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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

Intracardiac damage of silicone insulation of a single lead and infective endocarditis

Wewnątrzsercowe uszkodzenie silikonowej izolacji pojedynczej elektrody i infekcyjne zapalenie wsierdzia

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A 59-year-old woman after artificial mitral valve and pacemaker implantation (VVI with ventricular lead Biotronik Synox 60BP) underwent cardiac surgery due to infective endocarditis. Transoesophageal echocardiography performed to diagnose recurrent septic fevers revealed vegetations connected to the pacemaker lead and artificial valve, and computed tomography confirmed multiple pulmonary embolisms. No pacing or sensing abnormalities of the pacemaker were present. Endocardial pacing lead, together with artificial valve, was removed using extracorporeal circulation. Simultaneously, a new mitral valve and an epicardial pacing system were implanted. The lead unseal with metal wire exposure was discovered (Fig. 1B). In this location, vegetation infected with *Staphylococcus* was attached to the lead (Fig. 1A). The 9-year-old lead was damaged at its passing through the tricuspid valve. The use of an optical microscope confirmed silicone layer reduction up to a complete absence of the outer lead insulation (Fig. 1C). In spite of antibiotic and cardiosurgical therapy, the patient died due to septic shock. Lead-dependent infective endocarditis (LDIE) associated with abrasion of silicone insulation of two endocardial leads as a result of their friction in the right atrium has been previously described. We have also described abrasion of silicone insulation in intracardiac parts of pacemaker leads as a new mechanism of LDIE. In this case, abrasion with disruption of silicone insulation occurred in a single lead system implanted 9 years previously. A possible cause of damage was lead abrasion due to its contact with the tricuspid valve and silicone wear caused by lead bending. LDIE followed by pulmonary embolism and artificial mitral valve infection was associated with mechanical damage of the lead and resulted in the patient's death. Damage of lead insulation was electrically silent. Damage of the endocardial pacemaker lead with disruption of outer silicone insulation and metal wire exposure may occur in the presence of a single lead. LDIE with severe clinical presentation and lack of heart stimulation malfunction may be a symptom of such damage.

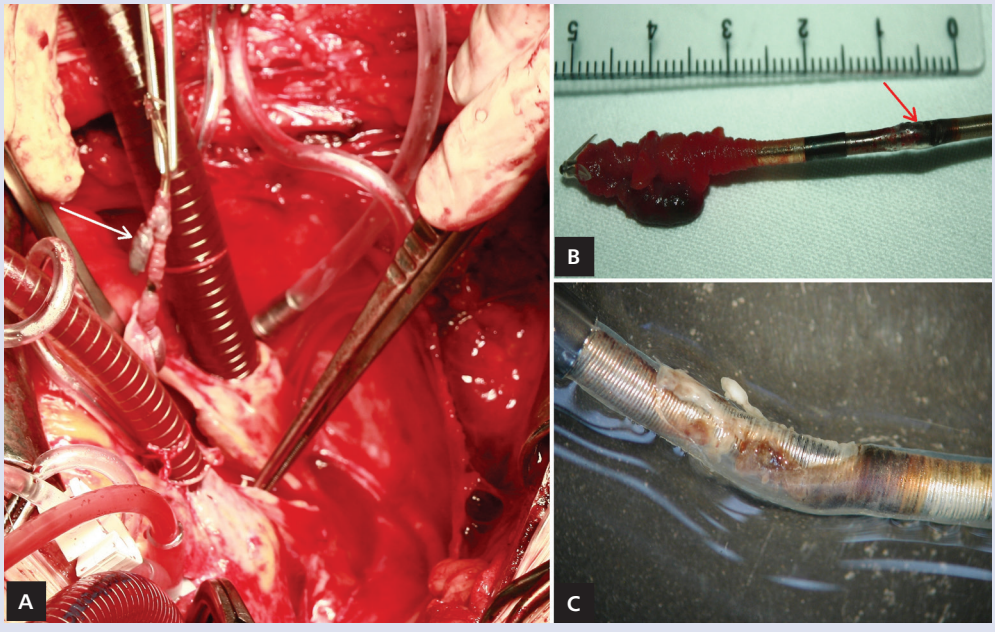

Figure 1. **A**. Operating table: surgically removed lead with attached infected vegetation (arrow); **B**. Site of isolation disruption with exposure of the lead inside filled with haemolysed blood (arrow); **C**. Macrophotography — silicone insulation reduction, up to complete lack of isolation and metal wire exposure

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