

## Myocardial bridging of the posterolateral branches of the right coronary artery

Arash Gholoobi<sup>(1)</sup>

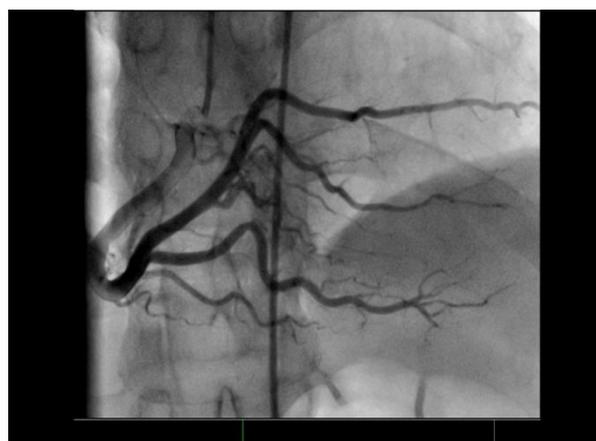
### Images in Clinical Medicine

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A 57-year-old male patient presented with typical exertional angina and dyspnea during usual physical activities. He had a history of hypertension. On cardiac examination, he had a load ejection-type systolic murmur which was radiating to both carotid arteries. Transthoracic echocardiography revealed severe calcified aortic stenosis and severe concentric left ventricular hypertrophy. He underwent coronary angiography to define his coronary anatomy before aortic valve replacement. The left anterior descending (LAD) artery had non-significant stenosis after the first diagonal branch, and the left circumflex (LCx) artery was normal. The right coronary artery (RCA) injection demonstrated myocardial bridging of a long segment of the posterolateral branches with complete luminal obliteration during systole (Figures 1 and 2). He underwent surgical aortic valve replacement without right posterolateral myotomy or bypass graft surgery. Beta-blocker was prescribed following surgery to reduce the potential risk of ischemia and arrhythmia.



**Figure 1.** Right coronary angiography in the antero-posterior projection with cranial angulation demonstrates complete luminal obliteration of a long segment of the two postero-lateral branches during systole (arrows)



**Figure 2.** Right coronary angiography in the left anterior oblique projection with cranial angulation demonstrates normal postero-lateral branches during diastole.

Myocardial bridging is a coronary anomaly defined as a segment of an epicardial coronary artery that goes intramurally through the myocardium and is usually confined to the midportion of the LAD artery.<sup>1</sup> Rarely, it has been reported in the main body of the LCx artery or RCA or their branches.<sup>2,3</sup> Multi arterial involvement has been reported as well.<sup>4</sup> To our knowledge, myocardial bridging of the posterolateral branches of the RCA has not been reported so far except for one.<sup>5</sup>

The typical angiographic finding is compression of the involved segment of an epicardial coronary artery during systole. The presence of an aortic outflow tract obstruction enhances the angiographic manifestation due to increased systolic tension which probably had such effect in this patient as well. Myocardial bridging is a benign condition in most instances but has been associated with angina, arrhythmia, coronary vasospasm, and even sudden cardiac death.<sup>1</sup> Medication is considered first-line therapy. In subjects refractory to medication, surgical myotomy is associated with reversal of local myocardial ischemia. However, the risk associated with surgery should carefully be weighed against the

1- Assistant Professor, Atherosclerosis Prevention Research Center, Imam Reza Hospital, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Correspondence to: Arash Gholoobi, Email: gholoobia@mums.ac.ir

usually uneventful long-term course. A few patients refractory to medication have been treated with coronary stents, and the rate of restenosis has been too high to generally recommend this approach.<sup>6</sup>

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### Conflict of Interests

Authors have no conflict of interest.

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