LETTERS TO THE EDITOR

Letters to the Editor will be published, if suitable, and as space permits. They should not exceed 1,000 words (typed double spaced) in length, and may be subject to editing or abridgment.

Echocardiographic Thickness of Right Ventricular Anterior Wall

To the Editor:

I read with interest the recent article, "Differentiation of Posterior Myocardial Infarction from Right Ventricular Hypertrophy and Normal Anterior Loop by Echocardiography."

I agree with Kramer et al. that an echocardiographic measurement of the right ventricular anterior wall (RVAW) thickness is useful in differentiating posterior myocardial infarction from right ventricular hypertrophy and normal anterior loop; but the RVAW thickness of their patients with posterior myocardial infarction and subjects with normal anterior loop is thicker than we have found (0.2~0.3 cm²) and than has been found using the subxiphoid approach. The RVAW thickness of their normal subjects ranged from 0.5~0.8 cm. On the other hand, the normal value of left ventricular posterior wall (LVPW) thickness in end-diastole ranges from 0.6~1.1 cm. Their data indicate that the thickness of RVAW is almost equal to that of LVPW. I believe this is highly unlikely. Their overestimation might have resulted from using a 2.25-MHz transducer when recording the RVAW.

We found that the optimal method of recording RVAW is a standard approach with 5.0-MHz transducer. By using a 5.0-MHz transducer, RVAW can be recorded more clearly and precisely, and the pericardium and the myocardium can be distinguished. Figure 1 shows a representative case where the RVAW thickness was overestimated because a 2.25-MHz transducer was used. An ordinary recording of the RVAW with a 2.25-MHz transducer reveals that the thickness of the RVAW is 6 mm (fig. 1B). This is a case of a 60-year-old female with mild systemic hypertension without any evidence of congestive heart failure. When recording the RVAW with a 5.0-MHz transducer on an enlarged scale, the pericardium and the myocardium can be distinguished clearly, and the thickness of the RVAW is 3 mm (fig. 2). The echo-free space between the pericardium and the myocardium is not due to a pericardial effusion because there is no evidence of pericardial effusion in the LVPW (fig. 1A). The cause of this echo-free space is not clear, but it is often seen in normal subjects or various cardiac disorders without any evidence of pericardial effusion in the LVPW. Thus, we suggest that the RVAW should be recorded with a 5.0-MHz transducer on an enlarged scale in order to measure the precise thickness of the RVAW echocardiographically.

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References


The authors reply:

To The Editor:

We appreciate Dr. Tsuda's comments regarding the determination of right ventricular wall thickness. As indicated in his example, this structure measured only 0.3 cm when a 5.0-MHz transducer replaced the conventional 2.25-MHz probe. Since we used lower-frequency standard transducers in order to insure optimal visualization of the left ventricular posterior wall, the right ventricular wall was not visualized as clearly as it was in Dr. Tsuda's example. In the examples we show, we used a 5.0-MHz transducer to obtain the best possible visualization of the posterior ventricular wall.

Figure 1. An ordinary echogram of the left (A) and the right (B) ventricles with 2.25-MHz transducer in a 60-year-old female with mild systemic hypertension. The direction of the ultrasound beam in B is slightly different from that in A. This difference can be permitted because an ultrasound beam must traverse the right ventricular anterior wall (RVAW) perpendicularly to record it clearly. There is no evidence of pericardial effusion in the posterior left ventricle. The thickness of RVAW is 6 mm. IVS = interventricular septum; LVPW = left ventricular posterior wall.
Echocardiographic thickness of right ventricular anterior wall.

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