

Transvenous retained lead fragment removal after incomplete extraction assisted by three-dimensional transoesophageal echocardiography

Przeżyłne usunięcie pozostawionego fragmentu elektrody wspomagane obrazowaniem trójwymiarowej echokardiografii przezprzełykowej

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A 79-year-old woman with diagnosed pacemaker lead endocarditis was admitted for percutaneous lead extraction. Pacemaker and leads removal using Byrd polypropylene sheets was performed with incomplete radiographic success with retained 4 cm long atrial pacemaker lead fragment (Fig. 1A). Due to the patient's poor clinical state a second attempt of the fragment extraction was performed. The procedure was assisted by transoesophageal echocardiography with three-dimensional visualisation showing the localisation of the lead fragment (Fig. 2A, B). Several unsuccessful attempts of traction of the lead fragment were performed using basket, pig-tail, and loop catheters and Needle's-eye snare, but after each successful catch it slid and was lost by the catheter (Fig. 1B). Finally, success was achieved when the lead fragment was fixed with the pig-tail catheter and grasped with the basket catheter through the two transvenous sheets (Fig. 1C, D). A cutting sheet was used to dilate and free the lead fragment (Fig. 1E–G). The patient was found to reach final radiological and clinical success regarding indication for leads removal. A film of the procedure is available at: <http://youtu.be/OiCqijp7VAQ>.

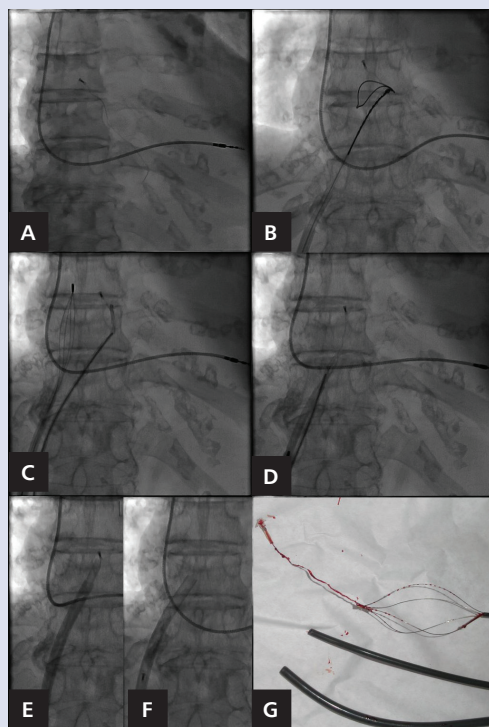


Figure 1. The 4 cm long atrial lead fragment in right the atrial appendage and the temporary ventricular pacing lead with active fixation (A). Byrd Working Station was utilised. Attempt to catch, reposition, and extract the lead fragment by lasso catheter (B). Stabilisation of the free part of the lead fragment with the pig-tail catheter (C) allowed us to catch it distinctly with the basket catheter (D). Dissection of connecting tissue bridges using rotation of truncated internal sheet of Byrd Working Station (13 French) (E) allowed us to free the lead fragment (F). Basket catheter, both sheets of the Byrd Femoral Work Station™ (Cook Vascular Inc.), and removed fragment of the lead with tip. Cutting catheter allowed dissection of connecting tissue from the distal part of the lead and its successful extraction (G)

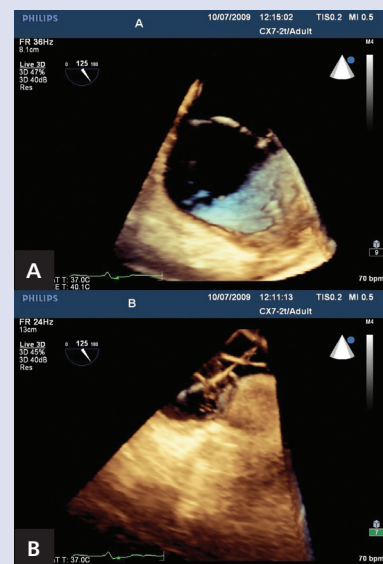


Figure 2. Real-time three-dimensional (3D) transoesophageal echocardiography (TEE) showing the fragment of atrial lead placed in the right atrial appendage (A) and the temporary ventricular lead running crosswise (B) (Philips® iE33 with live 3D software; X7-2t TEE probe)

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