Traumatic myocardial infarction visualised by computed tomography angiography

J. G. J. Groothuis · M. R. Meijerink · A. C. van Rossum

Published online: 24 May 2011

© Springer Media / Bohn Stafleu van Loghum 2011

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

The entry location of the bullet was clearly visible (Fig. 1a, arrow) with bilateral haematopneumothorax with atelectasis and consolidation of both lungs.

J. G. J. Groothuis

Interuniversity Cardiology Institute of the Netherlands,
Utrecht, the Netherlands

J. G. J. Groothuis (✉) · A. C. van Rossum

Department of Cardiology, VU University Medical Center,
Room 5 F003, De Boelelaan 1117,
1081 HV Amsterdam, the Netherlands
e-mail: j.groothuis@vumc.nl

M. R. Meijerink

Department of Radiology, VU University Medical Center,
Amsterdam, the Netherlands

Figure 1b shows the pathway of the bullet, rupturing the left anterior descending coronary artery (arrow). On the arterial and late phase images no enhancement of the anteroseptal and anterior myocardial wall was visible (Fig. 1a and c, arrowheads), suggestive of myocardial infarction. Electrocardiography (Fig. 1d) showed ST-segment elevation in leads V2-5. Transoesophageal 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 the aorta and distal left anterior descending coronary artery.

Previously, it was shown that CTA can detect healed myocardial infarction [1]. This case shows how CTA can visualise an acute traumatic myocardial infarction.

Fig. 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*). No enhancement of the anteroseptal and anterior myocardial wall was visible (**a** and **c**, *arrowheads*), suggestive of myocardial infarction. Electrocardiography (**d**) showed ST-segment elevation in leads V2–5. * Indicates left ventricle

Reference

1. Henneman MM, Schuijf JD, Dibbets-Schneider P, et al. Comparison of multislice computed tomography to gated single-photon emission computed tomography for imaging of healed myocardial infarcts. *Am J Cardiol.* 2008;101:144–8.