

# *Superior Vena Cava Reconstruction Using Autologous Femoral Vein Graft*

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# Introduction

- **Background**
  - SVC obstruction is a recognized complication of transvenous pacemaker and ICD
  - Many patients remain asymptomatic due to collateral formation
- **Clinical Problem**
  - Progressive obstruction can result in symptomatic SVC syndrome
  - Chronic fibrosis and retained leads may limit endovascular options
- **Gap**
  - Open reconstruction is an acceptable treatment but is technically demanding and remains relatively infrequently reported

# Case Presentation

## Patient

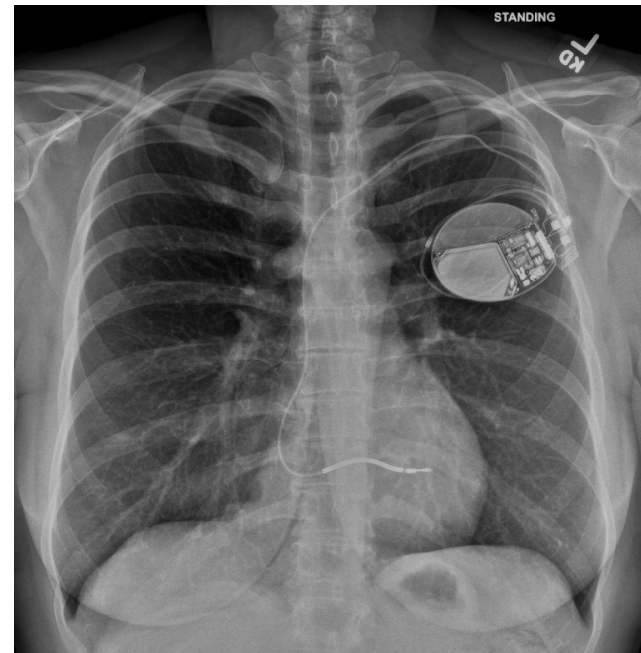
- 39-year-old female

## Past Medical History

- Left ventricular non-compaction cardiomyopathy
- Chronic systolic heart failure
- Left-sided transvenous ICD (2009)

## Chief Complaint

- Progressive facial/arm swelling, dyspnea, syncope



# Case Presentation

## History of Present Illness

- Acquired left brachiocephalic vein and SVC obstruction due to ICD lead
- Initially compensated by chronic extensive collateralization
- Attempted endovascular recanalization was unsuccessful
- Presented to the ED with progressive symptoms:
  - Chest pain, orthopnea, neck swelling, head pressure, and syncope
- Admitted with symptomatic SVC syndrome for surgical planning

# Case Presentation

## Imaging

### CTA:

- Chronic occlusion of SVC and left brachiocephalic vein
- Retained ICD leads within occluded SVC
- Extensive anterior chest wall and azygos collaterals

**Meds:** Metoprolol, Sacubitril/Valsartan, Empagliflozin, Apixaban  $\pm$  Aspirin

- Intolerant to warfarin and dabigatran

## Physical Examination

**Vitals:** BP 109/67, HR 77, SpO<sub>2</sub> 96% RA, afebrile

**General:** Alert, cooperative, in discomfort

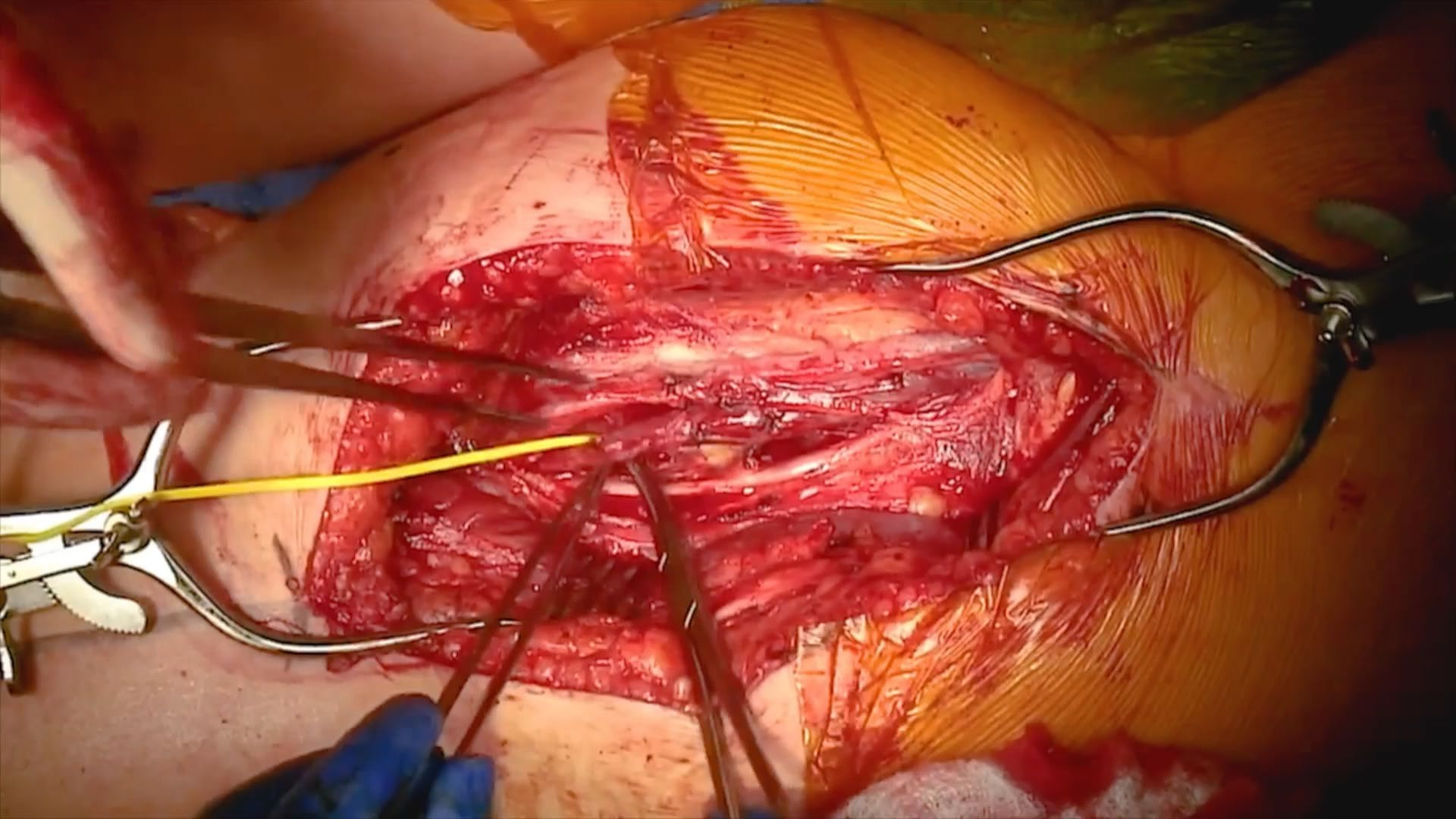
**Neck/Face:** Prominent edema of face and neck

**Extremities:** Bilateral upper extremity edema

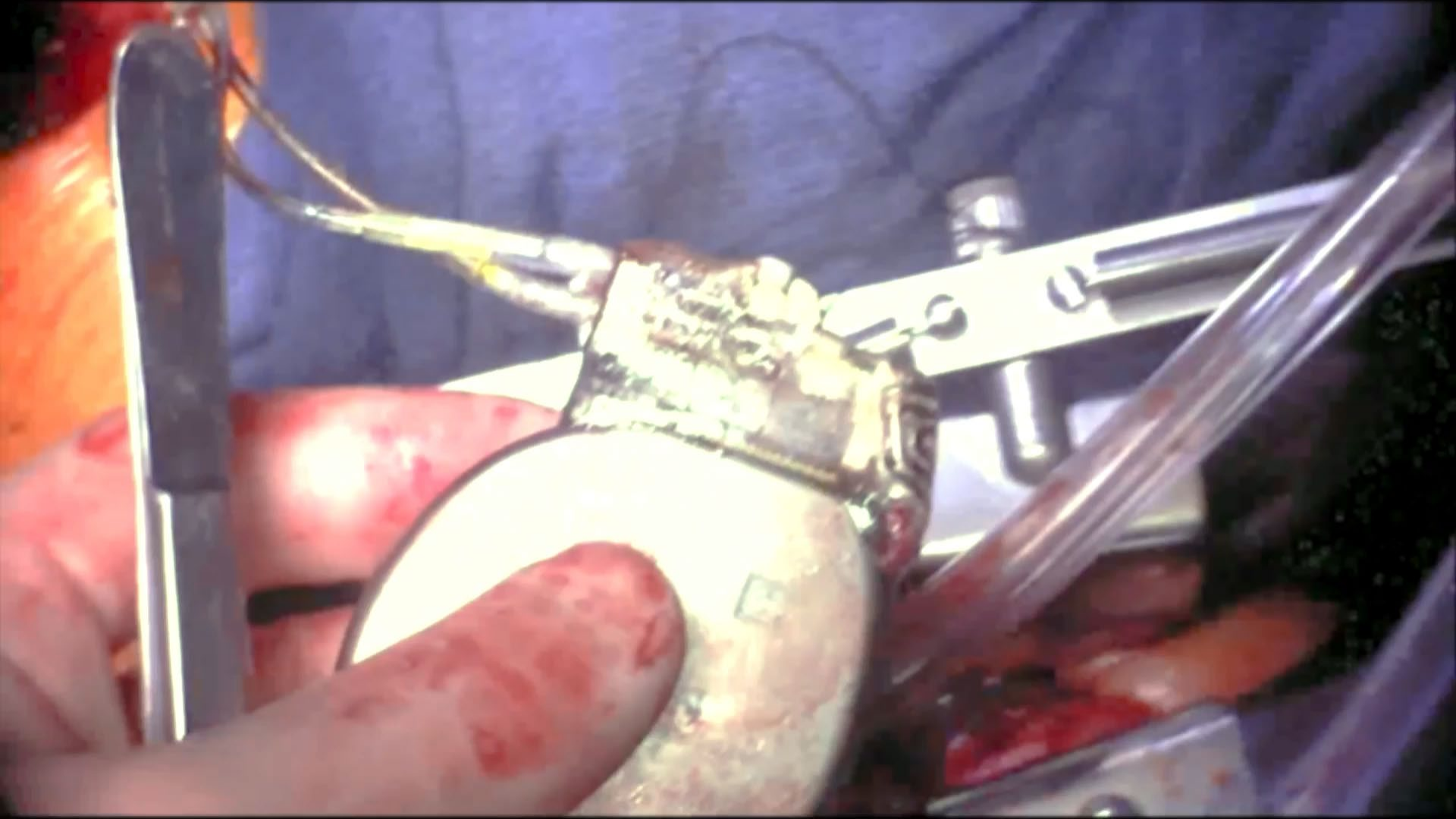
**Cardiovascular:** Regular rate and rhythm; no murmurs; 2+ symmetric pulses

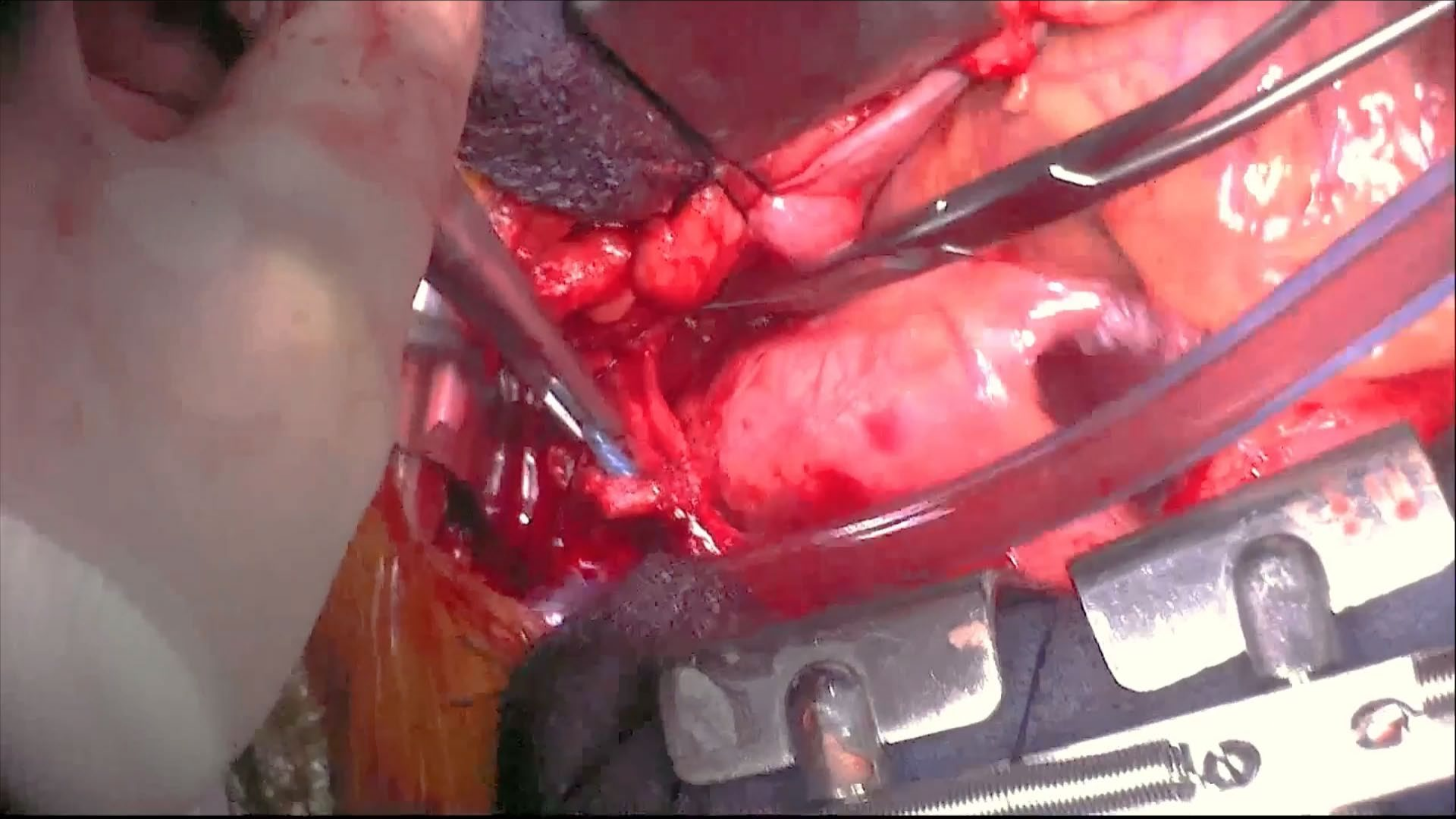
**Respiratory:** Diminished breath sounds at bilateral bases

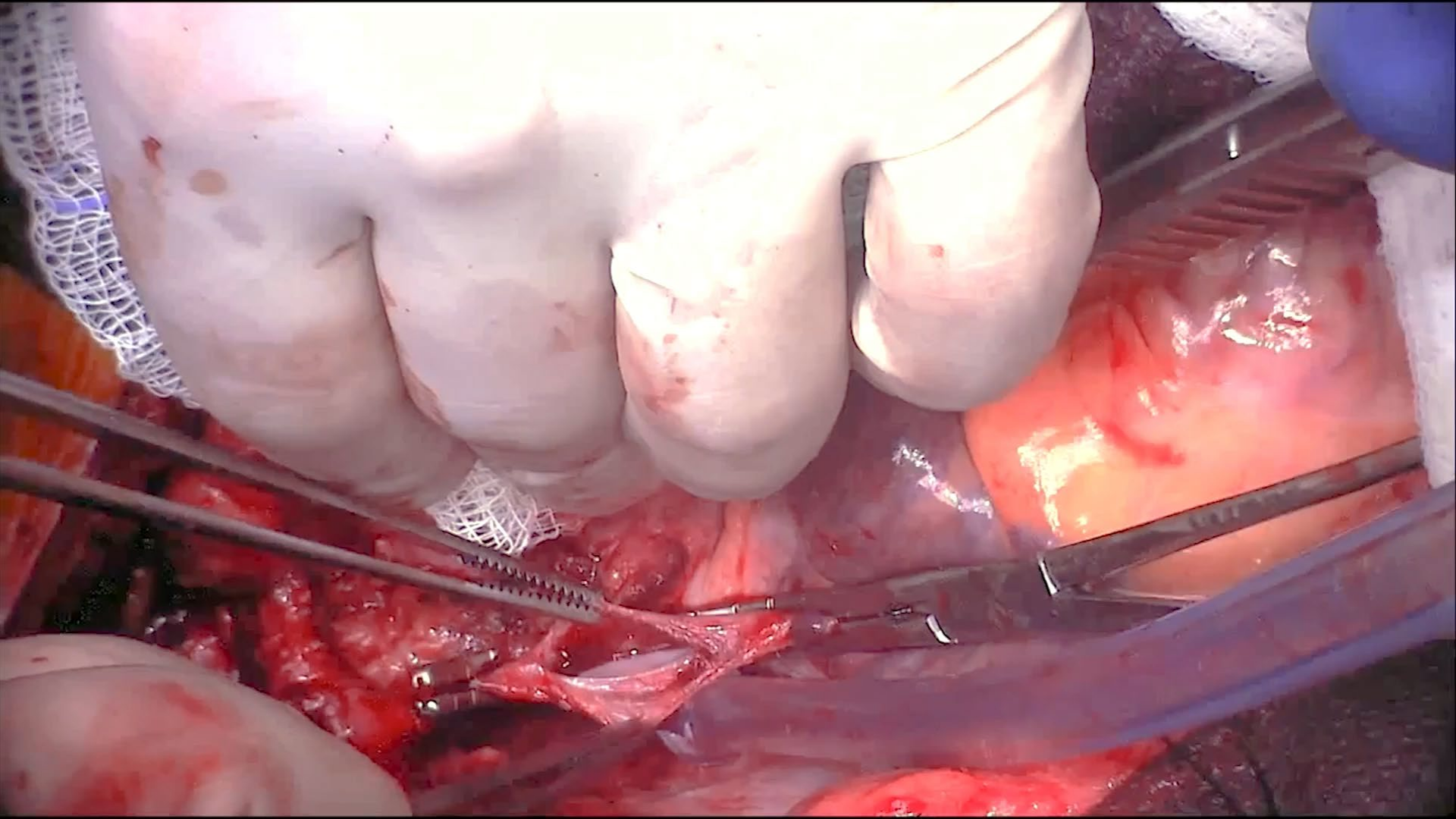


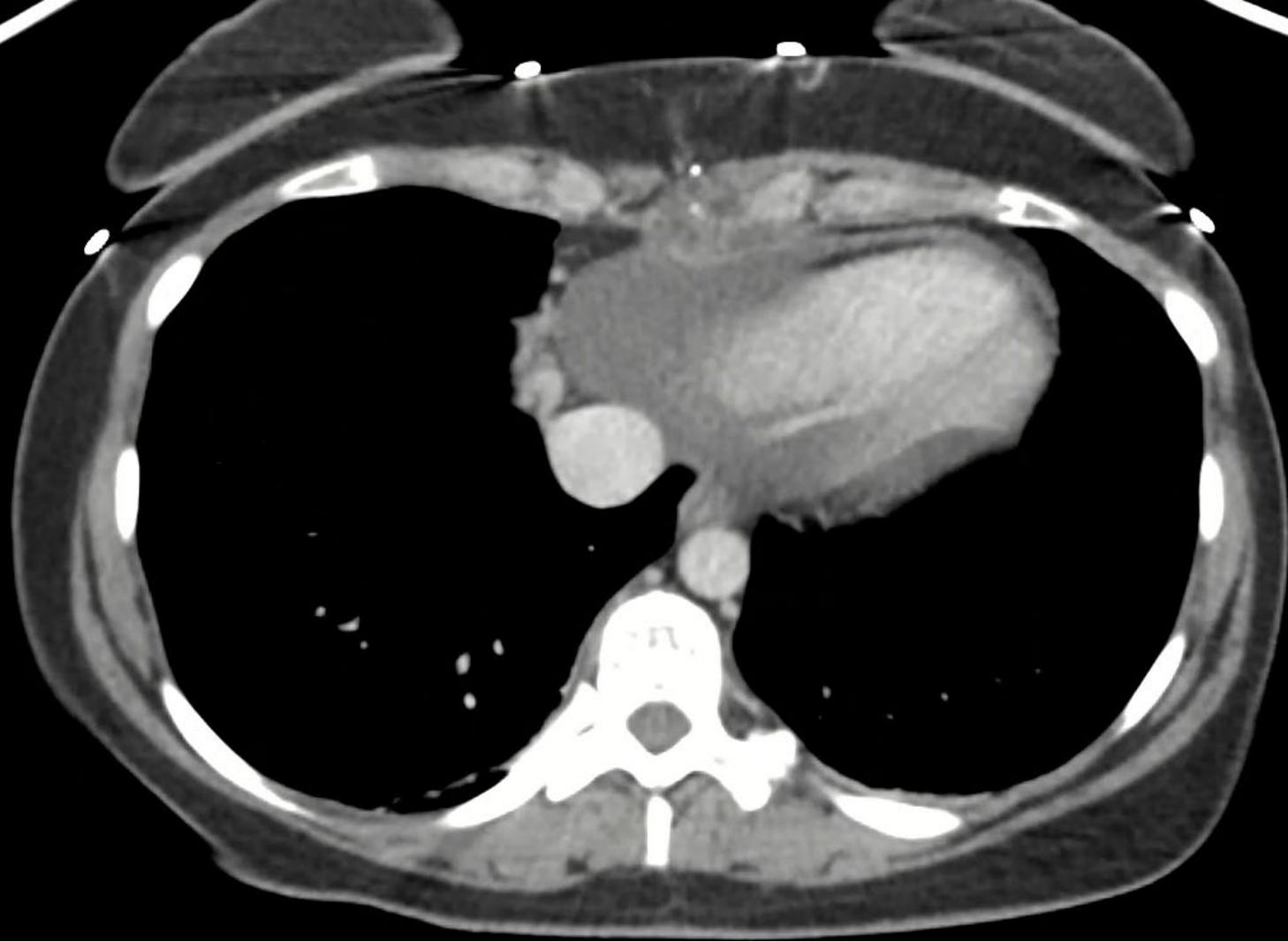






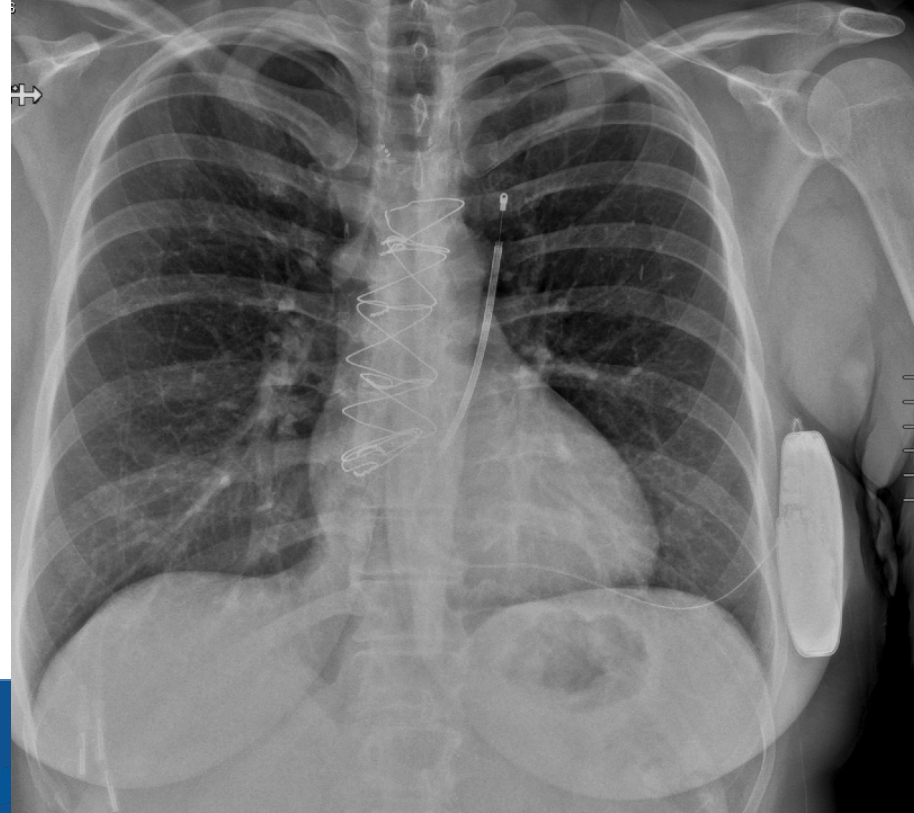






# Follow-up

- 5 months
  - New Subcutaneous ICD
- 11 months
  - No recurrence of SVC syndrome symptoms



# Conclusion

- Autologous femoral vein graft enabled successful SVC reconstruction after failed endovascular approach
- Provided durable symptom relief with maintained graft patency
- Subcutaneous ICD avoided reintroduction of transvenous hardware
- Open reconstruction remains an effective option in complex benign SVC syndrome cases

# References

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2. Rizvi, A. Z., Kalra, M., Bjarnason, H., Bower, T. C., Schleck, C., & Gloviczki, P. (2008). Benign superior vena cava syndrome: stenting is now the first line of treatment. *Journal of vascular surgery*, 47(2), 372-380.
3. Kalra, M., et al. (2003). Open surgical and endovascular treatment of superior vena cava syndrome caused by nonmalignant disease. *Journal of Vascular Surgery*, 38(2), 215–223.
4. Erbella, J., Hess, P. J., & Huber, T. S. (2006). Superior vena cava bypass with superficial femoral vein for benign superior vena cava syndrome. *Annals of Vascular Surgery*, 20(6), 834–838.

# Thank you!

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