



Images in Cardiology

An echocardiographic clue for ostial left main coronary artery stenosis



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ABSTRACT

Calcified nodules in human coronary arteries are usually focally distributed. Non-invasive imaging of coronary arteries by bedside emergency transthoracic echocardiography in adults is possible and may become a useful adjunct to other methods of coronary artery examination. Coronary artery stenosis can be identified as localized color aliasing and accelerated flow velocities. Complete visualization of individual ostial coronary segments might ease the demonstration of coronary stenosis by bedside transthoracic echocardiography. The left main coronary artery stenosis requires prompt emergency evaluation and treatment because emergency conditions have higher mortality rates. The authors wish to emphasize the usefulness of emergency bedside echo-Doppler for a prompt diagnosis and treatment of this life-threatening condition.

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Calcified nodules in human coronary arteries are usually focally distributed. Non-invasive imaging of coronary arteries by transthoracic echocardiography in adults is possible and may become a useful adjunct to other methods of coronary artery examination. Coronary artery stenosis can be identified as localized color aliasing and accelerated flow velocities.¹ A 78-year-old woman presented to the emergency department with unstable angina. Electrocardiography revealed a sinus rhythm. On bedside pre-catheterization echocardiography, we identified small calcified nodule (Fig. 1A, arrow) and color aliasing (Fig. 1b, thick arrow) suggesting the ostial stenosis of the left main coronary artery (LMCA) (Fig. 1 and Videos 1 and 2). Coronary angiography confirmed an isolated a 95% ostial stenosis of LMCA. However, immediately following coronary angiography; sudden cardiac arrest developed when transferring a patient from the transfer stretcher to her in-hospital bed. Although we

considered firstly the immediate wiring and opening the LMCA with stenting as an alternative option, our heart team decided to perform emergency cardiac surgery; therefore, the patient was urgently brought to the operating room with ongoing cardiopulmonary resuscitation, and emergency coronary artery bypass operation was performed successfully. She recovered uneventfully and was discharged eight days after surgery. Complete visualization of individual ostial coronary segments might ease the demonstration of coronary stenosis by emergency bedside transthoracic echocardiography. In this case, however, the echocardiogram was performed before coronary angiography. Therefore, the current case emphasizes the real value of the pre-catheterization echocardiogram for the invasive cardiologist and advise him of careful catheter manipulation to avoid the inherent risk of left coronary angiography in such a circumstance.

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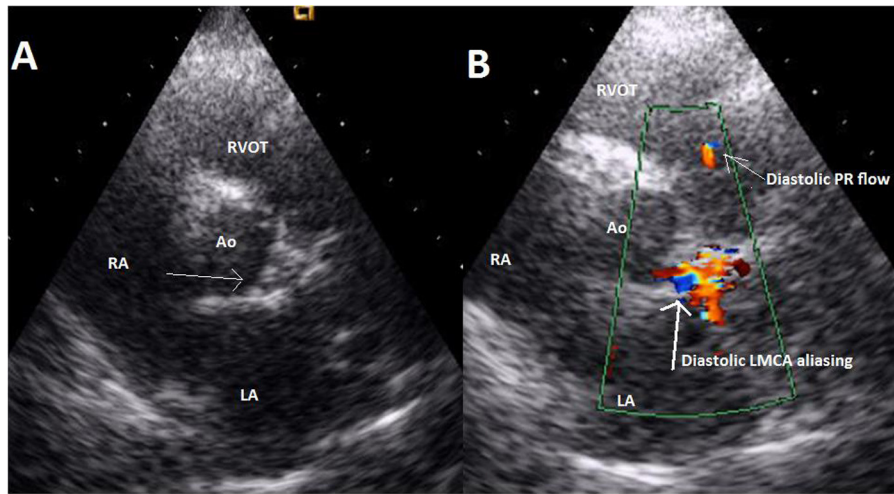


Fig. 1. Basal short-axis view showing small nodular calcification (arrow in A) and diastolic mosaic flow in the ostium of the LMCA (thick arrow in B). LMCA; left main coronary artery; PR, pulmonary regurgitation.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.ihj.2016.12.019>.

Reference

1. Nishimura K, Okayama H, Inoue K, et al. Usefulness of the MOSAIC (measurement of stenosis by aliasing coronary flow) method using transthoracic color Doppler echocardiography in unstable angina patients. *Int J Cardiol.* 2011;151:170–174.