

Addendum 3

Traumatic myocardial infarction visualized by computed tomography angiography

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A 38-year old woman was shot in her chest with a handgun. Upon arrival in the emergency department computed tomography angiography (CTA) was performed.

The entry location of the bullet was clearly visible (A, arrow) with bilateral hemato-pneumothorax with atelectasis and consolidation of both lungs. Image B showed the pathway of the bullet, rupturing the left anterior descending coronary artery (arrow). On the arterial and late phase images there was no enhancement of the anteroseptal and anterior myocardial wall visible (A and C, arrowheads), suggestive of myocardial infarction. Electrocardiography (D) showed ST-segment elevation in leads V2-5. Trans-esophageal echocardiography revealed severe pericardial effusion and akinesia of the left ventricular anterior and anteroseptal myocardial wall. During emergency thoracotomy, traumatic rupture of the mid left anterior descending coronary artery was confirmed. Coronary bypass surgery was performed by a venous graft on aorta and distal left anterior descending coronary artery.

Previously, it was shown that CTA can detect healed myocardial infarcts. (1) This case shows how CTA can visualize an acute traumatic myocardial infarction.

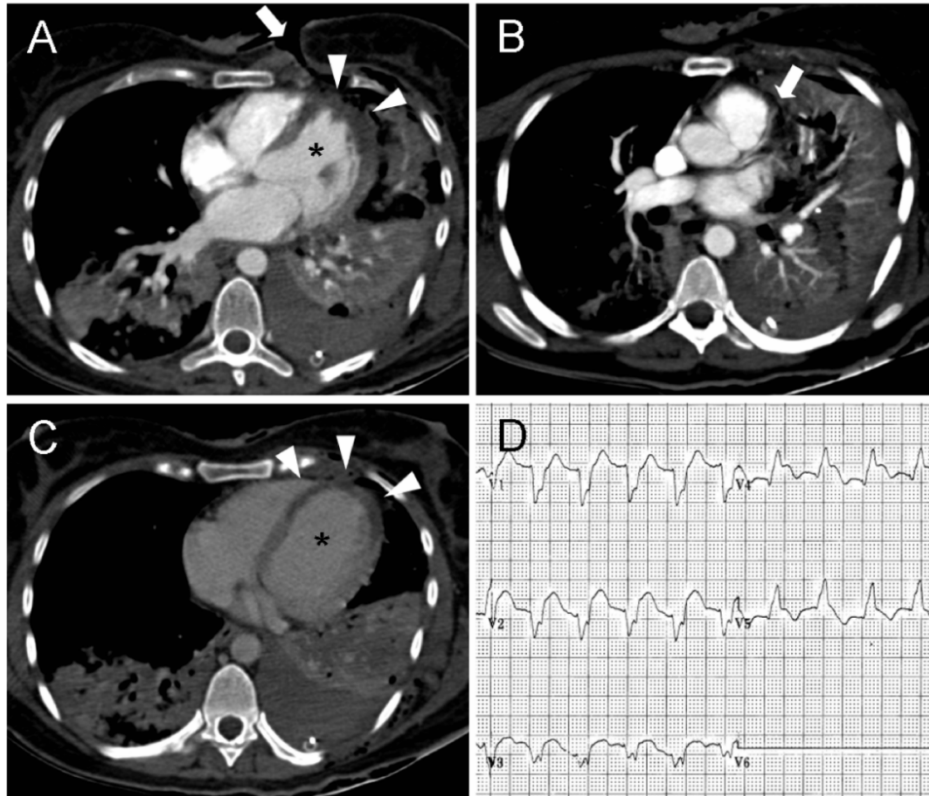


Figure 1. Computed tomography angiography images in transverse orientation (A-C) showing the entry location (A, arrow) and pathway of the bullet rupturing the left anterior descending coronary artery (B, arrow). On the arterial and late phase images there was no enhancement of the anteroseptal and anterior myocardial wall visible (A and C, arrowheads), suggestive of myocardial infarction. Electrocardiography (D) showed ST-segment elevation in leads V2-5. * Indicates left ventricle.

REFERENCES

1. Henneman MM, Schuijf JD, Dibbets-Schneider P, Stokkel MP, van der Geest RJ, van der Wall EE, Bax JJ. Comparison of multislice computed tomography to gated single-photon emission computed tomography for imaging of healed myocardial infarcts. *Am J Cardiol.* 2008;101:144-148