Abnormal coiling of a pacemaker lead into the pulmonary artery with massive infectious thrombosis

Fritz Mellert*, Dieter Bimmel, and Claus J. Preusse

Department of Cardiac Surgery, Heart Center at the University of Bonn, Sigmund-Freud-Strasse 25, 53105 Bonn, Germany

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A 78-year-old woman with a history of S-A block originally received a DDDR pacemaker on the right thoracic side in October 2000. After several re-operations (ventricular lead replacement, generator dislocation), the device was replaced due to battery depletion in April 2005. In May 2005, the patient was re-admitted with intermittent fever, but no evidence for any inflammatory process was found. Six months later, the patient developed septic temperatures. Computed tomography scan documented bilateral pulmonary embolism and suspect abscesses on the pacemaker leads, which were not apparent in former examinations. Transoesophageal echocardiography revealed extensive vegetations on the leads, mostly on the atrial portion, and also a large thrombus on a ventricular lead ‘coil’, which dislocated into the pulmonary artery in systole (Figure 1A). Coronary angiography showed the thrombotic coil completely prolapsing through the pulmonary valve during systole (Figure 1B). Although this movement resulted in remarkable stress on the lead tip, electrical properties of the ventricular lead were—surprisingly—excellent.

Cardiac surgery confirmed angio- and echocardiographic findings with massive lead-thrombosis. Especially in the coil area, a large thrombus obviously dislocated the lead with systolic blood outflow (Figure 1C). When explanting the ingrown tip, consecutive ventricular injury was successfully repaired. Intracardiac thrombosis on chronically implanted pacemaker leads is a rare occurrence. This case report underlines the importance of accurate investigation and early explantation of extremely coiled leads to avoid thrombus formation and infection.

Conflict of interest: none declared.

Reference

Figure 1  (A and B) THR indicates the coiled lead with attached rotund thrombus. PA, pulmonary artery; RV, right ventricle. (C) THR* indicates the detached septic thrombus from the coil. A-THR, atrially located thrombus; AL-TIP, truncated tip of the atrial lead; VL-TIP, tip of the ventricular lead with myocardial tissue.