Case Summary. During inferior myocardial infarction complicated by cyanosis and hypoxia (particularly not improving with increasing oxygen supplementation), patency of foramen ovale or unknown atrial septal defect causing intracardiac shunt should be considered. TTE or TEE should be done to determine the existence of PFO. Management should be directed to improve RV performance by early revascularization of occluded right coronary artery, and reduce RV and atrial pressures through preload reducing agents. If all measures fail, percutaneous closure of PFO should be performed.

TCTAP C-020
Acute Myocardial Infarction with Left Main Coronary Artery Total Occlusion Stabilized by Primary Balloon Angioplasty and Subsequently Underwent Successful Coronary Artery Bypass Graft Surgery
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[CLINICAL INFORMATION]
Patient initials or identifier number. CA
Relevant clinical history and physical exam. A 50-year-old man was referred to our center by a local hospital for worsening chest pain. His risk factors include hypertension, diabetes mellitus and smoking. At first, he was hemodynamically stable but the intensity of chest pain increased quickly over time. On arrival, he rapidly became restless, sweating and tachycardia. His blood pressure remained stable on IV dobutamine support and the lungs had bibasal crepitations. A loading dose of clopidogrel 300 mg and aspirin 300 mg were given.

Relevant test results prior to catheterization. ECG at Emergency Department showed wide spread ST depression at II, III, AVF, V3 to V6 leads and ST elevation at AVR, AVL leads suggestive of ‘left main syndrome’. The initial Troponin T level was normal and the Creatinine Kinase was 61 u/L. The echocardiography showed depressed left ventricular ejection fraction of 35% with hypokinetic left anterior and apical walls.

Relevant catheterization findings.
1. Left coronary angiogram showed total occlusion of the mid-shaft left main coronary artery (LMCA).
2. Left circumflex (LCX) artery was not visualized.
3. Right coronary artery (RCA) was normal and supplying collateral to mid left anterior descending (LAD) artery.

[INTERVENTIONAL MANAGEMENT]
Procedural step. After a brief discussion with cardiothoracic surgeon and the patient, taking into consideration the consequences of delay revascularization, highly unstable hemodynamic and the non availability of immediate CABG surgery, primary PCI was selected as the initial strategy. A 7Fr sheath and Intra-aortic balloon pump were inserted via right and left femoral arteries, respectively. The LMCA was engaged with a 6Fr XB 3.0 guiding catheter. At first, it was difficult to wire into the unrevealed LAD and LCX arteries. After repeated attempts, two 0.014" BMW and Runthrough floppy guide wires were successfully negotiated across the LM, intermediate and LCX arteries stenoses. A 2.0x10 mm balloon (Tazuna) was used to inflate LAD and LCX arteries sequentially. Immediate angiogram showed restoration of coronary flow into LAD, intermediate and LCX arteries. It also revealed the total occlusion at mid LAD artery. Patient’s chest pain was instantly relieved. In order to ensure complete relief of myocardial ischemia, the LMCA was also dilated, but not stented. However, recoil of vessels seemed to occur and a bolus dose of IC Reopro was given after repeating balloon angioplasty. Attempts were made to cross the total occlusion at mid LAD antegrade but unsuccessfully. At this junction, even though we could not achieve full revascularization, patient was hemodynamically stable and his ECG shown resolution of ischemia. The option of CABG was discussed and he was referred to cardiothoracic surgeon.
Case Summary. Acute occlusion of the LMCA is an uncommon medical emergency that results in myocardial infarction and cardiogenic shock. The optimal revascularization modality (CABG or PCI) is still uncertain. Survival depends on the size and dominance of the RCA and the formation of collateral supply to the left coronary system. Our primary goal was to stabilize the patient by primary PCI, and we managed to restore the coronary flow supplying a large area of myocardium. However, we failed to wire across the mid LAD chronic total occlusion and hence it was thought prudent to merely perform primary angioplasty for immediate hemodynamic gain and prepare him for CABG. He underwent urgent CABG successfully.

TCTAP C-021
The Dilemma of Primary Percutaneous Coronary Intervention in a Patient with Acute Myocardial Infarction and Difficult Vascular Access
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[CLINICAL INFORMATION]

Patient initials or identifier number. RV

Relevant clinical history and physical exam. A 78-year-old man presented with progressive onset of chest pain one hour prior to admission. His coronary risk factors include hypertension and smoking. At presentation, his heart rate was 66 beats per minute and BP was 140/90 mmHg. The other examinations were normal. His angina was progressively worsened at Emergency Department.

Relevant test results prior to catheterization. His ECG at presentation was normal. After half an hour, the ECG started to show progressive changes of ST elevation at V2, V3 and V4 leads. The initial troponin T level was normal.

Relevant catheterization findings. The right coronary artery (RCA) was normal. However, it was difficult to engage left main coronary artery (LMCA) via the tortuous right and left femoral artery by JL 4.0 and JL 5.0 diagnostic catheters, despite the use of long femoral introducer sheaths. Finally, a non-selective contrast injection showed total occlusion at proximal anterior descending (LAD) artery, which was identified as the infarct-related artery. LMCA was normal and the mid-left circumflex (LCX) artery showed a 40% stenosis.

INTERVENTIONAL MANAGEMENT

Procedural step. We experienced significant difficulty engaging LMCA. After failed attempts to engage LMCA with JL 4 and 5 diagnostic catheters (via the right and left femoral arteries and the use of long femoral introducer sheath), we tried again to obtain access by using XB 3.0, 3.5, AL1.0 and Voda guiding catheters, however, unsuccessful.