A 71-year-old man was referred to the emergency department of our hospital for chest pain associated with intense interscapular pain. At presentation, a significant difference in systolic/diastolic blood pressure between the left and right arm was measured, and shortly thereafter, the patient developed severe hypotension. Accordingly, multislice computed tomography (MSCT) of the chest was performed because dissection of the thoracic aorta was suspected. There was no dissection, but severe backflow of contrast agent in the inferior vena cava and hepatic veins was observed (suggesting right ventricular dysfunction), together with an enlarged heart and extensive coronary artery calcifications. A defect in the inferior part of the interventricular septum was observed at the midventricular level (Figure 1). The ECG revealed a ventricular rhythm (60 bpm), with QRS duration of 140 ms and right bundle-branch block configuration; however, ST-T–segment elevation was present in the inferior leads (II, III, AvF), suggesting acute inferior wall infarction. Severe hemodynamic and respiratory instability followed, and the patient was hospitalized in the intensive care unit. Transthoracic echocardiography with color Doppler imaging confirmed acute ventricular septal rupture (Figure 2), with extensive akinesia of the inferior, posterior, and lateral walls, indicating acute inferior wall infarction. Secondary to the ventricular septal rupture, severe right ventricular dilatation had occurred. Shock persisted despite treatment with high doses of intravenous inotropics and noradrenaline. The patient died before an intra-aortic balloon pump could be inserted. Autopsy confirmed the MSCT and echocardiographic findings of an acute inferior wall infarction with ventricular septal rupture and right ventricular dilatation. The right coronary artery revealed plaque rupture and occlusion.

Figure 1. MSCT images reconstructed in 4-chamber view (A) and short-axis view (B) showing the ventricular septal rupture (arrow) and dilated right ventricle. RV indicates right ventricle; LV, left ventricle.
Figure 2. Ventricular septal rupture on 2-D echocardiography (4-chamber view) with color Doppler flow. Abbreviations as in Figure 1.
Ventricular Septum Rupture After Myocardial Infarction Demonstrated by Multislice
Computed Tomography

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