

MYOCARDIAL BRIDGING-A CONUNDRUM?

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Dear Editor,

The case study published by Yildiz and Altay (1) in this journal with the title "Cause of persistent chest pain: two myocardial bridges in a young woman" was particularly intriguing. The primary issues were the patient's young age and gender, coupled with the presence of two myocardial bridges (MBs) in the same artery causing a critical 95% stenosis during systole, a phenomenon called the "milking effect" (1). The successful clinical control was by discontinuing statin and acetylsalicylic acid and adjusting the metoprolol daily dosage with base on her blood pressure and heart rate (1). The authors also suggested further research involving similar cases, which might better clear the general spectrum of MBs, favoring the management strategies (1). Therefore, their case report was very illustrative, focusing on uncommon clinical and pathophysiological aspects of this challenging condition, and deserves to be emphasized. Considering the scarcely described cases of MB in females, one can presume that short comments on more recent literature data may increase reader interest in this topic (2-5).

A 62-year-old female without known cardiovascular risk factors was evaluated due to progressive dyspnea and chest pain for 14 years; she presented a complete left bundle branch block, with diffuse hypokinesis and left ventricular function at 40%

(2). Coronary angiography showed MB at the middle of the left anterior descending (LAD) artery, and the magnetic resonance study revealed a left ventricular non-compaction (2). The patient was clinically controlled with success, utilizing bisoprolol, ramipril, furosemide, dapagliflozin, besides rivaroxaban because of the thrombo-embolic risks (2). Dugal et al. (3) presented a 60-year-old female with an antecedent of coronary disease admitted because of dyspnea, chest pain, and the suspicion of a non-ST elevated myocardial infarction. The initial level of troponin was 243 ng/L, and control determination showed 114 ng/L. The left ventriculogram disclosed a hypokinetic mid-anterior wall, consistent with a mid-ventricular variant stress cardiomyopathy or Takotsubo cardiomyopathy. Associations of MB with apical Takotsubo cardiomyopathy may range from 11% to 76%, and the authors emphasized their case report as the first at the mid-anterior wall site (3). Additionally, a 45-year-old female presenting complaints of recurrent angina for two years, without obstructive coronary artery disease was diagnosed with MB and low endothelial shear stress (ESS) in the LAD artery distal to the first diagonal branch (4). The hyper-reactive vasoconstrictive responses to acetylcholine observed might be due to a thinner intima beneath the MB and a higher number of vascular smooth muscle cells (4). The authors emphasized the contradictory findings of a region with high ESS and without any



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atherosclerosis where the MB and coronary artery spasm (CAS) were located, being indicative of possible different etiology of CAS in the presence of MB and high ESS (4). In a study of Indonesian patients (n=1029) with MB, it was found that 44.3% had the LAD artery more often affected (99.6%), with the middle portion of the bridging vessel was the most common site of stenosis (n=269) (5). Stenosis was more often moderate (30-50%), and factors such as female gender, older age, symptomatic status, and a higher coronary artery calcium score were associated with stenosis (5). The degree of stenosis was higher in the proximal site than in the middle site group, with the authors suggesting that MB may prevent atheromatosis of the distal segment and trigger the development of atherosclerosis in the proximal segment of the bridge (5).

Case studies contribute to a better understanding of uncommon and challenging entities.

Footnote

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