



ST-Segment Myocardial Infarction Secondary to Likely Traumatic Dissection of LAD in the Setting of Polytrauma



Lindsay McHale, MD, CPT, EM₃; Frederic Cole, MD

Introduction

- Blunt chest injury (BCI) in the setting of trauma can have a significant impact on patient outcomes as mortality in this population may be as high as 15%⁽¹⁾
- The exact incidence of BCI is unclear, though it has likely been frequently underdiagnosed^[1,2]
- BCI encompasses a wide array of cardiac pathology, including cardiac contusion, cardiac rupture, and myocardial infarction
- The most common mechanism of BCI is motor vehicle accidents, likely due to a combination of direct trauma to the thorax and injuries sustained during rapid deceleration^[2]
- One of the more rare forms of BCI is coronary artery dissection leading to myocardial infarction, the most susceptible vessel being the left anterior descending (LAD) artery due to its anatomic relationship with the chest wall.^[1]
- This case report demonstrates the need for a high index of suspicion for BCI in thoracic trauma, and the indication for early evaluation with EKG and cardiac enzymes.

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1. "The views expressed in this (article, book, presentation) are those of the Author(s) and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government."

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Excerpted from MAMC Regulation 360-2, para 4, b and OTSG/MEDCOM Policy Memo 16-024

Images

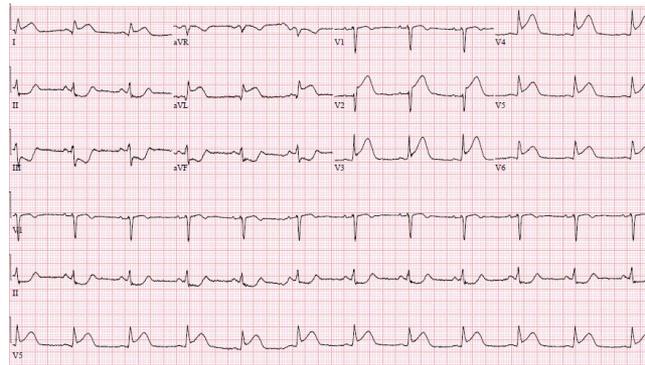
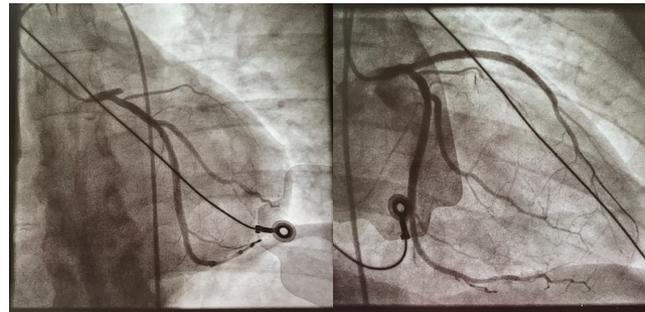


Figure 1: EKG roughly 30 minutes after patient arrival demonstrating hyperacute ST elevation in anterolateral leads with reciprocal ST depressions in the inferior leads



Figures 1, 2: Complete occlusion of LAD on coronary angiography (left) with subsequent reperfusion after placement of DES (right)

Case

- 36 male with no PMHx
- HPI: Level II trauma after high-speed MCC, multiple orthopedic injuries
- ROS: Endorsed chest pain, dyspnea
- FHx: No family history of early cardiac death
- SHx: Denies cocaine use
- PE: Ecchymoses and abrasions over chest, ectopy on cardiac monitoring
- VS: BP 147/88, HR 73
- Labs: initial troponin 0.04 on presentation, peaked at >90 at 12 hours
- Taken to cath lab, 100% occlusion of LAD

Conclusion

- BCI is an increasingly recognized effect of blunt thoracic trauma, and may present with only subtle signs and symptoms, such as acute arrhythmia on telemetry, or in the absence of symptoms altogether.
- EKG and cardiac enzymes should be obtained early in the clinical course of patients with blunt thoracic trauma, and should be repeated serially if suspicion remains.

Resources

1. Shamsi F, Tai JM, Bokhari S. Coronary artery dissection after blunt chest trauma. *BMJ Case Rep.* 2014. Doi 10.1136/bcr-2013-203520
2. Bjørnstad J, Larsen J, Tønnessen T. Coronary artery dissection and acute myocardial infarction following blunt chest trauma. *World J Emerg Surg.* 2009;4:14.