Uncommon intracardiac finding after cardiac transplantation mimicking pacemaker leads

Bernd Schulze1*, Rainer Hoffmann2, Werner Scholtz3, Jan Gummert1, and Lech Paluszkiewicz1

1Department of Cardiovascular Surgery, Heart and Cardiovascular Centre North Rhine-Westphalia, Ruhr University Bochum, Georgstr. 11, Bad Oeynhausen 32545, Germany; 2Department for Cardiology, Bonifatius Hospital Lingen, Lingen a.d. Ems, Germany; and 3Department for Cardiology, Heart and Cardiovascular Centre North Rhine-Westphalia, Georgstr. 11, Bad Oeynhausen 32545, Germany

* Corresponding author. Tel: +49 5731 97 2319; fax: +49 5731 971871, E-mail: bschulze@hdz-nrw.de

A 62-year-old male was referred to our hospital with the diagnosis of an unclear intracardiac structure. He underwent heart transplantation in March 2012 due to ischaemic cardiomyopathy. Progressing osteoporosis, which has been developed in the setting of immobilization and steroid therapy, caused the fractures of L1–3 which were stabilized by percutaneous vertebroplasty.

The transthoracic echocardiography performed on admission (Panel A, see Supplementary data online, Video S1) revealed an electrode-like, echo-dens structure in the right ventricle yielding to the apex. Transoesophageal echocardiography (Panel B, see Supplementary data online, Video S2) confirmed the finding and showed movement of the structure through the tricuspid valve and detected a second electrode-like structure in the right atrium. The chest X-ray (Panel C) depicted the part of an old ICD electrode at the level of the superior caval vein (arrows).

Computed tomography (Panel D) revealed the unclear multiple, linear, dens structures in the distal pulmonary arteries.

We decided to extract the structure from right atrium and right ventricle during catheterization (Panel E, see Supplementary data online, Video S3). After extraction, the structure was identified as pallacos. Unfortunately, some material broke up and embolized into the pulmonary arteries, however without clinical consequences.

In our case, the bone cement, which was injected under high pressure in the vertebrae during percutaneous vertebroplasty, had migrated via the venous return through the paravertebral veins (Panel F) to the right atrium. This well-recognized complication occurs in ~7% of patients but leads to pulmonary embolism only in 0.8% of cases. To our knowledge, this is the first report of pallacos embolisms in a cardiac transplant recipient.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

Panel A. Transthoracic echocardiography showing the apical four-chamber view with an echo-dense, electrode-like structure (arrow) crossing the tricuspid valve up to the apex of the right ventricle. See also Supplementary data online, Video S1. LA, left atrium; LV, left ventricle; RA, right atrium; RV, right ventricle.

Panel B. 3D-transoesophageal echocardiography depicting the electrode-like structure (arrows) crossing the tricuspid valve in a short axis. See also Supplementary data online, Video S2. RA, right atrium; TV, tricuspid valve.

Panel C. Thorax X-ray displaying the part of an old ICD electrode at the level of the superior caval vein (arrows).

Panel D. CT scan of the thorax revealing multiple pallacos embolizations (arrows) in the peripheral pulmonary arteries.

Panel E. Fluoroscopy showing a biopsy forceps (solid arrow) extracting the pallacos (dashed arrow) in the right ventricle. See also Supplementary data online, Video S3.

Panel F. X-ray of lumbar spine depicting vertebroplasty with pallacos (arrows).