

Dynamic Systolic Compression of the Left Anterior Descending Coronary Artery by a Postinfarction Dyskinetic Left Ventricular Aneurysm

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Abstract

Dynamic systolic compression of the coronary arteries is almost always due to the existence of myocardial bridging that is most commonly localized in the middle segment of the left anterior descending coronary artery. However, it has rarely been reported in patients with pericardial adhesions, tumor, foreign body, or pseudoaneurysms. Only rare case reports exist regarding dynamic coronary compression by a dyskinetic left ventricular aneurysm. We present a patient with a myocardial bridge-like systolic compression of the distal left anterior descending caused by postinfarction dyskinetic left ventricular aneurysm.

Keywords

- ▶ systolic coronary compression
- ▶ apical aneurysm
- ▶ myocardial bridge

Dynamic systolic compression of the coronary arteries is almost always due to the existence of myocardial bridging that is most commonly localized in the middle segment of the left anterior descending (LAD) coronary artery.¹ However, it has rarely been reported in patients with pericardial adhesions, tumor, foreign body, or pseudoaneurysms. We present a patient with a myocardial bridge-like systolic compression of the distal LAD caused by postinfarction dyskinetic left ventricular aneurysm.

Case Report

A 60-year-old man referred to our hospital for coronary angiography after thrombolytic therapy with tenecteplase for acute inferior myocardial infarction. Medical history was significant for dyslipidemia, diabetes mellitus, and tobacco abuse, as well as established coronary artery disease with a percutaneous coronary intervention and drug-eluting stent placement to LAD coronary artery approximately 3 years ago. Electrocardiogram showed 1 mm ST-segment elevation in inferior leads and QS pattern in precordial leads. Urgent coronary angiography revealed acute thrombotic occlusion of the proximal right coronary artery and subsequent successful primary percutaneous coronary intervention was

performed with good angiographic result. Selective angiogram of the left coronary artery demonstrated absence of restenosis of the previously implanted LAD stent, and showed a dynamic myocardial bridge-like systolic compression of the distal LAD (▶**Video 1**). Transthoracic echocardiography revealed a dyskinetic area in anterior septum and anteroapical wall of left ventricle with an estimated left ventricular ejection fraction of 25% (▶**Video 2**). The previous coronary angiography performed 3 years ago was reviewed, showing the absence of this systolic compression of LAD immediately after coronary stent implantation (▶**Video 3**).

Video 1

Selective angiogram of the left coronary artery showing a dynamic systolic compression of the distal left anterior descending artery mimicking a myocardial bridging.

Online content including video sequences viewable at: www.thieme-connect.com/products/ejournals/html/10-1055-s-0034-1396790-ija-13-0077-v1.mp4

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Video 2

Transthoracic echocardiography at apical four chamber view showing a dyskinetic area in anterior septum and anteroapical wall of left ventricle.

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Video 3

The previous coronary angiography performed 6 months before showing the absence of systolic compression of the distal left anterior descending artery immediately after coronary stent implantation.

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Discussion

Myocardial bridging is defined as systolic compression of an epicardial coronary artery segment underlying myocardial tissue. On angiography, it is recognized as systolic compression of an epicardial coronary segment resulting in systolic compression of that segment.¹ Although systolic compression of the coronary artery is commonly associated with myocardial bridging, it has rarely been reported in patients with pericardial adhesions, tumor, foreign body, or pseudoaneurysms.²⁻⁴ Only rare case reports exist regarding myocar-

dial bridge-like coronary compression by a dyskinetic left ventricular aneurysm.^{2,4-6} Acute myocardial infarction associated with myocardial bridges has been described; however, in this case, the first coronary angiogram did not detect myocardial bridging on LAD territory. Although myocardial bridges are almost exclusively localized in the middle segment of the LAD coronary artery¹; in this case, the systolic compression was more prominent at the distal part of the LAD in where an unusual position as myocardial bridging but usual for dyskinetic anteroapical aneurysm. Therefore, we suggest that dyskinetic parts of left ventricular wall caused the systolic external compression of the mid-to-distal portion of the LAD artery mimicking myocardial bridging-like appearance.

Conflict of Interest

The authors report no financial relationships or conflicts of interest regarding the content herein.

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