toward coronary perforation and cardiac tamponade. Nevertheless, a concomitant decline in hemoglobin should prompt immediate consideration of vascular access-site complications and retroperitoneal bleeding, particularly when femoral access has been used. After coronary complications were excluded, crossover angiography enabled rapid identification of the bleeding source, and endovascular exclusion with a covered stent achieved prompt and effective hemostasis without the need for surgical intervention.

SS–21

Spontaneous Type-A Aortic Dissection in an Adolescent Patient

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Introduction and Aim: Acute aortic dissection is an emergency cardiovascular pathology with a mortality rate reaching up to 50% within the first 48 hours if not intervened in a timely and accurate manner. Patients frequently present to the emergency department with sudden-onset, sharp/tearing chest pain in the interscapular region or anterior chest wall. However, it may also present atypical presentations such as neurological symptoms, myocardial infarction, or dysphagia. Etiological factors typically include hypertension, connective tissue disorders, bicuspid aortic valve, congenital anomalies, and a positive family history. In this report, we present a case of spontaneous Type-A aortic dissection in a 17-year-old patient who presented with crushing chest pain mimicking acute coronary syndrome, with no known risk factors or predisposing etiological causes.

Case Report: A 17-year-old male patient presented to the emergency department with crushing chest pain that had been ongoing for approximately 30 minutes. The patient had no known chronic diseases or history of trauma, and no marfanoid features were observed on physical examination. His initial 12-lead electrocardiogram (ECG) demonstrated ST-segment elevation and hyperacute T waves in the precordial leads (Fig. 1). Cardiac troponin levels at presentation were negative.

On bedside transthoracic echocardiography (TTE), the aortic root diameter was measured as 5.5 cm, and an intimal dissection flap was observed. To confirm the diagnosis, a chest Computed Tomography (CT) angiography was promptly performed, confirming a Type-A aortic dissection (Fig. 2). The patient was immediately transferred to the cardiovascular surgery operating room, where surgical intervention was successfully performed. Rheumatological and genetic panels performed for etiology revealed no evidence of connective tissue disease. On postoperative follow-up TTE, the aortic root diameter was measured at 4 cm, and the patient was discharged in good health (uneventfully).

Conclusion: Aortic dissection typically develops in older age groups and against the background of an underlying cardiovascular or congenital risk factor. However, given the high risk of mortality, aortic dissection must always be kept in mind in the differential diagnosis of chest pain in young patients presenting with atypical ECG findings, even in the absence of obvious underlying risk factors.

Keywords: Aortic dissection, Type-A dissection, spontaneous aortic dissection, young patient.

SS–22

Stent-Balloon System Dislodgement and Intra-Guiding Catheter Stent Deformation in a Calcified Proximal RCA Lesion: A Rare Primary PCI Complication

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Introduction and Aim: During primary percutaneous coronary intervention (PCI), calcified coronary lesions can cause difficulty in balloon and stent delivery, leading to rare but severe mechanical complications. Stent-balloon system dislodgement (detachment), balloon rupture/perforation, and stent deformation within the guiding catheter are extremely rare complications, yet their management is critical. In this case report, we present the dislodgement of a stent-balloon system in a calcified proximal right coronary artery (RCA) lesion and the successful, safe retrieval of the entire system.

Case Report: A 60-year-old male patient presented to the emergency department with typical chest pain ongoing for 30 minutes. His past medical history was unremarkable except for smoking. The initial electrocardiogram (ECG) demonstrated findings consistent with inferior ST-segment elevation myocardial infarction (STEMI), and the patient was urgently transferred to the catheterization laboratory. Coronary angiography was performed using a JR4 guiding catheter to selectively visualize the right coronary artery (RCA). Stenoses of 70% in the proximal segment and 99% in the mid-segment of the RCA were identified. The lesion was crossed with a soft workhorse coronary wire, and predilatation was performed using a 2.0×15 mm PTCA balloon. Subsequently, attempt was made to advance a 3.5×21 mm drug-eluting stent (DES) to the lesion; however, significant resistance was encountered due to the heavily calcified proximal segment. To increase support, a second coronary wire (buddy wire) was placed, and additional predilatation was performed using a 2.5×15 mm PTCA balloon. With this extra support, the stent was advanced to the target lesion area. When attempt was made to inflate the stent balloon, it was observed that the stent failed to expand and contrast extravasation occurred from the balloon system. Suspecting balloon perforation and system failure, retrieval of the stent was attempted. However, the proximal portion of the stent became caught at the tip of the guiding catheter, preventing complete retraction into the catheter. Consequently, the stent-balloon system was retracted in a controlled manner up to the tip of the guiding catheter, and the entire assembly (guiding catheter, wire, balloon, and stent) was retrieved en bloc from the body. *Ex vivo* examination revealed that the proximal portion of the stent had detached/dislodged from the delivery balloon, the balloon had suffered perforation, and the stent had deformed the tip of the guiding catheter (Fig. 1). The RCA was re-cannulated using a new guiding catheter and a new coronary wire. After re-crossing the lesion, sequential balloon dilatations were performed, and a new drug-eluting stent was successfully implanted. Final angiography demonstrated restored TIMI-3 flow, and the procedure was completed without further complications.

Discussion: Calcified coronary lesions represent one of the most challenging anatomical factors impeding stent delivery. During stent passage through highly resistant segments or in the setting of inadequate lesion preparation, increased mechanical stress can cause stent deformation, balloon perforation, and, rarely, stent-balloon system dislodgement. In this case, severe resistance encountered in the calcified proximal RCA segment exerted excessive mechanical load on the device assembly. The subsequent balloon perforation and stent detachment are among the rarely reported complications. The critical aspect of this case was the controlled withdrawal of the entire stent system without allowing it to embolize freely within the coronary circulation. Thanks to this approach, a potentially fatal complication was successfully prevented.

Conclusion: Adequate lesion preparation and the utilization of appropriate support strategies are of paramount importance in reducing device-related complications in calcified coronary lesions. In rare complications such as stent-balloon system dislodgement, controlled retrieval of the system followed by re-intervention using an alternative strategy can ensure a safe clinical outcome.

Keywords: STEMI, right coronary artery, calcified lesion, percutaneous coronary intervention, stent complication, balloon perforation, stent dislodgement.

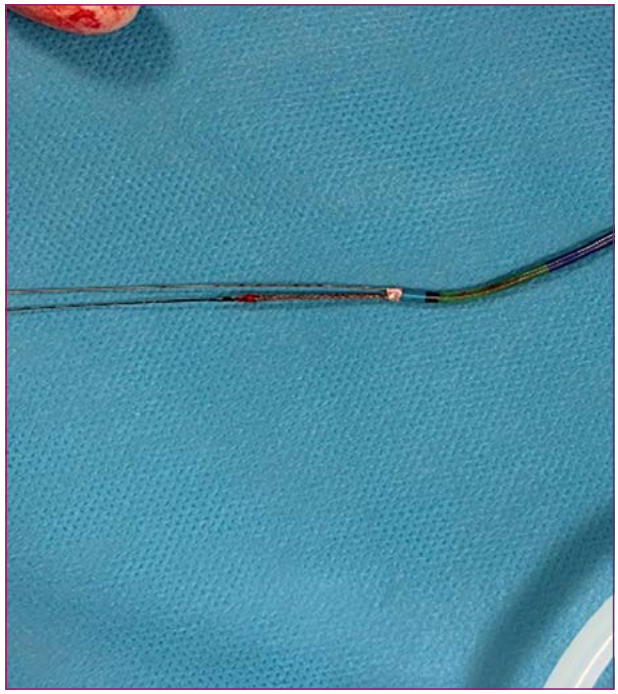

Figure 1. *Ex vivo* appearance of the retrieved stent-balloon system. Separation of the proximal segment of the stent from the balloon, balloon perforation, and stent deformation at the tip of the guiding catheter are clearly observed.

SS–23

Successful Percutaneous Revascularization with Culotte Technique and Management of Acute Complications in Left Main Coronary Bifurcation Lesion

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Introduction and Aim: Percutaneous coronary intervention (PCI) of left main coronary artery (LMCA) bifurcation lesions requires high technical expertise and immediate management of potential hemodynamic and rhythm complications. In this case, we present the successful application of the Culotte stenting strategy for an LMCA-LAD-LCx bifurcation lesion in an 86-year-old female patient presenting with acute coronary syndrome and cardiogenic shock, along with the prompt management of intraprocedural ventricular fibrillation (VF) and coronary dissection complications. LMCA bifurcation lesions represent some of the most complex coronary interventions due to the large territory of myocardium at risk. The Culotte technique, a two-stent strategy, ensures complete ostial coverage of both branches; however, potential side-branch occlusion or severe arrhythmias during the procedure require rapid intervention.

Case Report: An 86-year-old female patient was admitted to our catheterization laboratory with a preliminary diagnosis of acute coronary syndrome. Upon arrival at the catheterization suite, the patient was in cardiogenic shock. The electrocardiogram revealed prominent ST-segment elevation in lead aVR with widespread ST-segment depressions in other leads (Fig. 1). Coronary angiography demonstrated a severe bifurcation lesion involving the distal LMCA, proximal LAD, and proximal LCx segments (Fig. 2). Given the clinical presentation of cardiogenic shock, immediate stenting was pursued. The procedure was initiated by engaging the LMCA ostium with an EBU 3.5 guiding catheter. The LAD and LCx arteries were crossed using soft workhorse wires. Predilatation was performed on the LCx and LAD lesions using a 2.0x20 mm balloon. A 3.5x24 mm drug-eluting stent (DES) was deployed along the LMCA-LCx axis. Proximal optimization technique (POT) was performed at the LMCA level using a 4.5x8 mm non-compliant (NC) balloon. Subsequently, a 3.5x21 mm DES was implanted along the LAD-LMCA axis. After rewiring the LAD and LCx, stent struts were dilated with a 2.0x15 mm balloon. Kissing PTCA was executed using 3.0x12 mm and 3.5x12 mm NC balloons in the LCx and LAD branches, respectively (Fig. 3). During the procedure, the patient developed VF, which was rapidly converted back to sinus rhythm with immediate electrical defibrillation. Following defibrillation, a decrease in LAD forward flow was noted; thus, an overlapping 2.5x34 mm DES was implanted into the LAD. Final POT was performed at the LMCA using a 4.5x12 mm NC balloon. Upon identifying a dissection at the LCx ostium, a 2.5x21 mm DES was deployed into the LCx. Following the two-vessel Culotte stenting, complete resolution of stenosis and TIMI-3 flow were successfully restored in all branches (Fig. 4). Post-procedure, a half-dose tirofiban (Aggrastat) infusion was initiated.

Conclusion: The Culotte technique provides high procedural success in LMCA bifurcation interventions when the vessel anatomy is favorable. Prompt response with immediate defibrillation to malignant arrhythmias such as VF, alongside bail-out stenting for flow-limiting dissections, are key determinants of clinical success in this high-risk patient population.

Keywords: Left main coronary artery, bifurcation, culotte technique, cardiogenic shock, coronary dissection.

Figure 1. Initial 12-lead electrocardiogram (ECG) upon admission. Prominent ST-segment elevation in lead aVR accompanied by diffuse ST-segment depressions in anterior/inferolateral leads (indicative of extensive left main / multivessel ischemia).

Figure 2. Baseline coronary angiography image. Medina (1,1,1) bifurcation lesion with severe stenosis involving the distal Left Main Coronary Artery (LMCA), proximal Left Anterior Descending (LAD), and proximal Circumflex (LCx) arteries.