

Why is the VAD Still There if the Heart is Better?: Laparoscopic Tubal Ligation in a Patient with Left Ventricular Device (LVAD) Placement and Subsequent Percutaneous Exclusion



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20-year-old G1P1001

FIRST TRIMESTER:

- Establishment of care
- No pertinent PMH
- Regular prenatal care

7 WEEKS POSTPARTUM:

- RSV Pneumonia
- Symptoms of heart failure
→ Echocardiogram: global hypokinesis with LVEF of 15%
- Trial of inotropic support

1.5 YEARS POSTPARTUM:

- Heart function recovery demonstrated by LVAD turndown study
- LVAD decommissioned by percutaneous exclusion

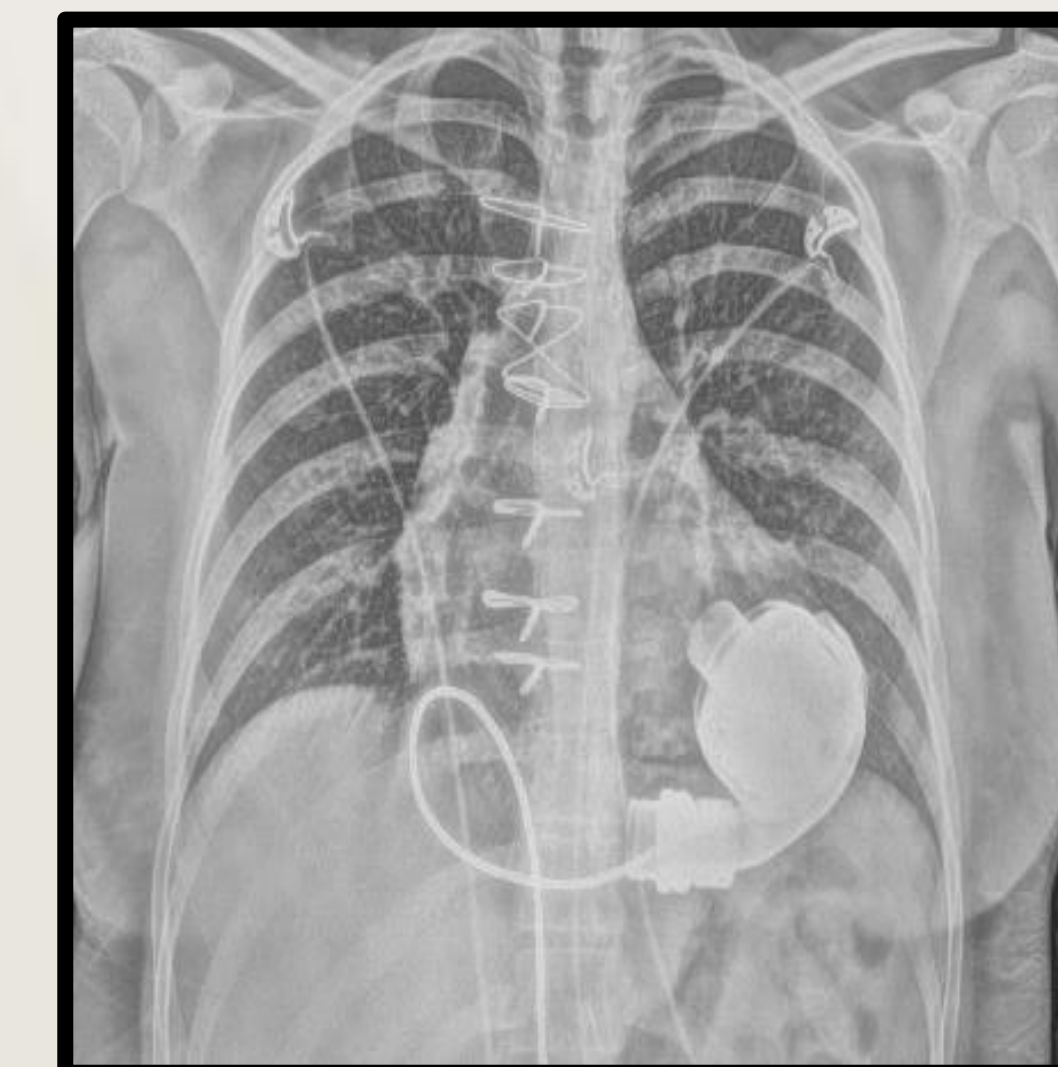
-SROM

- Successful neuraxial placement
- Emergent cesarean due to NRFHTs

39w6d:

- LVAD placement
- Initiation of Anticoagulation

8 WEEKS POSTPARTUM



- Uncomplicated laparoscopic tubal ligation under general endotracheal anesthesia

2 YEARS POSTPARTUM:

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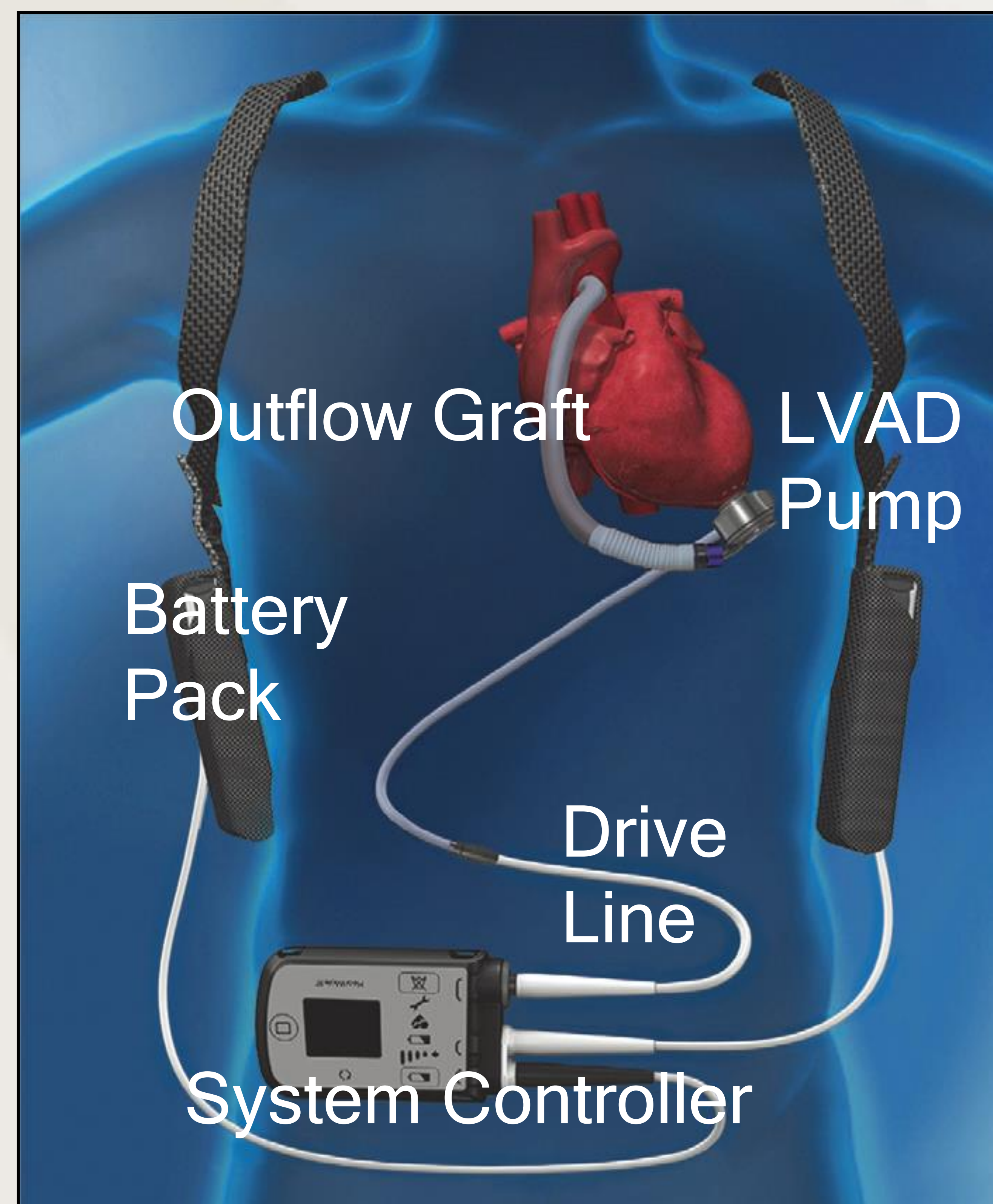
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Post Partem Cardiomyopathy (PPCM)

- Cardiovascular disease remains the number one cause of maternal death in the U.S. with incidence and prevalence depending on race and region.²
- Incidence in the U.S: 1 in 1,000-4,000
- PPCM is unique from CM due to other etiologies in that PPCM has a higher rate of recovery (nearly 50%) with standard management compared to CM due to other etiologies.³

LVAD Indications: Left Ventricular failure



Uses



- Transplantation
- Recovery
- Decision



- Destination Therapy

Candidate for LVAD Exclusion?

1. LVAD support >6 months with normal physical activity
2. Echocardiogram demonstrating LVEF recovery
3. Turndown study
 - Patient is admitted to the CVICU, swan placed for monitoring
 - RPMs decreased: CI, SVO₂, and Lactate monitored for 24 hours
 - Exercise stress test
4. Right heart catheterization to monitor pulmonary artery and pulmonary capillary wedge pressures under LVAD occlusion with balloon catheter

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LEARNING POINTS: DECOMMISSIONED LVAD

LVAD Management after Recovery

Percutaneous decommissioning

- Involves
 - Occlusion of the outflow graft
 - Surgical excision of the driveline
- Associated with excellent long-term survival free from recurrent heart failure and preservation of LVEF up to 3-years. ⁵

Explantation

- Requires
 - Redo sternotomy
 - Cardiopulmonary bypass
 - Left ventricular patch
- Indications other than recovery
 - Infection

Anticoagulation?

- There is currently no consensus on anticoagulation for decommissioned VADs
- Most patients are maintained on vitamin K antagonist for at least 3 months, with or without concomitant antiplatelet therapy. ⁶

Importance of Contraception

- Relapse rate of PPCM is approximately 30%. Most important factor is pre-pregnancy LVEF. ⁷
- 1 in 4 PPCM patients reported no discussion of contraception strategies as well as contraception nonuse. ⁸
- A relapse of PPCM in a patient with a decommissioned LVAD would require reimplantation vs. heart transplant if medical therapy has failed.

Interval Tubal Ligation for VADs: Timing

Patient dependent:

- > 6 months for maximal reversal of myocardial remodeling and recovery.

