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## Right Ventricular Acupuncture Needle Embolism Detected on Coronary Computed Tomography Angiography

Young Jin Kim, MD; Ji Youn Kim, MD; Byoung Wook Choi, MD, PhD; Ji Eun Nam, MD; Tae Hoon Kim, MD, PhD; Kyu Ok Choe, MD, PhD

A 70-year-old man presented to the emergency department with dyspnea and chest discomfort. He had a history of chronic obstructive lung disease, and 1 year before presentation he had been hospitalized with pneumothorax. ECG revealed right-axis deviation, and cardiac biomarkers were negative. He underwent computed tomography coronary angiography to rule out ischemic heart disease, which revealed normal coronary arteries but a metallic density in the right ventricular wall (Figure 1). There was no detectable pericardial effusion. Another metallic density was also noted in the small branch of the pulmonary artery at the right upper lobe (Figure 2). The patient had undergone gold-needle acupuncture 1 year before, and a chest radiograph showed numerous gold needles in the neck, chest wall, and abdominal wall (Figure 3). The 3-dimensional volume-rendered images showed a thin linear metallic density in the right ventricular wall that was the same shape and size as the ones in the chest wall (Figure 4).

The presence of a foreign body in the heart may result from either a direct injury to the heart such as a gunshot injury or from some other embolization to the heart from distal penetration sites (eg, the migration of a catheter or a needle fragment from a peripheral vessel).<sup>1,2</sup> In many Asian countries, patients who present with pain in any part of the body

are occasionally treated with acupuncture, which uses various kinds of needles. Gold needles are very fine, range in length from 5 to 10 mm, and are often implanted permanently in the skin or subcutaneous layer. On plain radiography, implanted gold needles typically appear as fine, linear, metallic densities. In this case, because the gold needle used was too small to penetrate the chest wall and reach the heart, and because there was a coexisting pulmonary embolization by a gold needle on the right upper lobe, we assumed the cause to be an embolization to the heart from peripheral vessels rather than direct penetration.

### Disclosures

None.

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From Department of Radiology, Yonsei University College of Medicine, Severance Hospital (Y.J.K., J.Y.K., B.W.C., J.E.N., K.O.C.), and Yongsong Severance Hospital (T.H.K.), Seoul, Korea.

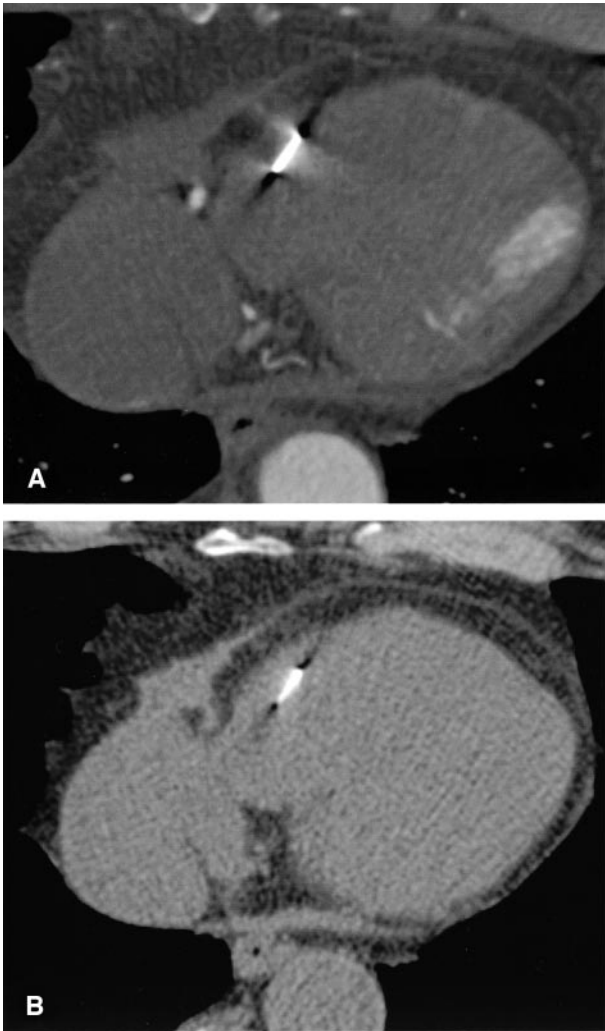
Correspondence to K.O. Choe, MD, PhD, Department of Radiology, Yonsei University College of Medicine, Severance Hospital, 134 Sinchon-dong, Seodaemun-gu, Seoul 120-752, Korea. E-mail kochoe@yumc.yonsei.ac.kr

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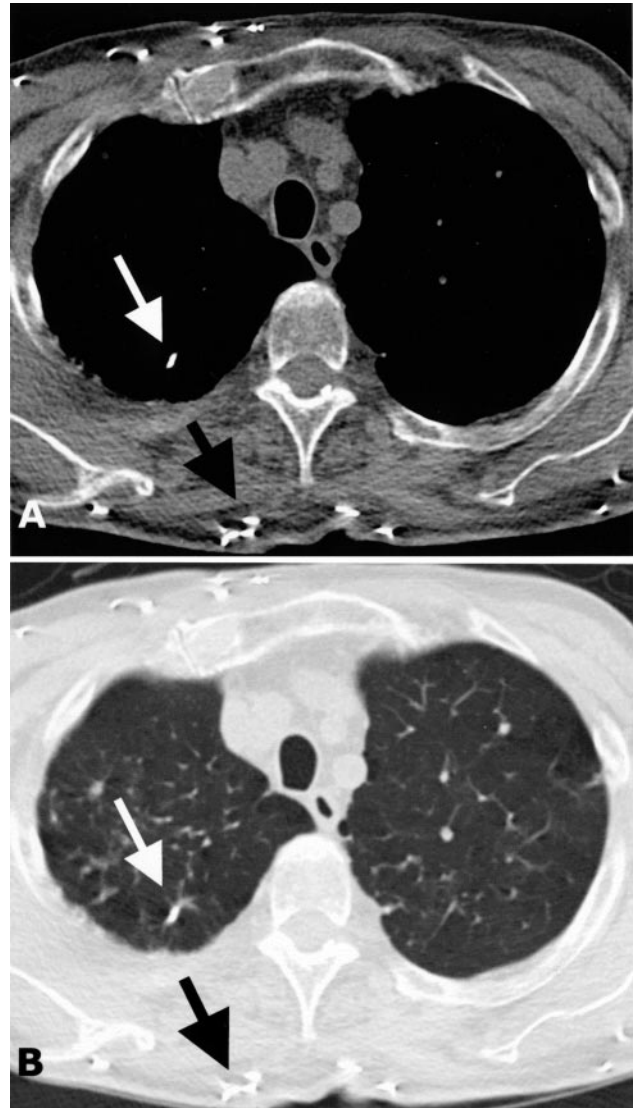
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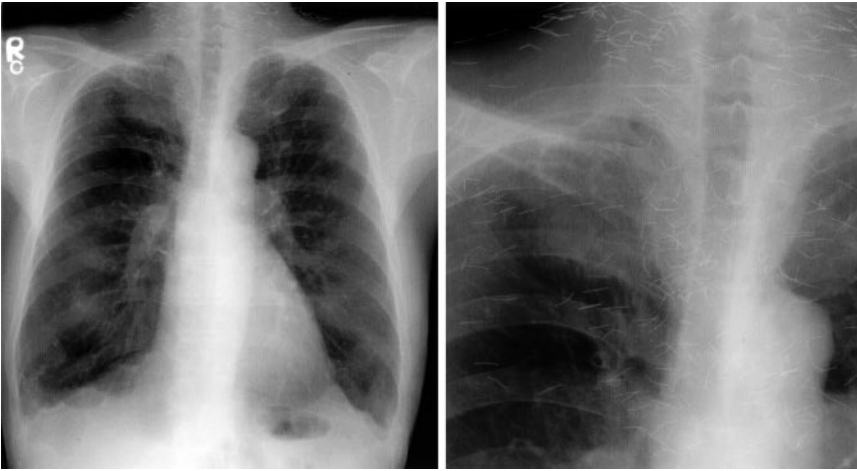
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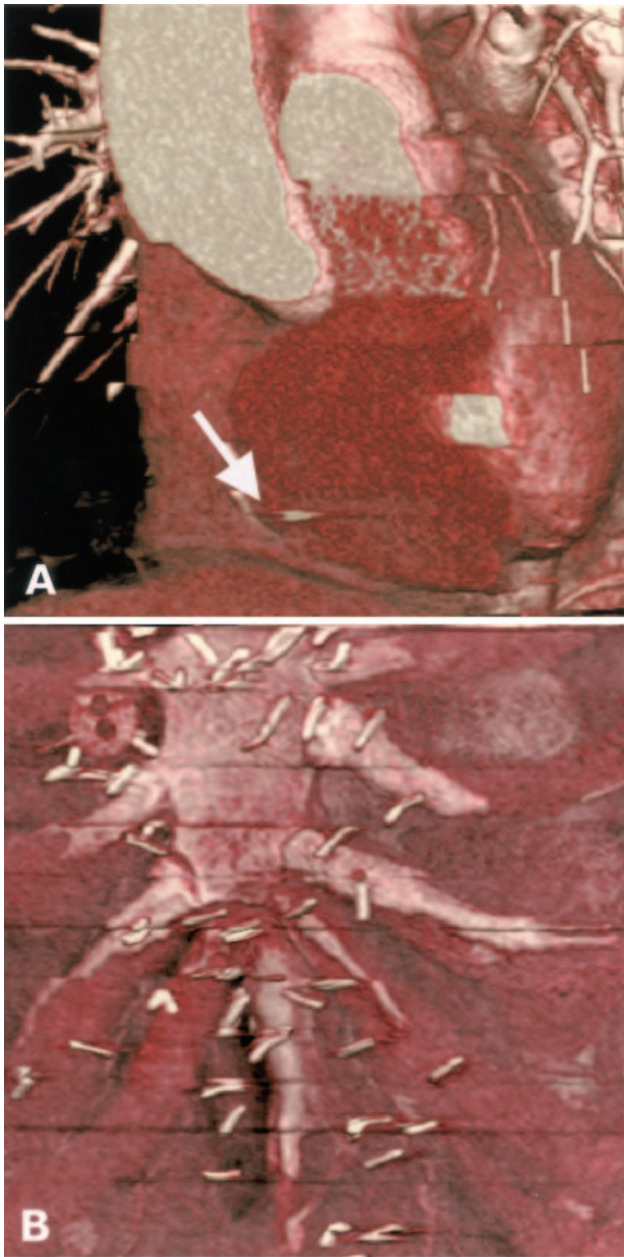
**Figure 1.** Coronary computed tomography angiography (A) and precontrast image for calcium scoring (B) show a thin linear metallic density in the right ventricular wall.



**Figure 2.** Mediastinal setting (A) and lung setting (B) images of precontrast computed tomography demonstrate another metallic density (white arrows) in the small branch of the pulmonary artery at the right upper lobe, suggestive of metallic foreign-body embolism. Numerous metallic densities (black arrows) are seen in the chest wall.



**Figure 3.** Chest radiograph reveals numerous thin linear metallic densities in the neck and chest wall.



**Figure 4.** Three-dimensional volume-rendered images of coronary computed tomography angiography show a thin linear metallic density in the right ventricular wall (A, arrow) of the same shape and size as the ones in the chest wall (B).