



# The Peri-Is of Peri-operative Risk

Cardiac Optimization in Surgical Patients Admitted to Medicine

Jacqueline Levene DO, Melissa LeBlanc MD, Sima Desai MD

Department of Internal Medicine



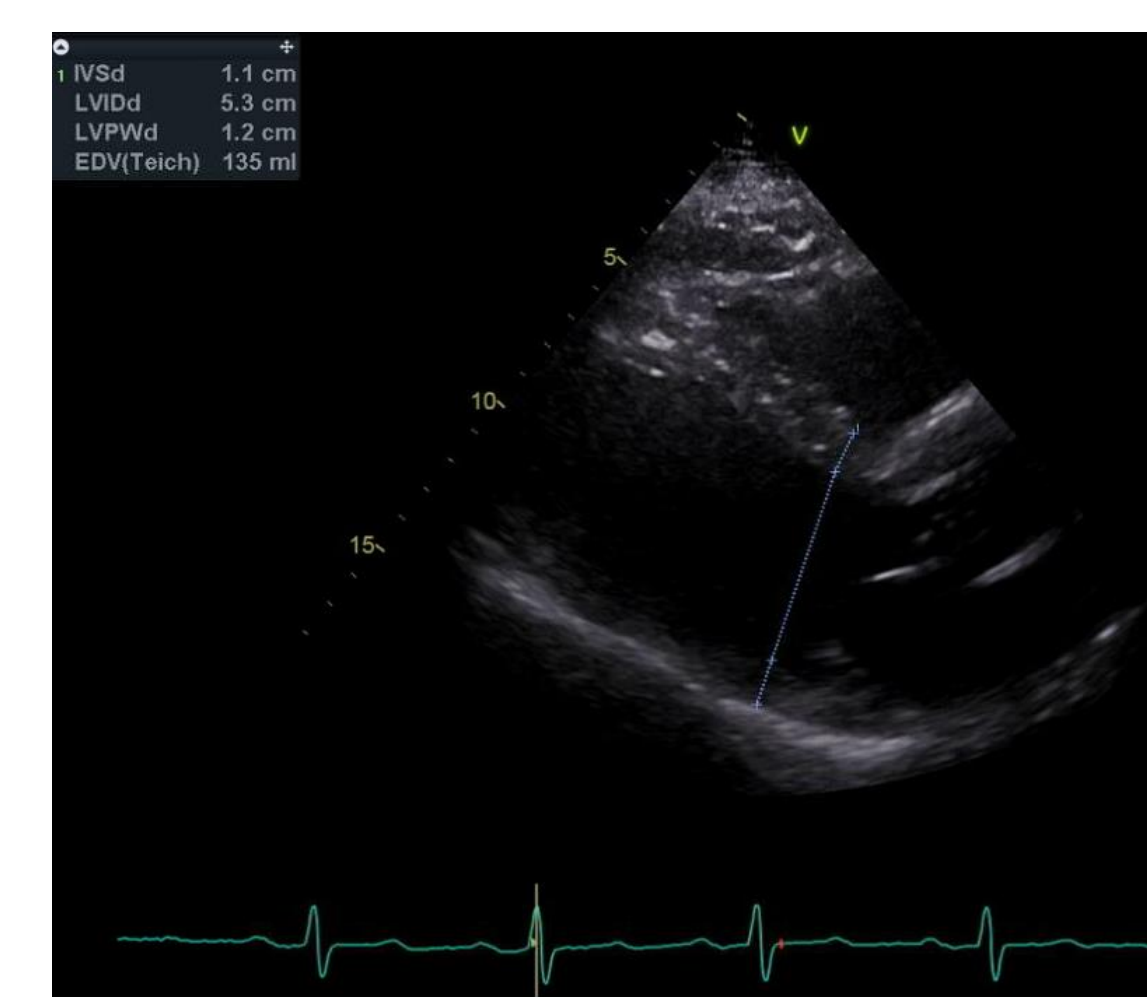
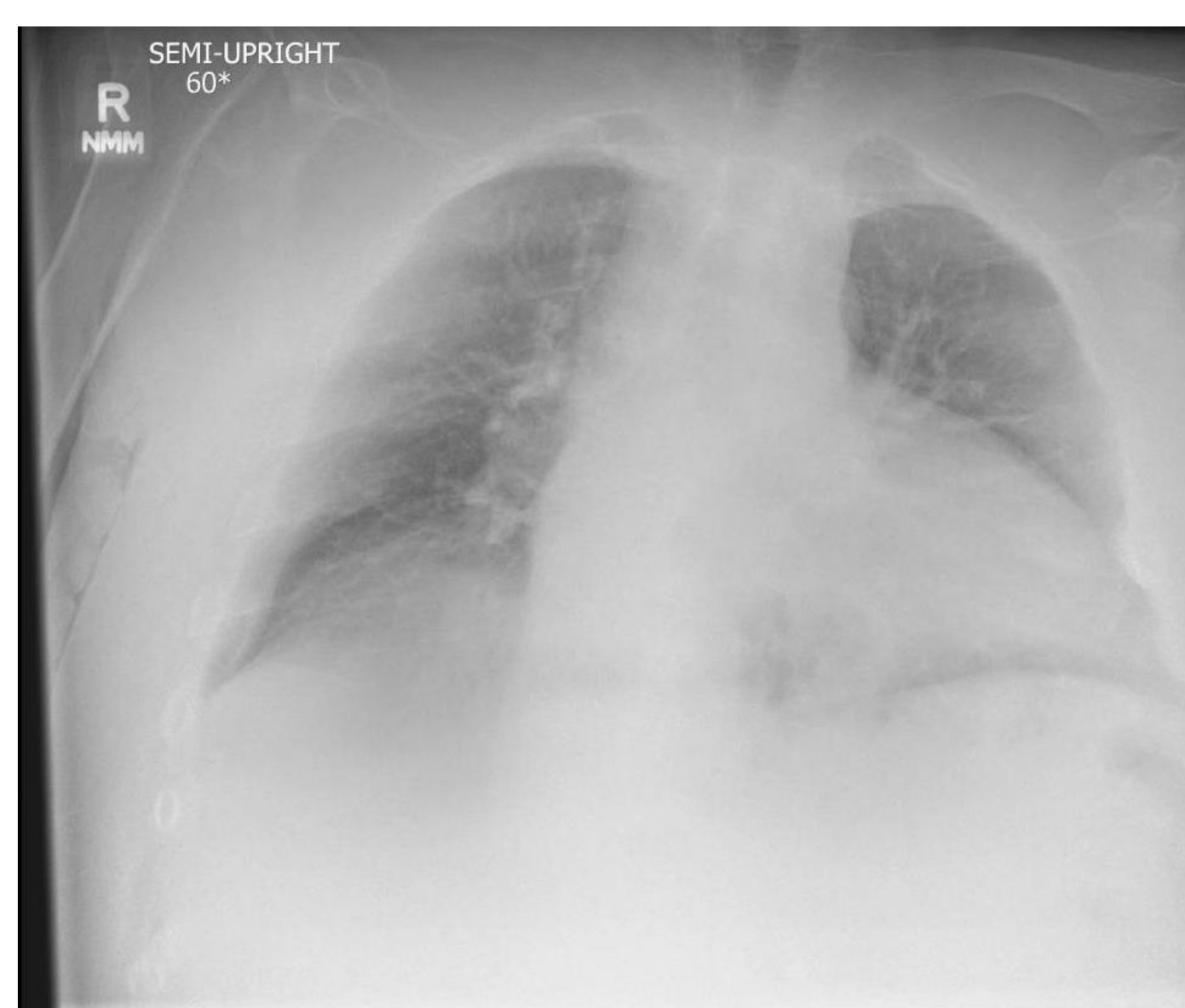
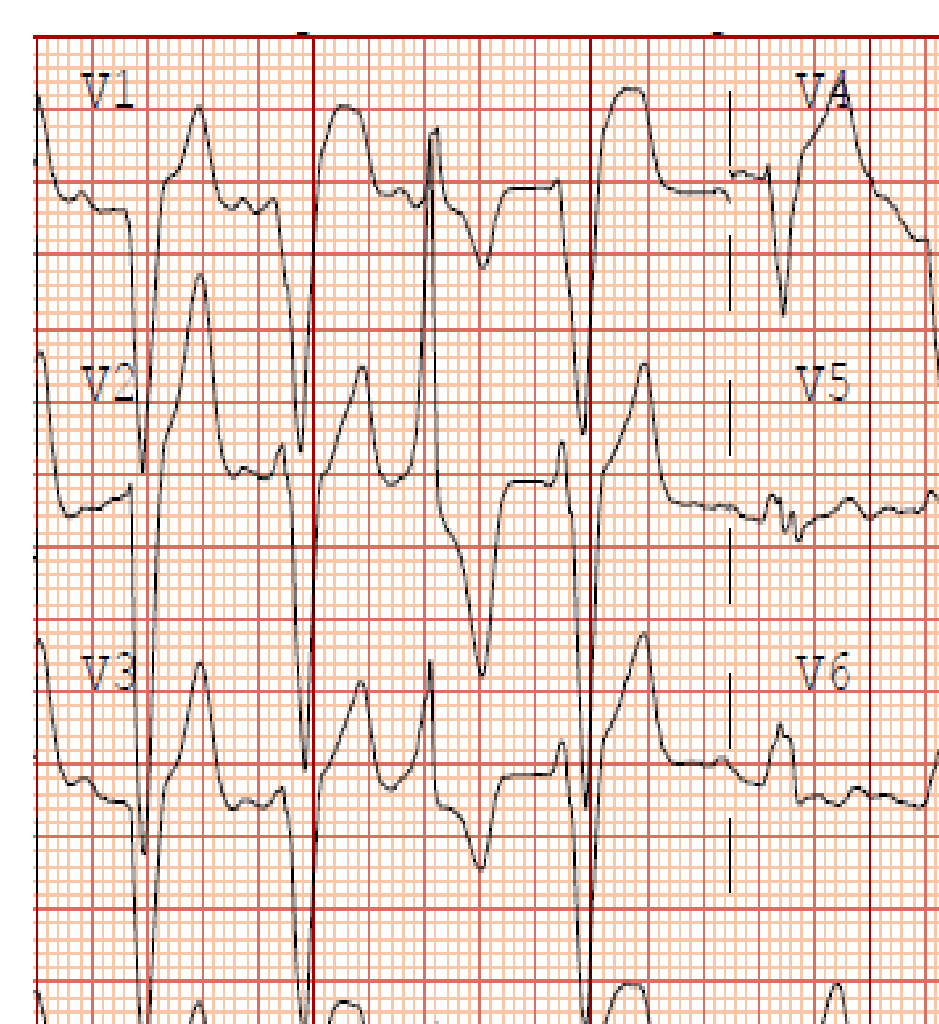
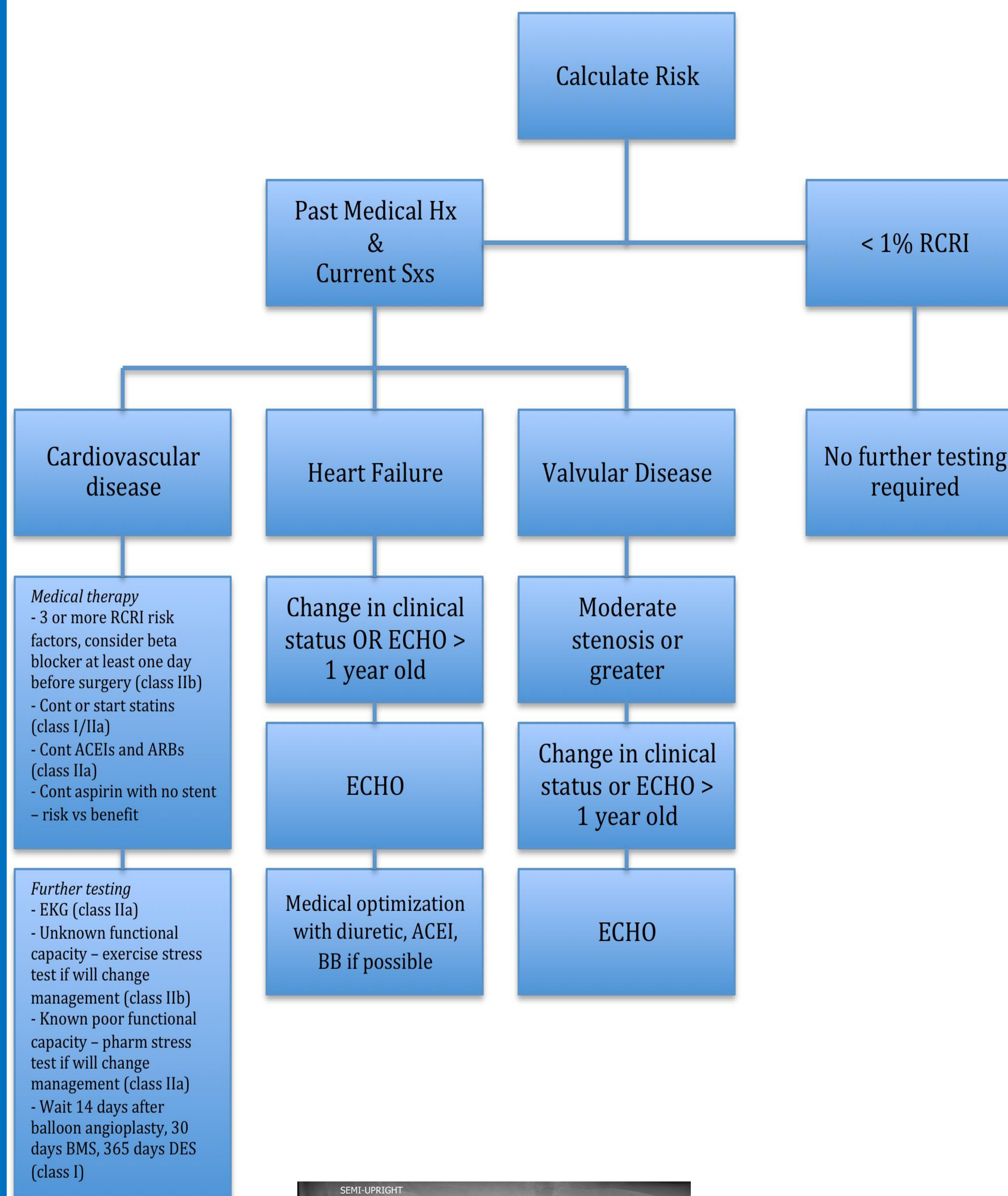
## Introduction

Perioperative risk assessment for patients requiring surgery is nuanced and crucial for patient and clinician decision making. Cardiovascular risk modification and disease optimization are key. This case highlights the importance of perioperative risk assessment and disease optimization strategies used to mitigate risk.

## Case Description

- 64 year man with hx of RCC (s/p R nephrectomy), HTN, mild aortic stenosis, OSA, COPD, and tobacco dependence
- 4 weeks s/p right ankle ORIF with fx and hardware failure c/b abscess/osteomyelitis
- Vitals:** afebrile, normotensive, mild tachycardia, hypoxemic on room air
- Labs:** NrmL WBC and renal function, NTproBNP 2819 (pg/dL), negative troponin
- Physical Exam:** JVP 20 cm, III/VI mid-systolic crescendo-decrescendo murmur at RUSB, bibasilar crackles, erythematous, swollen R ankle, L LE edema
- Dx:** acute decompensated heart failure, right ankle abscess/osteomyelitis
- Last cardiac work-up prior to nephrectomy 6 years ago
  - TTE mild aortic stenosis, mild LVH, normal EF, AVA 1.7 cm<sup>2</sup>
  - No work-up prior to ORIF 4 weeks ago
- New TTE: EF 40%, mild to moderate aortic stenosis, multiple areas of hypokinesis, AVA 1.6 cm<sup>2</sup> (falsely high given EF)
- Hospital Course:** diuresis, continuation of lisinopril, initiation of COPD thx, atorvastatin, smoking cessation
- Surgery ultimately went well

## Inpatient Optimization



## Discussion

- Our patient had no perioperative evaluation prior to his original ORIF despite multiple risk factors
  - His revised cardiac risk index (RCRI) was 7% with a TTE concerning for ischemic heart disease and LBBB.
- Due to the urgent nature of his surgery, surgical intervention or prophylactic coronary revascularization could not be pursued.
- Beta blockers in high risk patients can reduce cardiac risk but must be started 24-48 hours prior to surgery
- Pre-operative testing may not change immediate management, peri-operative testing and appropriate risk assessment may help reduce short term and long-term risk.

## Teaching Points

- Risk vs benefit
- Risk calculation
- Medical optimization
- Will work-up change management

## References

- Cohn SL, et al. Preoperative Evaluation for Noncardiac Surgery. *Annals of Internal Medicine* (2016), doi: 10.7326/AITC201612060.
- Fleisher LA, et al. 2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery: Executive Summary, *Journal of the American College of Cardiology* (2014), doi: 10.1016/j.jacc.2014.07.945.
- Vaishnava P, Eagle KA. Medical Evaluation of the Surgical Patient. In: Jameson J, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J. eds. *Harrison's Principles of Internal Medicine, 20e* New York, NY: McGraw-Hill.