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Apical Short-Axis "Bread-Loaf" View for Visualization of Left Ventricular Apical Thrombi

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A middle-aged patient was referred for echocardiography after having had a recent myocardial infarction. Left ventricular (LV) hypokinesis was noted involving the distal segments of the interventricular septum, anterior, lateral, and inferior walls, but no apical thrombus was evident (Fig. 1 and Video clip 1). Using an apical short-axis "bread-loaf" view, a mobile thrombus was found (Fig. 2 and Video clip 2).

Intracavitary thrombi occur in areas of LV regional wall motion abnormalities, including LV aneurysm, myocardial infarction, and dilated cardiomyopathy.[1–4] Not only has it been possible to "miss" an apical thrombus, but misidentification of other structures as thrombus has been a problem since the advent of two-dimensional echocardiography.[5] Common

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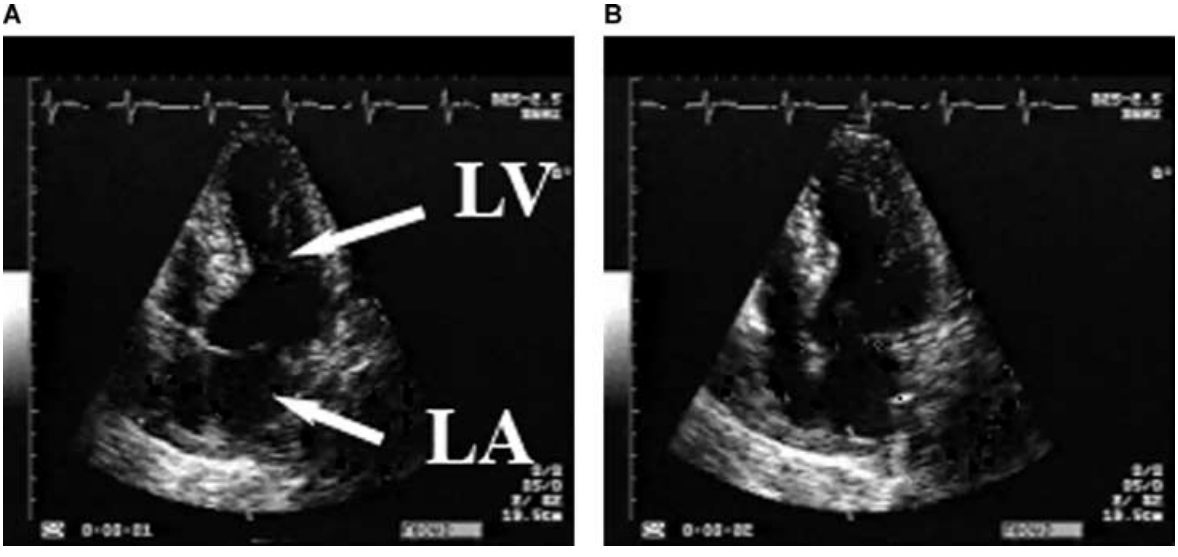

Figure 1. *Apical four-chamber view at **(A)** end-systole and **(B)** end-diastole. A discrete area of apical hypokinesis was noted, but no definite thrombus was noted. A 2.5 MHz probe was used. LA = left atrium; LV = left ventricle.*

Figure 2. *Apical short-axis "bread-loaf" view was used to image the apex of the left ventricle. A loosely attached thrombus (arrow) was readily evident. Imaging was performed at 3.5 MHz. Th = apical thrombus.*

causes of a false positive diagnosis include LV trabeculations, papillary muscles, false chordae, and also near-field artifacts, which are noted more often with lower frequency transducers.[6–8]

The apical short-axis view improves false positive and false negative diagnoses of apical thrombus.[9–11] In addition, this view has been described to be helpful for the diagnosis and evaluation of apical hypertrophy[12] and acquired ventricular septal defect.[13]

In addition to the apical four-, three-, and two-chamber views for all echocardiography studies, our laboratories use the "bread-loaf" view as a matter of routine whenever the LV apex is noted to be abnormal. We believe that using a high-frequency, short-focus transducer for the "bread-loaf" view has helped improve our diagnostic accuracy for apical thrombus.

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Supplementary Material:

The following supplementary material is available online: Video clip 1 and Video clip 2.

Video clip 1: Apical four-chamber view reveals an area of apical hypokinesis, but no definite thrombus was noted.

Video clip 2: Apical short-axis "bread-loaf" view demonstrates a loosely attached thrombus.