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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

ST segment elevation myocardial infarction caused by post-traumatic coronary artery perforation

Zawał serca z uniesieniem odcinka ST wywołany pourazową perforacją tętnicy wieńcowej

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A 54-year-old male was admitted to the intensive care unit due to an alcohol abuse-related multiple organ trauma that included 2nd–10th left rib fracture and tetraparesis. The initial 12-lead electrocardiogram revealed ST-segment elevation myocardial infarction of the anterior wall (Fig. 1). The immediate coronary angiography revealed a perforation of the left anterior descending artery with a contrast extravasation to the myocardium and to the lumen of the left ventricle (Fig. 2). The lesion was successfully treated with a direct implantation of a 2.5 × 20 mm Papyrus® (Biotronik, Germany) stent graft (Fig. 3). The post-procedural echocardiography revealed a normal ejection fraction without any significant valvular abnormalities or pericardial effusion. ST-segment resolution was achieved and a significant decrease of troponin serum concentration from 214 to 135 pg/mL (normal values below 0.014 pg/mL) was observed. Unfortunately, the patient's hospital course was complicated by sepsis, which manifested as tetraparesis caused by neuroinfection; computed tomography excluded other causes of this symptom. In addition, the patient developed severe renal insufficiency, which required immediate dialysis. The intravenous antibiotic treatment (Vancomycin, Ciprofloxacin) was introduced, but without significant patient improvement. Finally, the patient died on the 32nd day after admission. Complete coronary artery rupture and intimal tearing during non-penetrating traumatic injury of the heart are rare findings. Most cases are lethal, either as a result of the trauma or as a consequence of the haemodynamic state deterioration, and haemopericardium with subsequent cardiac tamponade is considered as a direct cause of death. In our patient, the direct contact between the coronary artery and the left ventricle lumen resulted in the absence of pericardial effusion and cardiac tamponade, which probably kept the patient stable early after the injury. To the best of our knowledge, there was no previously described successful treatment of trauma-related coronary artery perforation with a stent graft implantation. It should be kept in mind that perforation of the coronary artery is a possible cause of myocardial infarction in patients with a chest injury. Intracoronary stent graft implantation could be a safe and effective approach in a such clinical scenario.

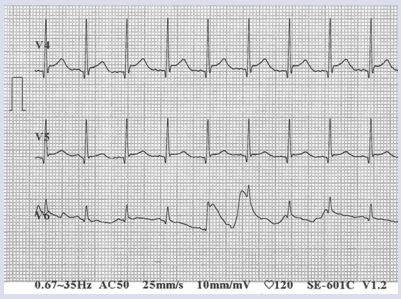

Figure 1. Sinus tachycardia 120/min, ST elevation in leads V4 and V5

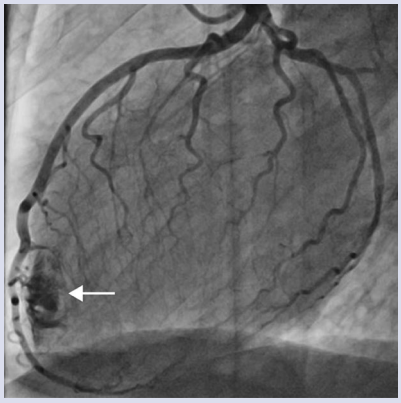

Figure 2. Laceration of the left anterior descending artery wall within segment 8 with the contrast media extravasation into myocardium and the lumen of the left ventricle (arrow)

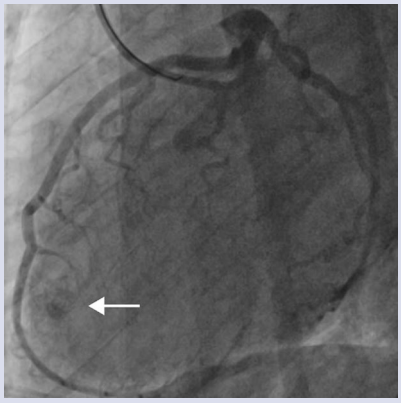

Figure 3. Post-direct stent graft implantation status — vessel wall healing with only slight intra-myocardial effusion of the contrast media (arrow)

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Conflict of interest: *none declared*