

Should Every Coronary Chronic Total Occlusion be Treated Invasively?

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Dear Editor,

A 48 year-old female patient presented with recurrent Canadian class 2 angina-equivalent chest pain. She had inferior myocardial infarction two years ago. In addition, she was under medication for hypertension. In the first presentation, patient was taking aspirin 100 mg and ramipril/hydrochlorothiazide 5/12.5 mg once a day as medical treatment. Electrocardiography showed pathological Q waves on inferior derivations, whereas, echocardiogram revealed a normokinetic left ventricular wall. Further coronary ischemia indicating tests including treadmill and scintigraphy were not performed. Coronary angiography showed total occlusion of proximal right coronary artery (RCA) once after sinus branch. However, there was thrombolysis in myocardial infarction (TIMI) 3 flow through the RCA, which was provided by proximally originating multiple collateral branches (Figure 1, 2). The occluded segment was short, and inattentive assessment could interpret RCA to have a normal flow without significant stenosis, hence, collaterals was coursing over the occluded segment in unison. Medical following was proposed for the patient. Patient was discharged with a medical recipe including aspirin 100 mg, ramipril/hydrochlorothiazide 5/12.5 mg, atorvastatin 20 mg, bisoprolol 5 mg and benipin 4 mg. Sixth month follow was uneventfull.

Coronary chronic total occlusion (CTO) lesions are defined as the coronary lesions with TIMI-0 flow, within the occluded segment along with angiographic or clinical evidence of occlusion duration >3months. They account for about one-third of the coronary lesions. The technical success for PCI of CTO was below the 50 % in the early period of percutaneous cor-

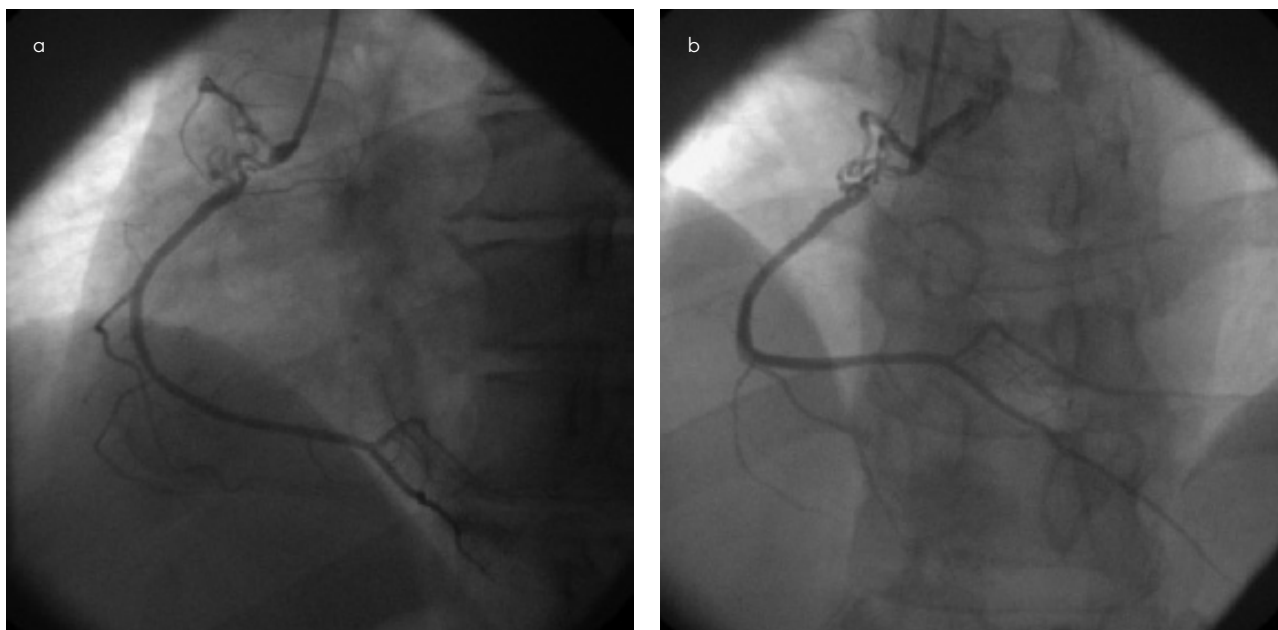


FIGURE 1. a, b. Left anterior oblique (a) and anterior cranial projection (b) showing the right coronary artery

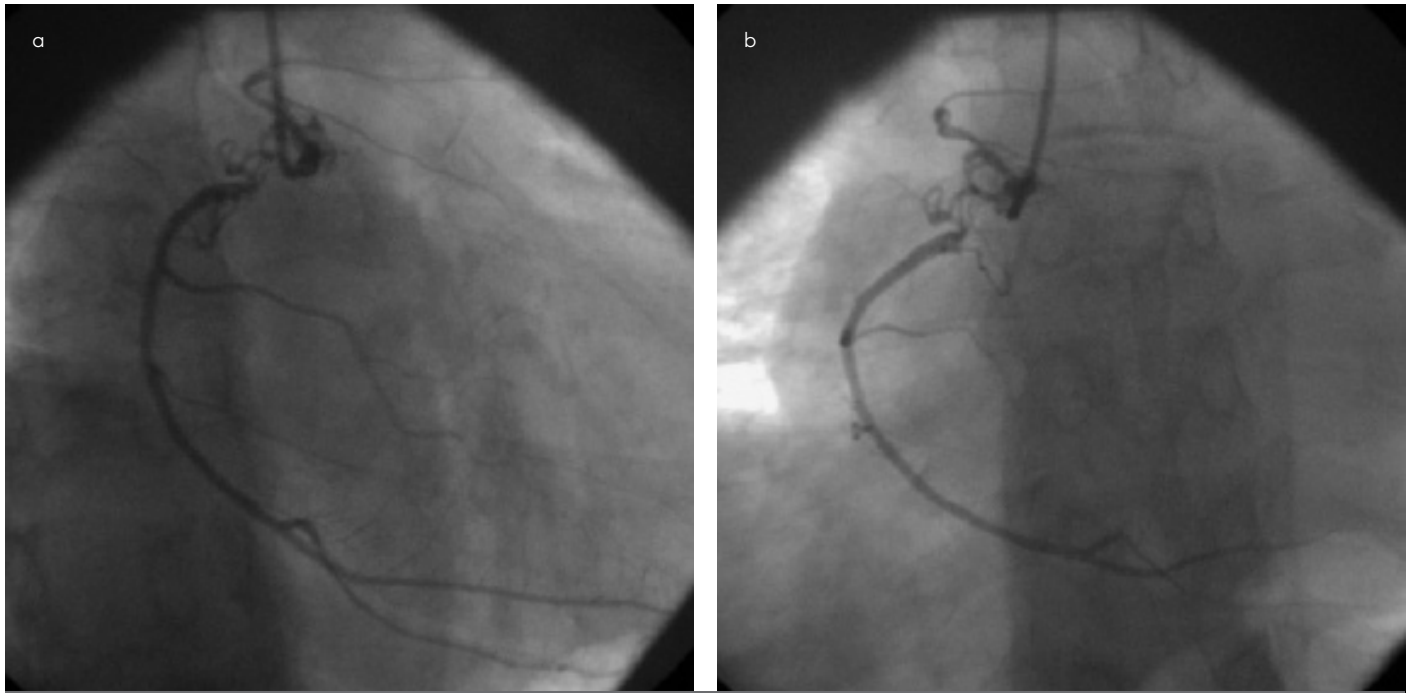


FIGURE 2. a, b. Right anterior oblique caudal (a) and anterior caudal (b) projection showing the right coronary artery

onary interventions' era and majority of the cases was treated either medically or surgically (3). However, due to advancement of guidewires, devices, and techniques in recent years, successful recanalization may now be achieved in as many as 80% of the CTO lesions. Parallel to technical improvements, the number of CTO procedures was increased markedly and many operators, who defend the open-artery hypothesis, encouraged to perform such procedures more commonly. On contrary, all the successful intervention does not lead to improvement in the clinical status of the patients. Thus, all the CTO cases should be evaluated in detail before such complex procedures. Written informed consent was obtained from the patient who participated in this study.

Coronary territories of the occluded coronary vessels are usually supplied by collateral circulation. The protective effect of coronary collateral circulation was well established. It is known that well-developed collaterals diminish coronary ischemia and can limit the infarct size. Collateral circulation is also associated with decreased mortality and predicts better prognosis (4). Moreover, a well-developed Rentrop-3 collateral circulation has a similar prognosis as a revascularized patient. In our case, multiple bridge collaterals supplied the coronary artery with antegrade TIMI 3 flow without evidence of coronary ischemia. Although the left ventricular function was normal, such a well-developed collateral circulation would eliminate the necessity of a percutaneous intervention.

In conclusion, every coronary CTO should not be invasively treated, even in the presence of a normal ventricular function. A

well-developed coronary collateral circulation should consider the evaluation of coronary CTO therapy.

Ethics Committee Approval: Ethics committee approval was received for this study from the local ethics committee of the Acibadem Atakent Hospital.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

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