In the literature, the foreign bodies described in the cardiac cavities are medical devices such as embolization of a catheter or a fragment from the catheter.\textsuperscript{1,2} We report a case of an unusual finding in the heart. A 42-year-old woman was admitted to the cardiac intensive care unit because of syncope associated with atypical chest pain and palpitations. She had no significant medical history with no previous cardiac, venous, or artery catheterization. She described a lipohymia event a few weeks ago. Her physical examination was unremarkable except for a tattoo on the left parasternal skin done 3 years before. Her electrocardiogram revealed multiple ventricular premature beats. Treadmill stress test showed a sustained right ventricular tachycardia without ST depression.

Transsthoracic echocardiography revealed a linear hyperechogenic image in the right ventricle seen only from the left parasternal view. The appearance of this foreign body was confirmed by 64-slice computed tomography (CT). The retrieved material was a 28-mm long metallic nonmedical device.

Figure. A, Two-dimensional transthoracic echocardiogram parasternal long-axis view depicting the presence of a foreign body (arrow) in the right ventricle chamber. B–C, Sixty-four-slice CT thin-slice maximum intensity projection reconstruction image (B) and volume-rendering (C) show a long curvilinear hyperdensity image (arrow) located in the right ventricle with one edge of this foreign body into the right ventricular free wall. RV indicates right ventricle; LV, left ventricle. D, The retrieved material was a 28-mm long metallic nonmedical device. E, The edge, which was into the right ventricular free wall, analyzed by an optical microscope. F, Picture of the tattooed skin, the first initials of her children (arrow).
parasternal long-axis view (Figure [A]). Sixty-four-slice CT with a prospective electrocardiography-gated acquisition and an iterative reconstruction showed normal coronaries and confirmed a long curvilinear hyperdensity image (900 Hounsfield units) located in the right ventricle. One edge of this foreign body was into the right ventricular free wall (Figure [B–C]; online-only Data Supplement Movie).

Percutaneous retrieval\(^1\) was decided. The procedure was performed using a right femoral venous access with a 12-French Mullins sheath placed in the right ventricle. An 8-French Judking Right 4 guiding catheter (Medtronic, USA) was advanced through the Mullins sheath into the right ventricle under fluoroscopic guidance. Then, an Amplatz Gooseneck 25-mm snare (EV3) was used to retrieve the intracardiac foreign body with success after the needle moved to the right inferior lobar pulmonary artery. The removed material was not a medical device (Figure [D]).

Therefore, we were in a rare situation with an intracardiac nonmedical device complicated by right ventricular tachycardia and syncope. This device was analyzed by the French Scientific Police’s Laboratories with optical examination, scanning electron microscope, and x-ray microspectroscopy. The wire is black, approximately 28 mm in length, one edge is rounded, and the other is distorted and broken (Figure [E]); the diameter is approximately 228 \(\mu\)m. The chemical composition is mostly iron with traces of manganese and copper. These tests were consistent with a piece of needle used by nonprofessional tattoo artists. The needles are welded to a rod-shaped comb but rupture of the needles is described. The mechanism of migration to the right ventricle is unclear. The tattooed skin, the first initials of her children, is at the third intercostal space and left parasternal (Figure [F]). In this case, the most likely mechanism is migration through the venous system from a large branch of the left internal mammary vein after percutaneous puncture. The internal mammary veins drain into the trunk’s brachiocephalic vein and allow the migration of this foreign body to the heart. The patient was free of symptoms at 3 months follow-up. The outpatient Holter monitor revealed no ventricular arrhythmias. Assessment of right ventricular function and morphology by echocardiography and MRI were normal.

Infections, skin trauma, and hypersensitivity reaction are classic complications of tattoos\(^4\); however, this is the first report of a tattoo needle migrating into the heart with syncopal ventricular tachycardia. Love of children touched a mother’s heart and almost killed her.

Acknowledgments

The authors thank French Scientific Police’s Laboratories, INPS.

Disclosures

None.

References


Key Words: cardiac catheterization ● computed tomography ● echocardiography ● retrieval device ● syncope
Love of Children Touched Mother's Heart
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_Circ Cardiovasc Interv._ 2012;5:e51-e52
doi: 10.1161/CIRCINTERVENTIONS.112.970939
_Circulation: Cardiovascular Interventions_ is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 1941-7640. Online ISSN: 1941-7632

The online version of this article, along with updated information and services, is located on the World Wide Web at:
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Data Supplement (unedited) at:
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Supplemental Material

Video
Semi-transparent volume rendering heart reconstruction show a long curvilinear hyper-density image located in the right ventricle with one edge of this foreign body into the right ventricular free wall.