

during the procedure. In this case, we present a catheter-induced dissection of the right coronary artery (RCA) that occurred during FFR assessment in the setting of coronary angiography, followed by acute thrombotic total occlusion, and its management with percutaneous coronary intervention, temporary pacemaker support, and thrombolytic therapy.

Case Report: A 54-year-old female patient presented to the cardiology outpatient clinic with exertional dyspnea. Coronary computed tomography revealed coronary artery disease, and she was hospitalized for coronary angiography. Angiography demonstrated 70-80% stenosis in the proximal RCA. The decision was made to assess the severity of the RCA lesion with FFR (Fig. 1). After the FFR pressure wire was advanced distal to the lesion, the patient developed sudden ST-segment elevation and complete atrioventricular (AV) block. Imaging revealed acute total occlusion of the RCA due to a dissection originating from the proximal segment, with a heavy thrombus burden, and the patient sustained an inferior myocardial infarction during the procedure (Fig. 2). The lesion was crossed with a guidewire, and repeated predilations were performed with a 3.0×30 mm balloon. Because of complete AV block, a temporary pacemaker was placed via the right femoral vein. Intracoronary adrenaline was administered for no-reflow. A 4.0×38 mm drug-eluting stent was implanted in the RCA. A second 4.5×12 mm drug-eluting stent was placed at the RCA ostium, overlapping with the first stent. TIMI 2-3 flow was achieved after proximal optimization, and a 12-hour glycoprotein IIb/IIIa inhibitor infusion was initiated (Fig. 3). The patient's rhythm converted from complete block to normal sinus rhythm. On the same day, the patient's general condition deteriorated during follow-up, and complete AV block recurred, prompting a second angiographic evaluation. TIMI 1 flow and dense thrombus were observed in the RCA. Intracoronary alteplase 10 mg was administered over 10 minutes. Although TIMI 3 flow was subsequently achieved, findings consistent with residual thrombus or dissection extending from the mid segment to the distal vessel persisted. The patient then received a 25 mg intravenous alteplase infusion over 24 hours. A third coronary angiography performed two days later showed complete resolution of the thrombosed dissection area distal to the stent, with preserved distal TIMI 3 flow (Fig. 4). The proximal in-stent segment was optimized by high-pressure dilation with a 4.5×15 mm non-compliant balloon. During follow-up, the patient remained in sinus rhythm and hemodynamically stable, and she was discharged on medical therapy.

Conclusion: Acute thrombotic total occlusion secondary to dissection occurring during FFR assessment of the RCA is a rare but life-threatening complication that can result in inferior myocardial infarction, complete atrioventricular block, and severe flow impairment. Prompt recognition of electrocardiographic changes and conduction disturbances during the procedure, together with immediate angiographic evaluation, temporary pacemaker support, and timely percutaneous coronary intervention, is of vital importance. In selected cases with refractory and persistent thrombus burden, intracoronary and intravenous alteplase therapy may help restore normal coronary flow while avoiding repeat stent implantation.

Keywords: fractional flow reserve, inferior myocardial infarction, coronary artery dissection, intracoronary thrombolytic therapy.



Figure 1. RCA lesion before FFR.



Figure 2. Totally thrombosed RCA lesion due to dissection caused by the FFR wire.



Figure 3. RCA after stent implantation and Gp IIb/IIIa infusion.



Figure 4. Control angiography after alteplase infusion, showing resolution of the thrombosed-dissected segment with TIMI 3 flow in the RCA.

SS-06

Successful Percutaneous Intervention for a Critical Ostial RCA Lesion Using the Distal Anchor Balloon Technique

Emrah Kaya, Fatih Kahraman

Department of Cardiology, Kütahya Health Sciences University Faculty of Medicine, Kütahya, Türkiye

Introduction and Aim: Coronary artery ostial lesions pose significant technical challenges during percutaneous coronary interventions because of inadequate guide catheter support and difficulty advancing devices across the lesion. In such cases, support-enhancing strategies may

be employed, including selection of a guide catheter offering stronger backup, the buddy wire technique, deep catheter intubation, use of a guide extension catheter, and the anchor balloon technique. Anchor balloon inflation performed in the distal coronary segment is an effective method that facilitates device delivery by increasing system stability and guide catheter support. In this case report, we present a patient with a critical stenosis at the ostium of the right coronary artery who experienced difficulty with balloon and stent delivery because of insufficient catheter support, in whom a successful percutaneous coronary intervention was performed using the distal anchor balloon technique. Our aim is to highlight the effectiveness of this technique in complex ostial lesions.

Case Report: A 73-year-old woman presented to the emergency department with chest pain. Electrocardiography performed in the emergency department revealed ST-segment elevation in the anterolateral leads, and the patient was taken for coronary angiography (Fig. 1). Imaging of the left coronary system demonstrated total occlusion of the proximal left anterior descending artery (LAD). Two drug-eluting stents were implanted in the LAD, extending from the mid segment to the proximal segment, with successful restoration of flow (Fig. 2). During the same session, critical stenoses were identified in the ostial and mid segments of the right coronary artery (RCA) (Fig. 3), and staged intervention for these lesions was planned. Two days after the initial angiography, the patient was brought back to the catheterization laboratory for the RCA procedure. The RCA was initially engaged with a standard 7F right Judkins guiding catheter. The guidewire was advanced across the lesions; however, when balloon advancement was attempted, the catheter was found to provide insufficient support. Given the anatomical suitability of the RCA take-off, the decision was made to continue the procedure with an internal mammary artery (IMA) guiding catheter, and the catheter was exchanged. The guidewire was re-advanced distal to the lesions. The ostial lesion was first predilated with a 2.5×12 mm PTCA balloon. Subsequently, a 3.5×12 mm non-compliant (NC) balloon was used to redilate both the mid and ostial

lesions. It was decided to stent the mid lesion first; however, when stent advancement was attempted, the catheter again failed to provide adequate support. An extra-support wire was therefore advanced distally as a buddy wire. When stent advancement over this wire remained limited by insufficient catheter support, advancement of the stent using the anchor balloon technique was planned. A 3.5×6 mm NC balloon was positioned distally in the RCA as the anchor balloon and inflated at nominal pressure, after which stent advancement was reattempted. With the support provided by the anchor balloon, a 4.0×24 mm drug-eluting stent was successfully advanced to the mid lesion (Fig. 4). Once the stent reached the target site, the anchor balloon was deflated and withdrawn, and the stent was successfully implanted at the mid lesion. The ostial lesion was then redilated with a 3.5×15 mm cutting balloon. Adequate catheter support for the anchor balloon technique was subsequently achieved by entrapping the distal guidewire beneath the previously implanted mid-segment stent, which stabilized the catheter. A 4.0×20 mm drug-eluting stent was then successfully implanted at the ostial lesion, with slight protrusion into the aorta and overlap with the previously placed stent. Postdilation of the overlapping segment of the two stents was performed with a 4.0×20 mm NC balloon. Postdilation within the RCA ostial stent was performed with a 4.5×15 mm NC balloon, and the procedure was completed successfully (Fig. 5). No complications developed during subsequent follow-up, and the patient was discharged on adjusted medical therapy.

Conclusion: Coronary ostial lesions pose serious technical challenges during percutaneous interventions because of inadequate catheter support. In this case, the distal anchor balloon technique successfully facilitated balloon and stent delivery without the need for more invasive alternative strategies. The distal anchor balloon technique should be considered an effective and safe support strategy in complex ostial lesions when standard methods prove insufficient.

Keywords: Distal anchor balloon technique, coronary ostial lesion, post-dilation, catheter support.



Figure 1. Patient's initial electrocardiogram at presentation — anterolateral ST-segment elevation.



Figure 2. Total occlusion of the proximal LAD and LAD flow following stent implantation.



Figure 3. Critical ostial and mid-segment lesions on RCA angiography.



Figure 4. Image of stent advancement with distal anchor balloon support.



Figure 5. Final angiographic image of the RCA.

SS-07

Management of Recurrent Acute Stent Thrombosis and Stent Deformation Guided by Intravascular Ultrasound: A Case of Complex Left Main Coronary Bifurcation

Emre Melik Faideci¹, Enes Çelik², Neryan Özgül Özden¹

¹Department of Cardiology, Bilecik Training and Research Hospital, Bilecik, Türkiye

²Department of Cardiology, Bilecik Şeyh Edebali University, Bilecik, Türkiye

Introduction and Aim: Acute stent thrombosis is a rare but high-mortality complication of percutaneous coronary intervention (PCI). Inadequate stent expansion, malapposition, stent deformation, and complex bifurcation anatomy are among the primary mechanical causes of early stent thrombosis. Intravascular ultrasound (IVUS) plays a crucial role in identifying the underlying mechanism of recurrent thrombotic events and guiding interventional treatment. This case report presents the IVUS-guided diagnosis and management of acute stent thrombosis that developed and recurred during an intervention on a left main coronary artery (LMCA) bifurcation.