A 69-year-old woman with a history of atypical chest pain was referred for coronary computed tomographic (CT) angiography study with a 64-detector row multidetector CT scanner (LightSpeed VCT, GE Healthcare, Milwaukee, Wis). Imaging was performed after multiphasic injection of non-ionic contrast media (Omnipaque 350, GE Healthcare) into the right antecubital vein at a rate of 4.0 mL/s through a 20-gauge needle with a dual-barrel injector (Stellant D; Medrad, Warrendale, Pa).

The coronary arteries were patent. However, a cauliflower-like accessory atrial appendage was incidentally noted at the anterior roof of the left atrium (LA) (Figures 1 through 4). No definite thrombus was found inside this accessory atrial appendage. To further assess the contractility of this anomaly, volumetric measurements of the LA and appendages were performed. Twenty phases of CT images were reconstructed during the cardiac cycle. The maximum volume of the LA was 84.3 cm³ at 40% of cardiac cycle and the minimum volume was 67.3 cm³ at 0% of cardiac cycle. The fractional LA volume change was 20%. The maximum volume of the LA appendage was 7.1 cm³ and the minimum volume was 5.5 cm³. The fractional LA appendage volume change was 32%. The volume of the accessory atrial appendage measured ≈1.0 cm³, and in contrast to what was seen in the LA and LA appendage, no noticeable phasic change could be identified.

Left atrial contour abnormalities are increasingly recognized with the improved spatial resolution of modern noninvasive imaging modalities. Focal outpouches of the LA have been reported to occur in 10% to 15% of the adult population.1,2 Thrombosis in the blind-ended small noncontractile accessory atrial appendage might be a possible source of unexplained embolic stroke. The clinical significance of this common but ignored condition will be elucidated in the near future with the growing clinical use of cardiac CT.

References
Figure 2. Oblique coronal reconstructed CT image (left anterior oblique 20°) shows the locations of the accessory atrial appendage (arrow) and the left atrial appendage (arrowhead).

Figure 3. Volume-rendered image of the left atrium in anterior view reveals a small, narrow-necked outpouch with cauliflower-like appearance at anterior roof of the left atrium (arrow), as well as the left atrial appendage (arrowhead).

Figure 4. Virtual endoscopic view inside the left atrium shows the orifice of the accessory appendage (arrow), the left atrial appendage (arrowhead), the left superior pulmonary vein (LSPV), and the left inferior pulmonary vein (LIPV).
Accessory Left Atrial Appendage: A Neglected Anomaly and Potential Cause of Embolic Stroke
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