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Aneurysm of the Abdominal Aorta

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A 76-year-old man was admitted to the intensive care unit with unstable angina pectoris of Braunwald class IIIB. He was known to have hypertension, which was poorly controlled with medication. Physical examination revealed a pulsating mass in the lower abdomen that was suggestive of an aortic aneurysm. An echocardiographic study with a small, hand-held ultrasound device (SonoHeart, SonoSite Inc) showed an abdominal aortic aneurysm containing thrombotic material (Figure 1). His troponin T level was elevated, and he underwent coronary arteriography, which showed a high-grade stenosis at the bifurcation of left anterior descending artery and the first diagonal branch. The lesion was dilated during the same session, with direct stenting of both branches.

After the intracoronary intervention, intravascular ultrasound imaging of the abdominal aneurysm was performed (motorized pullback with speed of 0.5 mm/s) with a 9 MHz, mechanically rotated imaging transducer (Figure 2). The transducer was rotating in a 9 French, close-end, rounded-tip catheter that was 110 cm in length (Ultra ICE, Boston Scientific).

A multislice spiral computed tomography scan (Somatom plus 4 VolumeZoom, Siemens AG) was also performed (Figure 3). By simultaneous acquisition of four 1-mm slices at a pitch of 5 (5 mm Z-translation per 0.5-s gantry rotation), images of the entire area of the abdominal aorta were acquired within 32 seconds. Contrast between the vessel lumen and surrounding tissues was realized by an intravenous injection of 100 mL of Iomeprol (Bracco-Byk Gulden) at an injection rate of 2.5 mL/s. From the data set, a large stack of axial slices was reconstructed and processed with dedicated volume-rendering software (VoxelView, Vital Images) on a separate graphic workstation.

One month later, the patient underwent surgical resection of the aneurysm. He was asymptomatic at the 6-month follow-up.

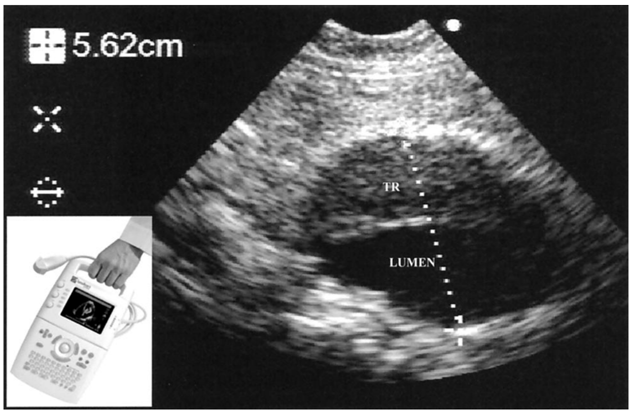

Figure 1. Transverse image of the aneurysm of the abdominal aorta (56 mm in diameter), which contains a large thrombus (TR). The small, hand-held ultrasound device is shown in the insert. Dotted line represents the calipers used for measurement of the diameter of the aneurysm.

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An animated version of this figure can be found at http://www.circulationaha.org

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Circulation encourages readers to submit cardiovascular images to the *Circulation* Editorial Office, St Luke's Episcopal Hospital/Texas Heart Institute, 6720 Bertner Ave, MC1-267, Houston, TX 77030.

(*Circulation.* 2001;104:e10-e11.)

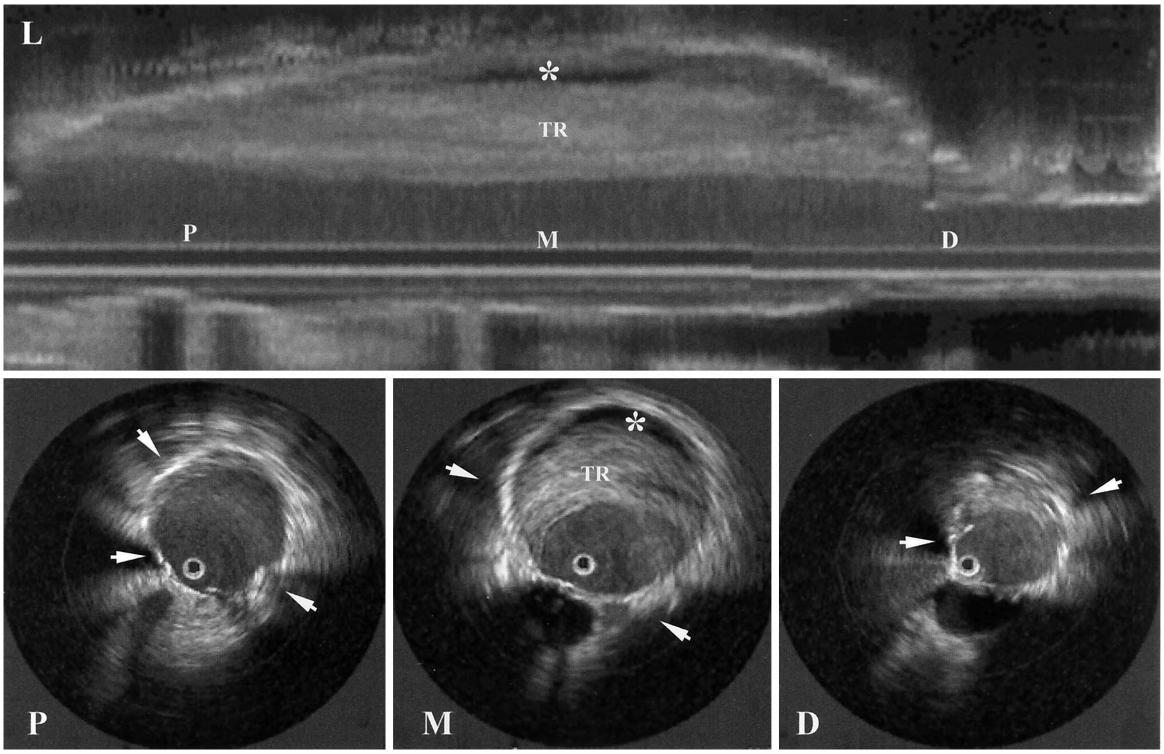

Figure 2. A longitudinal image (L) of the abdominal aortic aneurysm containing thrombus (TR), reconstructed from the sequentially recorded cross-sectional images. The reconstruction was performed on a workstation designed for 3D reconstruction of echocardiographic images (Echoscan, Tomtec). Cross-sectional images corresponding to the proximal (P), middle (M), and distal (D) section of the aneurysm are shown. In the middle section, the gradual decrease in echogenicity toward the outer wall correlates with the organization and age of the thrombotic material. The dark, less echogenic layer (*) adjacent to the outer wall represents chronic organized thrombus, whereas the more echogenic layers closer to the lumen indicate more recent thrombosis. The extensive calcifications of the outer wall of the aneurysm are recognized as a highly echogenic rim with acoustic shadowing (arrows). The spontaneous echo-contrast effect within the lumen suggests prothrombotic slow flow and is better recognized from dynamic images, which can be found at http://www.circulationaha.org

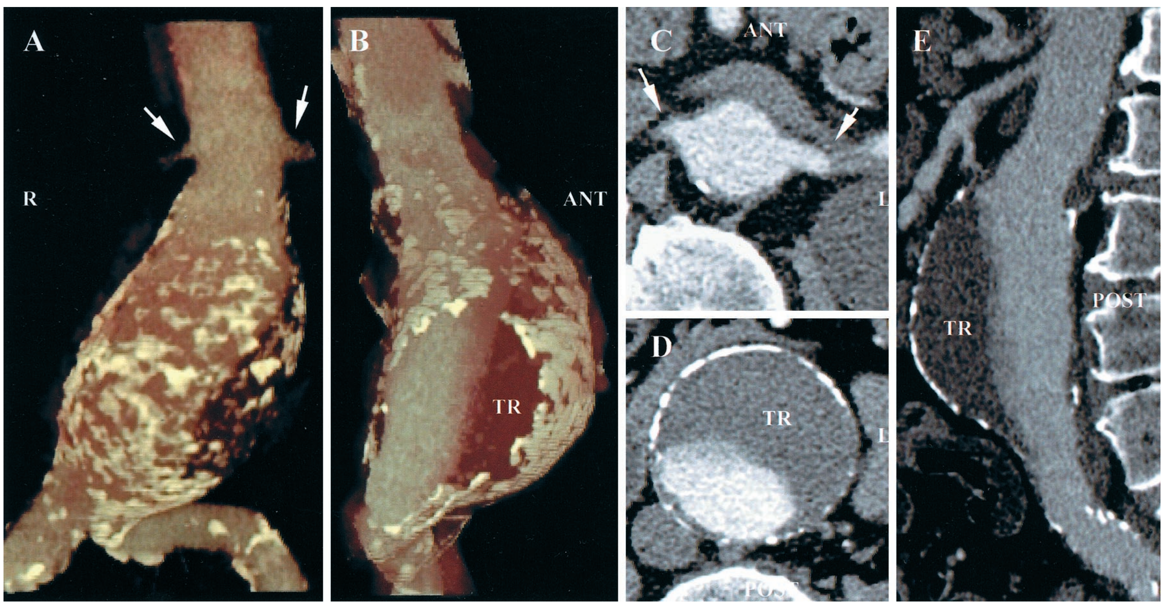

Figure 3. Multislice, computed tomography, 3D volume-rendered images from an anterior (A) and a right lateral (B) perspective in which the large thrombus (TR) is visualized between the contrast-enhanced aortic lumen and the calcifications in the outer wall of the aneurysm. Involvement of the renal arteries (arrows) was excluded (A, C). The thrombus had mainly developed at the anterior side (D), and the diameters measured at the site of maximum dilatation were 64×62 mm. A longitudinal cross-section of the aneurysm, which has been curved along the trajectory of the abdominal aorta and proximal right common iliac artery, is shown in E. ANT indicates anterior; POST, posterior; R, right; and L, left.

Corrections

In the article by Pasceri et al that appeared in a recent issue of the Journal (*Circulation.* 2001;103:2531–2538), information about one of the authors was reported incorrectly. The second author appeared in the article as Jed Chang, BS. His name should have appeared as Jed-Sian Cheng, BA.

In the Image by Sianos et al that appeared in a recent issue of the Journal (*Circulation*. 2001;104:e10–e11), one of the author's names was misspelled. Attila Thuri, MD, should have appeared as Attila Thury, MD.

(*Circulation.* 2001;104:1992.)

***Circulation* is available at http://www.circulationaha.org**