

EP CASE REPORT

Chylothorax and chylopericardium as unusual manifestation of pacing lead related complication

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A 28-year-old patient after implantation in the 10th year of the VVI pacing system due to vasovagal syndrome, after unsuccessful attempt to remove excessively tensed lead and simultaneous DDD implantation on the right side in 17 years of age and after replacement of the generator in the age of 27 was admitted to the hospital due to fever up to 39°C, shivers, and oedema of the left upper limb. In laboratory tests a high level of inflammatory and thrombotic parameters was found: CRP 132 ($n = 0-5$ mg/dL), d-dimer 1.54 ($n = 0.0-0.5$ µg/mL). Echocardiographic examination revealed pericardial fluid—up

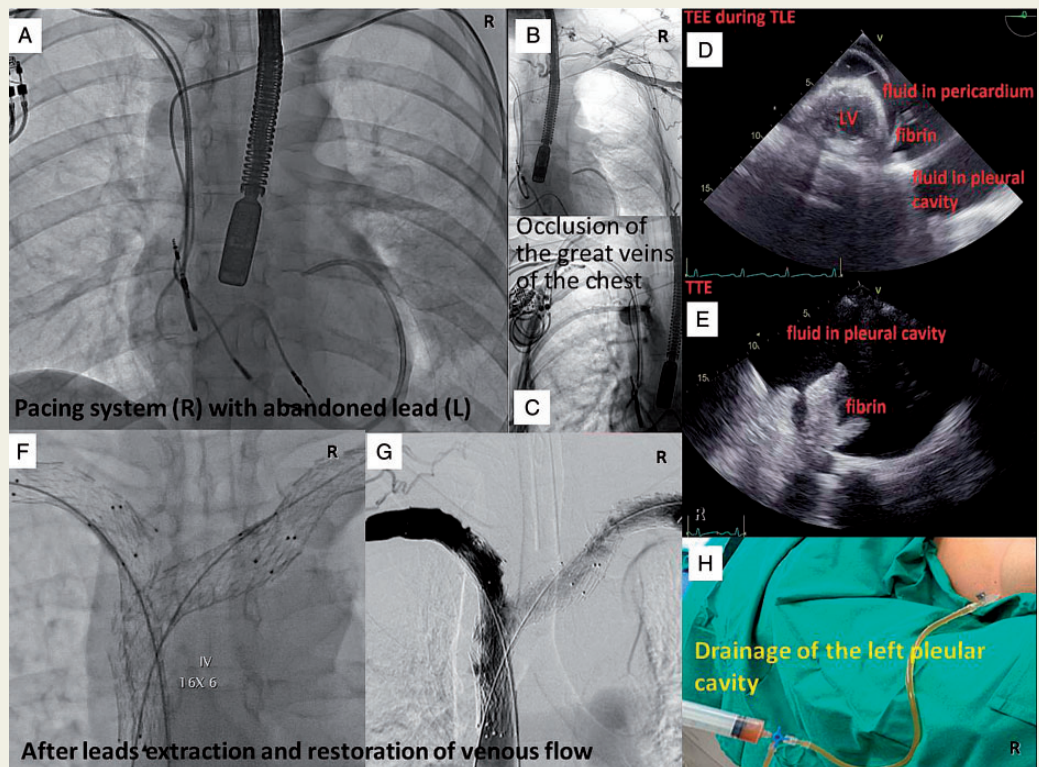


Figure 1 (A–E) Imaging of the course of leads, venous vessels and fluid in the pericardium and pleural cavity. (F–H) Venous angioplasty and drainage of the pleural cavity during procedures.

to 22 mm in front of the right ventricle and fluid in the left pleural cavity (10 × 6 cm). Computed tomography showed occlusion of brachiocephalic veins and initial segment of the superior vena cava (Figure 1A–E). Pericardiocentesis was performed resulting in a total of 800 mL of fluid with lymphatic composition: high level of triglycerides (638 mg/dL), low level of total cholesterol (79 mg/dL), and predominance of lymphocytes (80%). No atypical cells were found. Surgical ligation of the thoracic duct was considered, however in the first stage, transvenous leads extraction was planned along with an attempt to patency the venous vessels. Using the telescopic Cooke sheaths, the left site

abandoned lead was extracted together with atrial and ventricular leads on the right side and the veins were successfully recanalized by angioplasty with the implantation of four stents Venovo (Bard) (Figure 1F–H). Cultures from the abandoned lead and pericardial fluid demonstrated *Staphylococcus epidermidis*. The patient was treated with Vancomycin with complete suppression of chylopericardium and chylothorax. Due to the absence of symptoms in a last few years and the lack of pacing documented in the device memory, the system was not reimplanted.

Venous occlusion occurs in approximately 12% of patients with pacing system from a few days to 9 years after implantation.¹ Pathogenesis is probably related to the inflammatory mechanism leading to endovascular fibrosis and thrombosis.² In the presented case, occlusion of brachiocephalic veins by the pacemaker leads, with superimposed thrombosis, probably initiated a cascade of events that resulted in chylous leakage. The substrate of venous and lymphatic circulation disorders was lead related infection developing secretly on the side of the abandoned lead. The dramatic course of the infectious process has been resolved by the removal of infected lead along with the recovery of venous flow. The restoration of the venous patency and treatment of infection resulted in re-establishment of the proper chylous flow.

Conflict of interest: none declared.

References

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