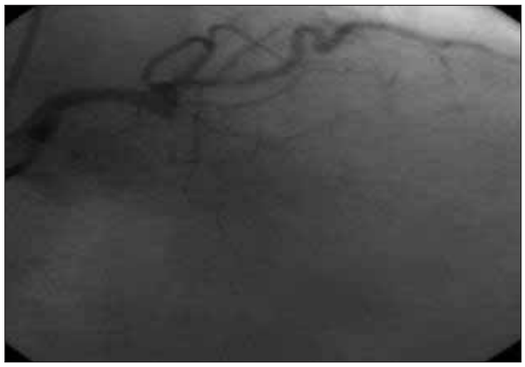

Figure 2. Left anterior descending artery ostial occlusion (LAO-0, Cranial 40 degrees)
LAO-left anterior oblique view

Figure 3. Right coronary artery injection (LAO 0, Cranial 30 degrees)
LAO-left anterior oblique view

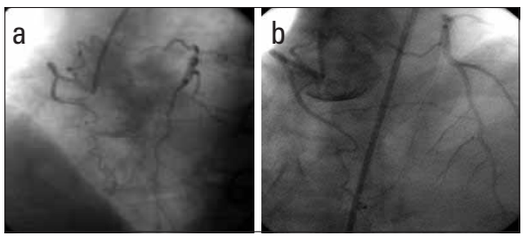

Figure 4A. Opacification of Left anterior descending artery through selective conus artery injection (LAO 40, Cranial 20 degrees) B. Selective conus artery injection (LAO 0, Cranial 30 degrees)
LAO-left anterior oblique view

echocardiography and ventriculography) a selective CA injection was performed through which a large LAD lumen could be visualized (Fig. 4). The patient was referred for coronary artery bypass surgery with two-vessel disease including ostial LAD occlusion. In this case, the indicators of viability in LAD region led us to search other collateral pathways which can not be detected by standard angiographic views. After detecting the separate ostium of the CA, a selective CA injection was made through a side holed 6F Judkins right guiding catheter, which was preferred to avoid total occlusion of the small diameter CA. In practice, with acceptance of a very short pressure damping time and with no test injection; quick withdrawal of the catheter after injection may be safe for selective imaging of the CA. And if selective engaging to the ostium of the CA is not possible a multislice computerized tomography may be an appropriate alternative diagnostic tool. As the quality of distal lumen (diameter, length and absence of distal stenoses) in totally occluded arteries, especially when LAD is concerned is critical in planning surgery every effort is warranted to adequately document it.

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Catheter-induced multiple spasms in the right coronary artery

Sağ koroner arterde kateterin indüklediği çoklu spazm

A 52-year-old male, with multiple risk factors for coronary artery disease was referred to the cardiology clinic. Non-invasive tests suggested myocardial ischemia and the patient underwent a coronary angiography. He had plaques on both the left anterior descending and the circumflex coronary arteries. The right coronary artery had significant stenosis in three locations (Video 1. See corresponding video/movie images at www.anakarder.com). Sixty seconds after intracoronary administration of 100 µcg nitroglycerine the stenoses completely resolved (Fig. 1, Video 2. video/movie images at www.anakarder.com). The patient appeared to have catheter-induced multiple coronary artery spasms (CAS) and remained symptom free with medical treatment.

Catheter-induced CAS is usually recognized by a smooth concentric narrowing less than 2 mm long in the right coronary artery next to the tip of the catheter. The catheter type, excessive manipulation, the lack of o perator experience and the patient's sensitivity can precipitate the

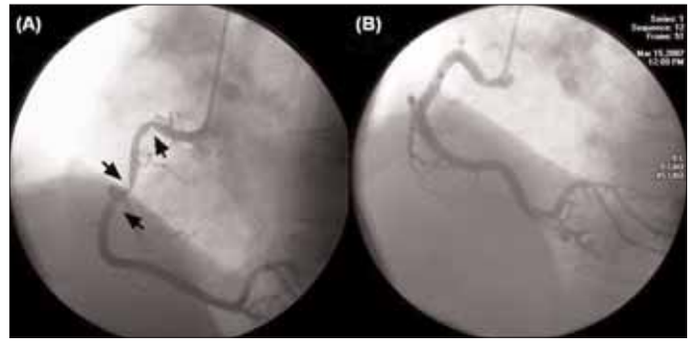

Figure 1. a) The right coronary artery with catheter-induced CAS in three segments (mimicking critical coronary stenosis)
b) Complete resolution of CAS following intracoronary administration of 100 µcg nitroglycerine
CAS-coronary artery spasm

occurrence of catheter-induced CAS. The latter often happens when the tip of the catheter enters the right coronary artery at an angle producing proximal vessel tenting. Multiple spasms in one single coronary artery, as in our patient, are rare and can mimic fixed coronary stenosis. These often easily reversible spasms can be easily misinterpreted as a fixed lesion and may lead to acute coronary syndromes.

It should also be kept in mind that catheter-induced CAS can occur in multiple sites, as in our case, away of the catheter tip. Routine use of intracoronary vasodilators in patients with significant lesions in coronary arteries can help to avoid misinterpreting catheter-induced CAS as an atherosclerotic lesion.

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Spontaneous pectoral hematoma secondary to enoxaparin for the treatment of deep venous thrombosis in an elderly man

Derin ven trombozu tedavisi için kullanılan enoksaparine bağlı spontan pektoral hematom

An 81-year-old man presented to emergency department with the complaint of calf pain. Venous Doppler ultrasound revealed deep vein thrombosis (DVT). Low molecular weight heparin (enoxaparin) 1 mg/kg twice daily was ordered. A large pectoral ecchymosis with rapid and painful enlargement extending to the contralateral site of the chest and abdominal wall was observed on the second day (Fig. 1). Computed tomography of the thorax showed a 25x15x10 cm subpectoral hematoma on the left side (Fig. 2). Hematoma was evacuated. Acute DVT treatment was started with intravenous unfractionated heparin 20,000 Units/24 hours as continuous intravenous infusion as soon as the bleeding was controlled. He was discharged uneventfully on the 7th postoperative day with compressive bandages to lower extremity, advises for mobilization and oral anticoagulant for long-term therapy.

Early drainage was preferred as surgical treatment to reduce the progressive pain and to control hemorrhage, which was thought to be the appropriate management, because the freshly bleeding vessels are more likely to be controlled than that from incomplete chronic hematoma with local inflammation. The incomplete haemostatic plugs may have interrupted the access of activated factor VII to the sites of vascular injury where tissue factor appears and platelets adhere.

The extended use of enoxaparin for the treatment of deep venous thrombosis requires the physicians to be vigilant of such rare complication. We must keep in mind that, major hemorrhage may be more likely in elderly patients with chronic liver disease or impaired renal function and, in patients receiving warfarin, aspirin, proton pump inhibitors or prolonged enoxaparin therapy.

Figure 1. Pectoral hematoma with extensive ecchymosis extending to entire abdomen (A: Frontal view, B: Oblique view)

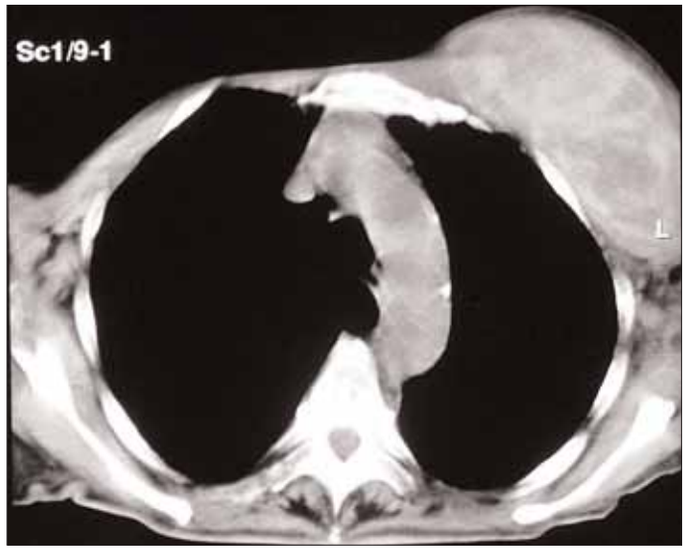

Figure 2. Computed tomography of thorax showing left pectoral hematoma

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