Long QT In The Patient With Myocardial Bridging: Is It Harmful?

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Introduction: The Myocardial Bridging (MB) is an anomaly characterized by an intra-myocardial route of a segment of one of the major coronary arteries. Functional myocardial bridging is less commonly observed on angiography (0.5–16%) and can range from 4 to 80 mm in length. Long QT is one of arrhythmias which might occur in the patient with MB. This case is about Long QT in the patient with MB and its implication.

Methods: CASE DESCRIPTION A 66 years old female presented to ER with typical angina CCS 3 gradually increased since 1 week ago. Associated symptoms were dyspnea and dyspepsia. On physical examination, BP(110/70mmHG), Pulse(86times/minute), RR(26times/minute), Temperature (36.4C), SaO2(97%). Cardio-pulmonary examination was unremarkable. ECG showed Long QT interval, T-inverted on V1-V4, cardio enzymes were not increased, Chest X-ray showed cardiomegaly, Echocardiography showed LVH with normal LVEF. Nitrate, Clopidogrel, and Aspilet were given in ER, and the patient transferred to cath-lab. CT-Angiography showed MB in mid LAD, catheterization was done and the patient was given bisoprolol for maintenance drugs. After few days, the Long QT was resolved spontaneously, and the patient was discharged.

Result: CASE DISCUSSION Patients with MB are often asymptomatic but this anomaly may be associated with ACS, arrhythmias, or even sudden cardiac death. Although MB can be found in any epicardial artery, 67-98% occurs in the LAD. The typical angiographic feature of a myocardial bridge is systolic narrowing of an epicardial artery, which is often completely resolved during the diastolic phase of the cardiac cycle. The hemodynamic impact of MB depends on the thickness and length of the bridge, orientation of the bridge relative to myocardial fibers and presence of loose connective or adipose tissue around the bridged segment. Long QT might be a sign of impairing rhythm in ventricular and might be suggested as early sign of the presence of critical stenosis in the bridged segment, and it should be alerted physician about the deadly complication of ventricular arrhythmia and sudden cardiac death. In our patient, the MB appear to be symptomatic, so to normalize flow and abolish symptoms, catheterization was done and to control symptoms beta blocker was given as maintenance drugs.

Conclusion: Myocardial Bridging, if presented symptomatically, especially as ACS, may be lethal. Long QT may indicate as early sign of ventricular arrhythmia, which should be monitored regularly. Flow normalization and symptoms controlling in such manner are best achieved by PCI and Beta-blocker.