121. Recurrent Myocardial Infarctions, Life Threatening Ventricular Arrhythmia and Cardiac Arrest in a Patient With Non-Obstructive Coronary Arteries: A Diagnostic Challenge

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Body

Background: Majority of myocardial infarctions (MI) encountered in clinical setting are caused by obstructed coronary arteries, however, in 1 out of 10 patients with acute MI, evidence of obstructive coronary artery disease is not found on Coronary Angiography (CAG).

Case: 67 year old previously healthy male presented to the Emergency Department (ED) with episodic tightening chest pain for 3 days associated with sweating. Past medical history was unremarkable except for a history of smoking. According to the electrocardiogram (ECG) and elevated cardiac enzymes, he was managed medically as inferior non-ST segment elevation MI and discharged with an elective date for CAG. A week later, he was brought to the ED unresponsive with an unrecordable blood pressure. He was found to be in ventricular fibrillation (VF) and soon went into cardiac arrest. Following cardiopulmonary resuscitation and successful defibrillation, sinus rhythm was restored. ST-segment elevations were noted in subsequent ECGs and troponin I was elevated. Urgent CAG did not reveal any critical stenosis He was diagnosed and managed as anterolateral ST-segment elevation MI. 2 weeks following his second admission, he presented to the ED once again with a similar episode of chest pain. Urgent ECG was indicative of anterolateral ST-elevation MI. Coronary spasm was noted in circumflex artery on CAG which improved with intracoronary glyceryl trinitrate. Considering his recurrent episodes of coronary ischemia and the reversible coronary spasm identified on CAG, he was diagnosed as Myocardial Infarction in Non-Obstructive Coronary Arteries (MINOCA) caused by coronary spasm after excluding non-ischemic causes of elevated troponin. Patient was started on long acting nitrates and diltiazem after which patient was symptom free at 1 year follow up.

Discussion: Clinicians should maintain a high degree of clinical suspicion to look for non-conventional causes of MI in unobstructed CAG. Apart from MI, life threatening ventricular arrhythmias could also be the first presentation of MINOCA. A definite diagnosis should be made and appropriate medication should be started to prevent complications such as VF which could be life threatening.

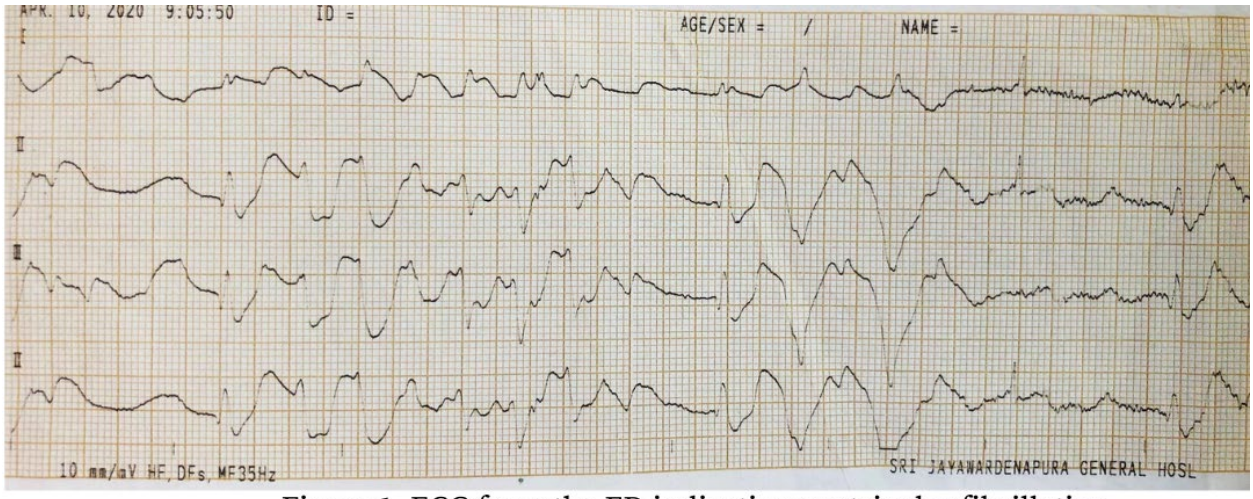

Figure 1. ECG from the ED indicating ventricular fibrillation.

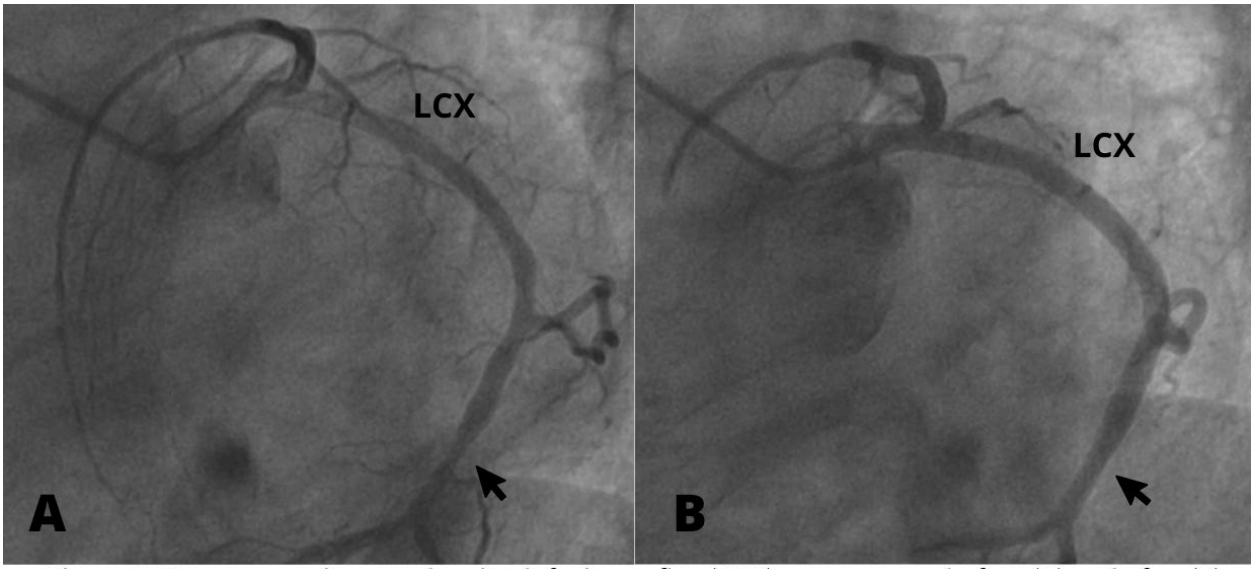

Figure 2. Coronary angiogram showing left circumflex (LCX) artery spasm before (A) and after (B) intracoronary glyceryl trinitrate (GTN).