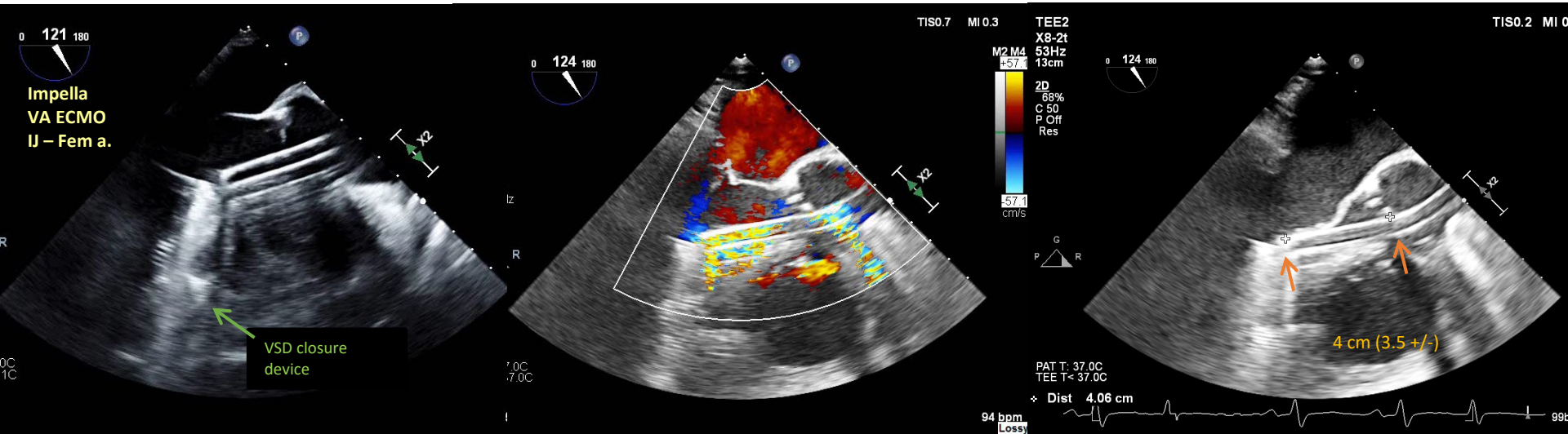
- Bi-ventricular support
- **Peripheral VA – ECMO** (RV support) = **Impella 5.0** (LV support) = (**ECMella**)

- **Failure to wean inotropic support - a TEE is ordered**

68 yr male, Infarct VSD

Fully dependent upon VA ECMO with Impella (ECMella)

Confirming Impella position by TEE



68 yr male, Infarct VSD

Fully dependent upon VA ECMO with Impella (ECMella)



4 Chamber View – During VA ECMO turn down 3->2->1.5 L/min  
No RV enlargement, No new TV regurg.  
VA – ECMO decannulated after day #5  
Impella (LVAD) – dependent x 21 days (refused durable LVAD)

Atrial Septum neutral position  
small iatrogenic ASD from TandemHeart

## CAD & bi-ventricular pump failure



*Thank you*

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