A 75-year-old man with a permanent DDD pacemaker implanted 3 years ago was admitted to our hospital with 1 month history of low-grade fever and chills. Blood cultures were positive for *Staphylococcus schleiferi*. Transthoracic echocardiography revealed a large right atrial mass attached to the pacemaker lead, highly suspicious of being a vegetation. A transoesophageal echocardiogram (TEE) was performed showing a well-delineated echogenic mass measuring $11 \times 13$ mm adherent to the pacemaker lead close to the tricuspid valve, consistent with a vegetation (Panels A and B; Supplementary material online, Videos S1 and S2). Other mobile mass measuring $3 \times 10$ mm was detected at the atrial lead reaching the superior vena cava. Live three-dimensional TEE improved the spatial assessment of the vegetations, and demonstrated that both were attached to the atrial pacemaker lead (Panels C and D; Supplementary material online, Videos S3 and S4). An 18F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG PET/CT) scan was performed showing hypermetabolic activity in the pacemaker lead at the level of the right atrium (Panel E). Treatment with daptomycin and gentamicin was introduced promptly and the pacemaker system was percutaneously explanted. The vegetation was crumbled during lead removal, but cultures on the distal intravascular lead segments confirmed the presence of *Staphylococcus schleiferi*. The patient completed a 4-week course of intravenous antibiotics and has subsequently remained well. A follow-up FDG PET/CT scan done a month later showed no residual activity at the new pacemaker lead (Panel F).

Supplementary material is available at *European Heart Journal* online.