

Unexpected complication- fracture of the IVUS catheter and percutaneous retrieval of a broken IVUS catheter tip from the right coronary artery



Beklenmedik komplikasyon-IVUS kateterinin kırılması ve perkütan yolla, sağ koroner arterden kırık IVUS kateter parçasının çıkarılması

Fracture of the IVUS catheter is very rare and, but when occurs they may lead to life-threatening complications, such as embolization, thrombus formation and perforation. A 58-year-old man who had history of smoking, dyslipidemia and type II diabetes mellitus presented with an inferior ST-elevation myocardial infarction and underwent emergent coronary angiography. His coronary angiography showed non-significant stenosis of the mid portion of left anterior descending artery and 60% stenosis of the mid portion of the right coronary artery (RCA) (Fig. 1, Video 1. See corresponding video/movie images at www.anakarder.com). A complex RCA lesion was suspected, prompting further interrogation with the use of intravascular ultrasound (IVUS) catheter. A 7 French (F) JR 4.0 cm guiding catheter was engaged in the RCA and a floppy guidewire was inserted into the RCA. When the 2.9 F iMAP-IVUS catheters (Boston Scientific, Santa Clara, CA, USA) were withdrawn under fluoroscopy without resistance, the distal marker IVUS catheter was separated and this segment was moved toward the postero-lateral artery (Fig. 2, Video 2. See corresponding video/movie images at www.anakarder.com). We realized the tip of IVUS catheter had broken off. A variety of catheter devices, including the loop snare catheter, basket catheter and grasping/biopsy forceps was developed and using these devices, foreign bodies could be retrieved cooperatively safely and promptly. Percutaneous retrieval of the broken segment was attempted. Snare catheter was passed over the guidewire and inserted

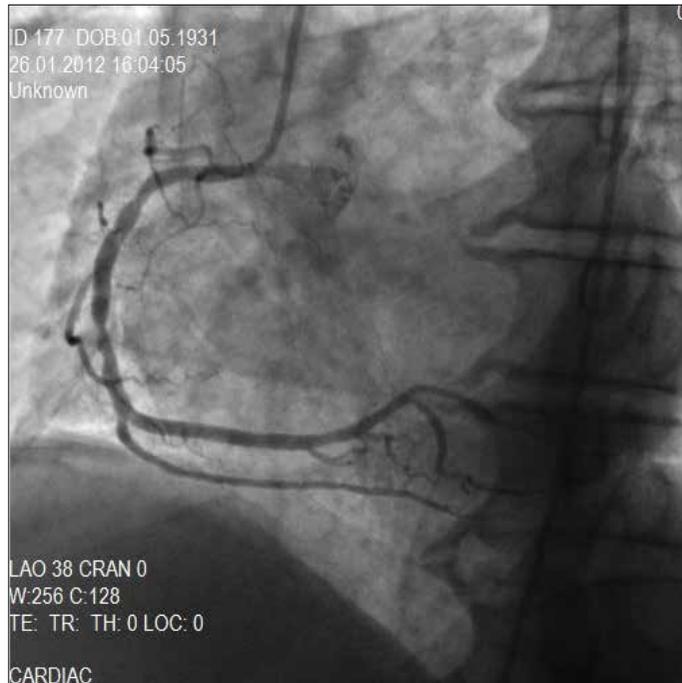


Figure 1. Right coronary angiography revealed a 60% stenosis of mid portion of the right coronary artery

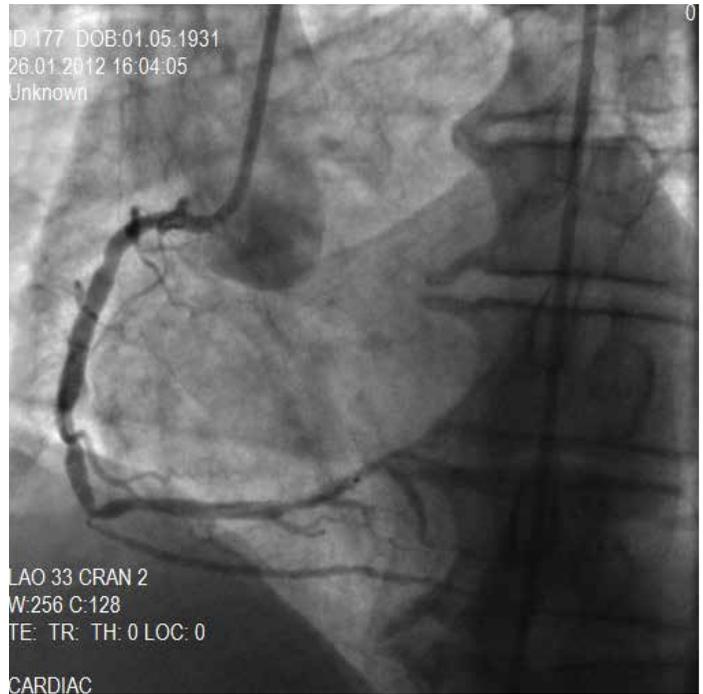


Figure 2. During withdrawal of the catheter, the distal marker of IVUS catheter was separated and this segment was moved toward the PLA
IVUS - intravascular ultrasound, PLA - postero-lateral artery

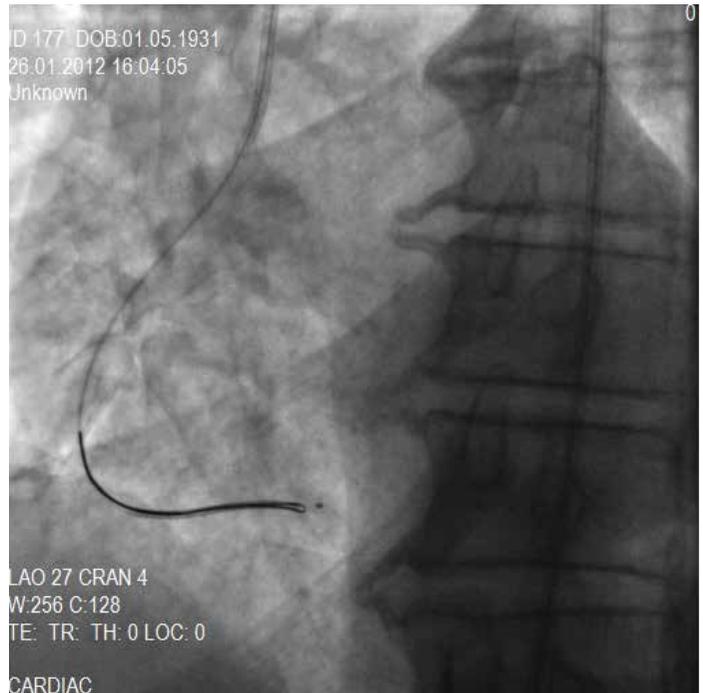


Figure 3. Loop snare catheter was passed over the guidewire and inserted through a 4F transport catheter

through a 4F transport catheter. The loop snare caught the IVUS catheter tip securely and resulting in the successful retrieval of the IVUS catheter tip (Fig. 3, 4, Video 3. See corresponding video/movie images at www.anakarder.com). The common mechanism of broken IVUS catheter includes malopposed stent struts, catheter deformation from multiple uses, catheter entrapment in the calcific segment and forceful manipulation. In this case possible mechanisms of this complication are warming of the catheter due to long operation time and catheter

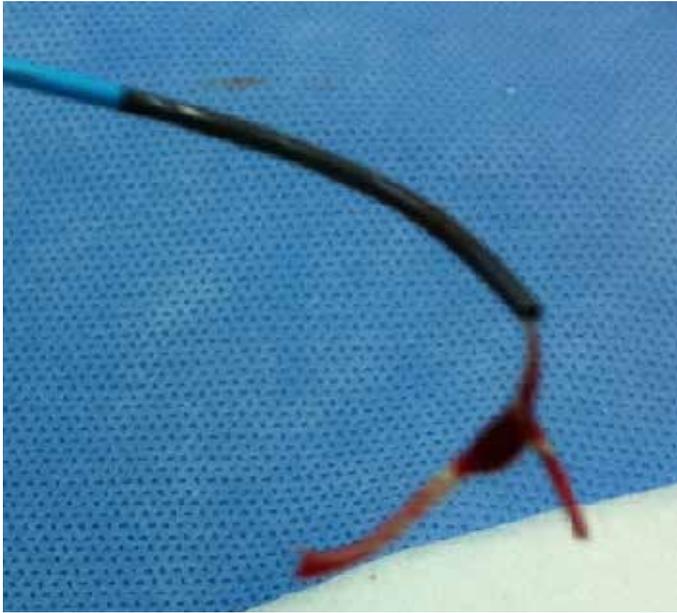


Figure 4. View of the retrieved IVUS catheter tip

IVUS – intravascular ultrasound

deformation from multiple uses. In conclusion we suggest that multiple use of IVUS catheter should be avoided.

Video 1. Right coronary angiography revealed a 60% stenosis of mid portion of the right coronary artery

Video 2. During withdrawn of the catheter, the distal marker of IVUS catheter was separated and this segment was moved toward the PLA

IVUS - intravascular ultrasound, PLA - postero-lateral artery

Video 3. Loop snare catheter was passed over the guidewire and inserted through a 4F transport catheter

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Acute myocardial infarction secondary to blunt chest trauma treated with thrombus aspiration



Trombüs aspirasyonu ile tedavi edilen künt göğüs travmasına bağlı akut miyokart enfarktüsü

A 34-year-old male patient was admitted to our emergency department with chest pain. Patient had a history of blunt chest trauma by

receiving a blow of fist in a fight six hours prior to his admission. On physical examination, palpation revealed tenderness on left side of the chest wall. No murmurs were heard and lungs were clear. Electrocardiography was equivocal for acute coronary syndrome and acute pericarditis (Fig. 1). Transthoracic echocardiography demonstrated anteroapical wall hypokinesia with a localized, minimal pericardial effusion adjacent to right ventricle. Left ventricular ejection fraction (LVEF) was 45%. Since there was wall motion abnormality, urgent coronary angiography was planned. Coronary angiography demonstrated intraluminal thrombosis in proximal region of left anterior descending coronary artery which was already embolized distal of the artery (Fig. 2, Video 1. See corresponding video/movie images at www.anakarder.com.

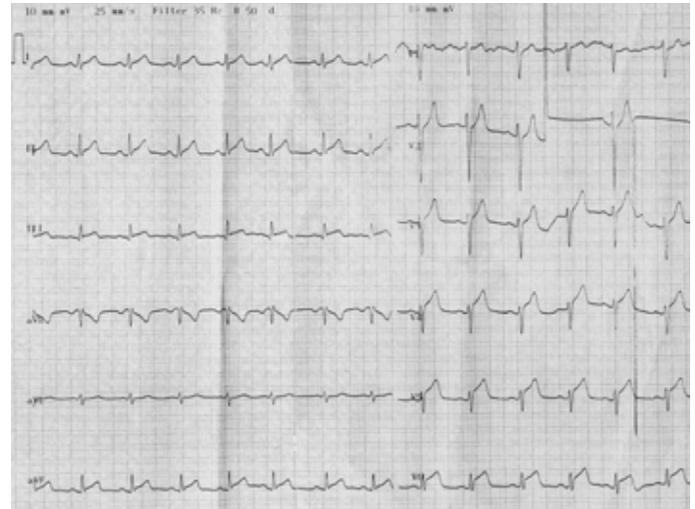


Figure 1. Electrocardiography showing diffuse ST segment elevation without pathological Q wave and reciprocal ST segment depression. Note that, slender PR segment depression in inferior derivation, PR segment elevation in aVR and ST elevation is concave-upward in all derivations except lateral derivations

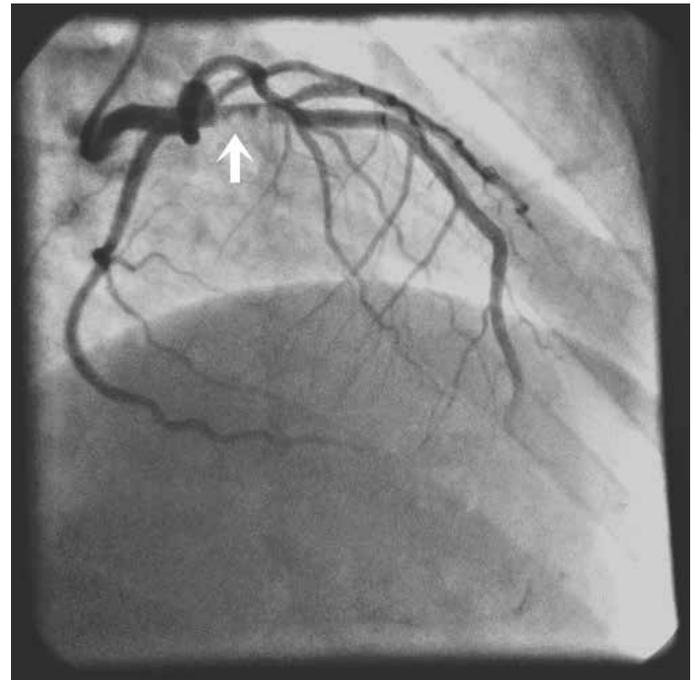


Figure 2. Coronary angiography showing intraluminal thrombosis (arrow) in proximal region of left anterior descending coronary artery which was already embolized distal of the artery