From Subclavian Pseudoaneurysm to STEMI: A Rare Case of Intraoperative Myocardial Infarction

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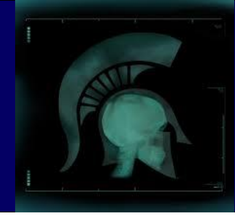

Background

- Perioperative myocardial infarction (PMI)
  - Uncommon occurrence during upper extremity endovascular repair[1]
- Limited data regarding PMI in upper extremity endovascular repair
- Even with less invasive vascular procedures, concerned for intraop ischemic events[1]
- Intentional monitoring such as TEE provides timely detection and directs management[2]

Patient Case & Presentation

- 86-year-old male patient
  - Well-controlled diabetes and hypertension
  - No prior cardiac history
- Underwent angioplasty and stenting for subclavian artery pseudoaneurysm
- Intraoperative complications
  - Developed sudden bradycardia (<40bpm)
  - Hypotension
  - Inferior ST-elevation w/ troponins peaking at 17ng/mL
  - Findings consistent with STEMI

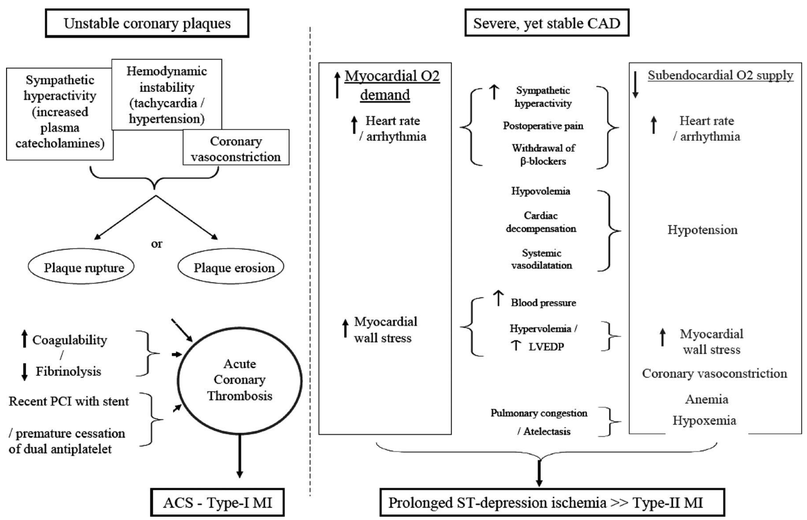

Figure 1: CAD and plaques (1)

Interventions & Timeline

Intraoperatively:

- Patient had ST elevations, bradycardia to 30s, and hypotension
- Concern for acute coronary event
- Tropnonins were 17
- Post op 12 lead EKG showed resolution
- Patient remained intubated and was transferred to the SICU for monitoring
- On arrival at SICU:
- Pt was hemodynamically stable
- Pt was off pressors and on propofol for sedation
- Bilateral upper and lower extremity palpable pulses
- Self extubated around midnight, O2 was at 100% on 4L and patient was alert and following commands

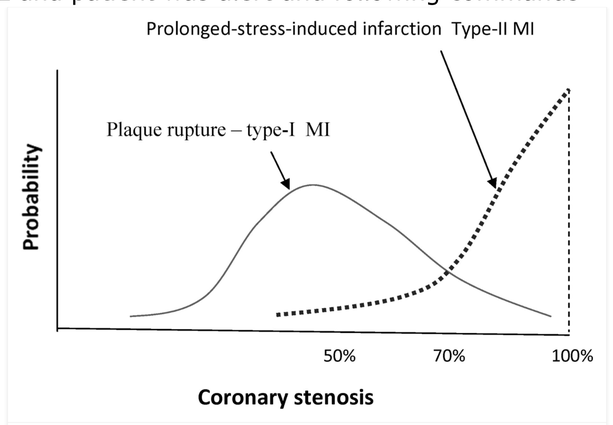

Figure 2: The probability of type 1 and 2 MI as a function of the severity of CAD (1)

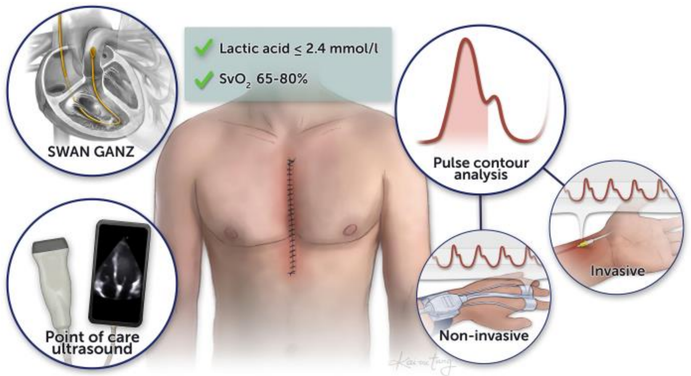

Figure 3: Common invasive and noninvasive hemodynamic monitoring options for management in the cardiac intensive care unit. (2)

Discussion

•Perioperative myocardial infarction (PMI) is a rare but serious complication during non-cardiac vascular surgery, makes recognition difficult

•In this case, continuous intraoperative monitoring enabled early detection of bradycardia and ST-segment elevation, leading to prompt evaluation and stabilization

•The presentation was most consistent with a Type II MI, resulting from supply–demand mismatch rather than plaque rupture. Intraoperative hypotension, bradycardia, and transient coronary hypoperfusion likely contributed

•This case demonstrates the value of vigilant monitoring (EKG, TEE, invasive/noninvasive hemodynamic tools) to rapidly identify ischemia and guide management

•Awareness and documentation of PMI during upper extremity endovascular repair remain limited -> Reporting such cases helps improve understanding of perioperative cardiac risk and prevention strategies

References

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2. Recco DP, Roy N, Gregory AJ, Lobdell KW. Invasive and noninvasive cardiovascular monitoring options for cardiac surgery. *JTCVS Open*. 2022;10:256-263. Published 2022 Apr 11. doi:10.1016/j.xjon.2022.02.028

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