



Figure 7.

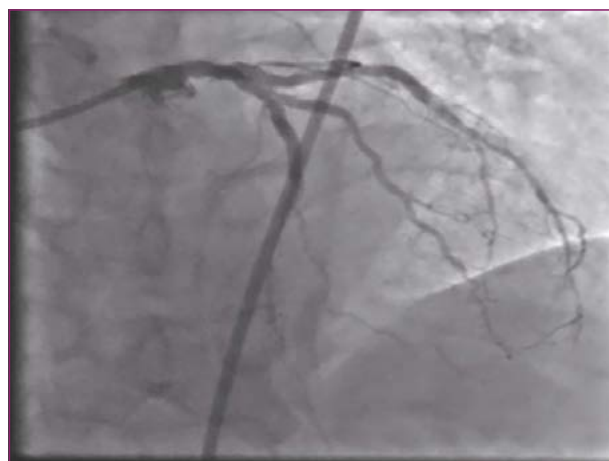


Figure 9.



Figure 8.



Figure 10.

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Association of Final Kissing Balloon Inflation with Major Adverse Cardiac Events in Provisional Crossover Stenting of Distal Left Main Coronary Bifurcation Lesions: A Single-Centre Retrospective Analysis

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Introduction and Aim: In a provisional single-stent strategy for distal left main (LM) coronary bifurcation lesions, final kissing balloon (FKB) inflation may be performed when stenosis develops at the ostium of the unstented side branch after crossover stenting of the main vessel; whether FKB should be routine or reserved for this situation remains debated. In this study, we compared the characteristics and major adverse cardiac event (MACE) rates of patients who did and did not undergo FKB in a real-world provisional LM bifurcation crossover cohort.

Methods: A total of 150 consecutive patients treated with provisional single-stent LM bifurcation crossover at a single centre were reviewed retrospectively; cases in which a stent was implanted in the side branch were excluded. According to the stent target, 126 cases were classified as LM-left anterior descending artery (LM-LAD) and 24 as LM-

circumflex (LM-Cx) crossover; the proximal optimisation technique (POT) was performed in 98.0% of cases. FKB was performed in cases that developed more than 70% stenosis at the side-branch ostium after crossover (n=17; 11.3%); the remaining 133 cases formed the control group. The primary outcome was MACE (a composite of all-cause death, myocardial infarction and target lesion revascularisation). Group comparisons were made with Fisher's exact test for categorical variables and the Mann-Whitney U test for continuous variables; associations with rare events were modelled with Firth penalised logistic regression. No correction for multiple comparisons was applied, and p values (p<0.05) are descriptive.

Results: In the overall cohort, the median age was 62.5 years, 73.3% of patients were male and 52.0% presented with acute coronary syndrome (ACS); intravascular ultrasound (IVUS) use was limited (7.3%). The FKB and no-FKB groups did not differ significantly in baseline characteristics; the only statistically significant difference was in ejection fraction (median 60% vs 51.2%; p=0.030), although both medians were within normal limits (>50%). Baseline side-branch stenosis was below 50% in both groups and the groups were comparable. MACE occurred in 14.7% of patients (22/150). For the primary outcome, the MACE rate did not differ between the two groups (17.6% vs 14.3%; odds ratio (OR) 1.29; 95% confidence interval (CI) 0.34–4.90; risk difference +3.4%; 95% CI –15.7% to +22.4%; p=0.72). No significant differences were found for in-hospital mortality (0% vs 7.5%), all-cause mortality (11.8% vs 11.3%), myocardial infarction (0% vs 3.0%) or target lesion revascularisation (6.2% vs 1.5%; p=0.60, 1.00, 1.00 and 0.29, respectively). In the Firth models, low haemoglobin (OR 1.49

per 1 g/dL decrease; 95% CI 1.18–1.92) and presentation with ACS (OR 3.14; 1.16–9.49) were independently associated with MACE, and low estimated glomerular filtration rate (eGFR; OR 1.32 per 10 mL/min/1.73 m² decrease; 1.08–1.62) and ACS (OR 4.61; 1.43–19.29) with all-cause mortality.

Conclusion: In a real-world provisional LM bifurcation crossover cohort in which the side branch was largely preserved before the procedure, final kissing balloon inflation was performed only in cases that developed stenosis at the side-branch ostium after crossover, and no significant difference was found between the groups in MACE or its components. However, the small size of the FKB group (n=17) and the wide confidence interval render this comparison underpowered to exclude a clinically meaningful difference; moreover, because the FKB group is by definition a selected subgroup that developed side-branch ostial stenosis, the groups also differ with respect to the development of this potentially prognostically unfavourable stenosis. Therefore, although there is no evidence that FKB is harmful, a benefit has not been demonstrated either; the findings are hypothesis-generating and should be confirmed in adequately powered prospective studies. The decision to perform FKB remains an individualised, case-by-case decision based on the post-stenting angiographic result.

Keywords: LMCA bifurcation, Provisional crossover stenting, Final kissing balloon, MACE.

SS-14

Nanocrush Technique for Distal Left Main Coronary Artery Bifurcation PCI in a Patient with Occluded Saphenous Vein Grafts

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Introduction and Aim: Graft occlusion following coronary artery bypass grafting (CABG) represents a challenging clinical scenario that may require complex percutaneous coronary intervention (PCI). Distal left main coronary artery (LMCA) bifurcation lesions are technically demanding, and the selection of an appropriate bifurcation stenting strategy is critical for procedural success. We present a case of successful PCI of a distal LMCA bifurcation lesion using the Nanocrush technique in a patient with a history of CABG and total occlusion of all saphenous vein grafts.

Case Report: A patient with a previous history of CABG underwent follow-up coronary angiography, which demonstrated total occlusion of the left anterior descending (LAD) artery, left circumflex (LCx) artery, and all saphenous vein grafts. Further angiographic assessment revealed a critical lesion involving the distal LMCA bifurcation. Given the absence of patent bypass grafts and the significant distal LMCA disease, PCI was planned. Following appropriate lesion preparation, successful bifurcation stenting of the distal LMCA was performed using the Nanocrush technique. Final angiography demonstrated TIMI grade 3 flow in both the main and side branches without significant residual stenosis. No periprocedural complications occurred, and the patient was discharged in a clinically stable condition.

Conclusion: Distal LMCA bifurcation lesions in patients with previous CABG and total occlusion of bypass grafts represent highly complex coronary interventions requiring substantial technical expertise. In appropriately selected patients and lesions, the Nanocrush technique may provide an effective and safe bifurcation stenting strategy, allowing optimal stent apposition and reconstruction of the bifurcation anatomy.

Keywords: DK Nano-Crush, coronary bifurcation intervention, percutaneous coronary intervention (PCI).

SS-15

Is Revascularization Indicated for Every Occluded Spontaneous Coronary Artery Dissection?

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Introduction and Aim: Spontaneous coronary artery dissection, or SCAD, is an unpredictable and potentially life-threatening condition. It is one of the most common causes of acute coronary syndrome, particularly in young women. SCAD is defined as a tear within the wall of an epicardial coronary artery that occurs in the absence of trauma, coronary intervention, or atherosclerotic plaque rupture. This process leads to the formation of a false lumen, which can partially or completely compress the true lumen and impair coronary blood flow. Patients most commonly present with chest pain, dyspnea, or palpitations. Since ischemic changes may be present on the ECG, the clinical presentation can be difficult to distinguish from acute coronary syndrome caused by atherosclerotic plaque rupture. SCAD mainly affects young and middle-aged women without traditional cardiovascular risk factors. It has been associated with severe physical or emotional stress, migraine, anxiety, depression, fibromuscular dysplasia, hormone replacement therapy, pregnancy, inflammatory conditions, menopause, and genetic variants related to certain connective tissue disorders.

Case Report: A 38-year-old woman with no known chronic medical conditions presented to the emergency department with chest pain. Her initial ECG was consistent with an acute inferior myocardial infarction, and she was immediately transferred to the cardiac catheterization laboratory. Coronary angiography showed a normal left coronary system. In the right coronary artery, a spontaneous coronary artery dissection extending from the ostium to the distal segment was identified, as shown in Figure 1. Since distal coronary flow was preserved, the patient was hemodynamically stable, and her chest pain had improved compared with the initial presentation, no intervention was performed at that time. Instead, close clinical follow-up with serial assessment of symptoms and troponin levels was planned. Medical treatment was initiated, and the patient was admitted to the coronary intensive care unit for continuous monitoring. Transthoracic echocardiography showed a left ventricular ejection fraction of 50 to 55 percent, with mild hypokinesia of the inferolateral wall. On the first day of hospitalization, laboratory tests showed a triglyceride level of 191 milligrams per deciliter, an HDL level of 44 milligrams per deciliter, and a high-sensitivity troponin I level of 1.99 micrograms per liter, with a normal range below 0.1 micrograms per liter. Serial troponin levels were 6.29, 2.13, and 2.20 micrograms per liter. The ST-segment elevations in the inferior leads gradually regressed, and the patient's symptoms improved. The patient remained clinically stable during her intensive care unit follow-up and was subsequently evaluated by the cardiology council. Conservative management was continued, and follow-up coronary angiography was planned for three months later. The patient was discharged with continued medical treatment and bed rest during this period. Three months later, repeat coronary angiography demonstrated complete resolution of the dissection extending from the ostium to the distal segment of the RCA, as shown in Figure 2.

Discussion: The coronary arteries consist of three histological layers: the tunica intima, tunica media, and tunica adventitia. Spontaneous coronary artery dissection occurs when an intramural hematoma develops within the coronary arterial wall. The blood may originate either from injury to the vasa vasorum or from an intimal tear. The intramural hematoma separates the intima from the outer layers of the arterial wall, creating a false lumen. This false lumen compresses the true lumen, reduces coronary blood flow, and may result in acute coronary syndrome. The left anterior descending artery is the most commonly affected vessel. According to reported frequencies, the LAD and its branches are involved in approximately 50 percent of cases, the circumflex artery, ramus intermedius, and obtuse marginal branches in approximately 30 percent, the RCA and its