

Venous Cannula Obstruction Due to Vegetative Endocarditis

To the Editor:

Endocarditis resulting from pacemaker-lead infection is an uncommon condition, but if it is not properly diagnosed and treated, it can cause serious complications. Increasing use of atrioventricular devices makes it important to study this syndrome. We present the case of a male patient aged 42 with a sequential atrioventricular pacemaker without active fixation that had been functioning correctly during 8 years, which had been prescribed due to an atrioventricular blockage resulting from hypertrophic cardiomyopathy diagnosed 15 years before. A year before, he presented a profile with fever and repeated haemocultures positive for *Staphylococcus epidermidis*. As this bacterium is not very aggressive, it was treated with antibiotics during 6 weeks until disappearance of the vegetation stuck to the pacemaker lead was confirmed by ultrasound.¹ Treatment was then continued with amoxicillin/clavulanic acid during 1 year. After discontinuing antibiotics, the patient was admitted once again with a fever. Hemocultures tested positive for *S epidermidis*, which indicated a recurring infection. The diagnosis was fundamentally based on clinical and ultrasound examination. Current images from the transoesophageal ultrasound² show pacemaker cables with attached vegetations (Figures 1A and B) that are very large (4.18×2.48 cm) and branching, and which leave both the superior and inferior vena cava free (Figures 1C and D) and protrude toward the right ventricle in end-diastole (Figures 1E and F), apparently without affecting the tricuspid valve. Perfusion and ventilation study indicated the existence of septic pulmonary emboli. Given that the problem was an enormous growth attached to the pacemaker lead, percutaneous techniques such as extraction with a locking stylet or dissection with electrosurgical RF sheaths or an excimer laser³ due to the high risk of embolization. Antimicrobial treatment with vancomycin, gentamycin, and rifampin was started. Surgery was proposed as the only viable option, and the decision

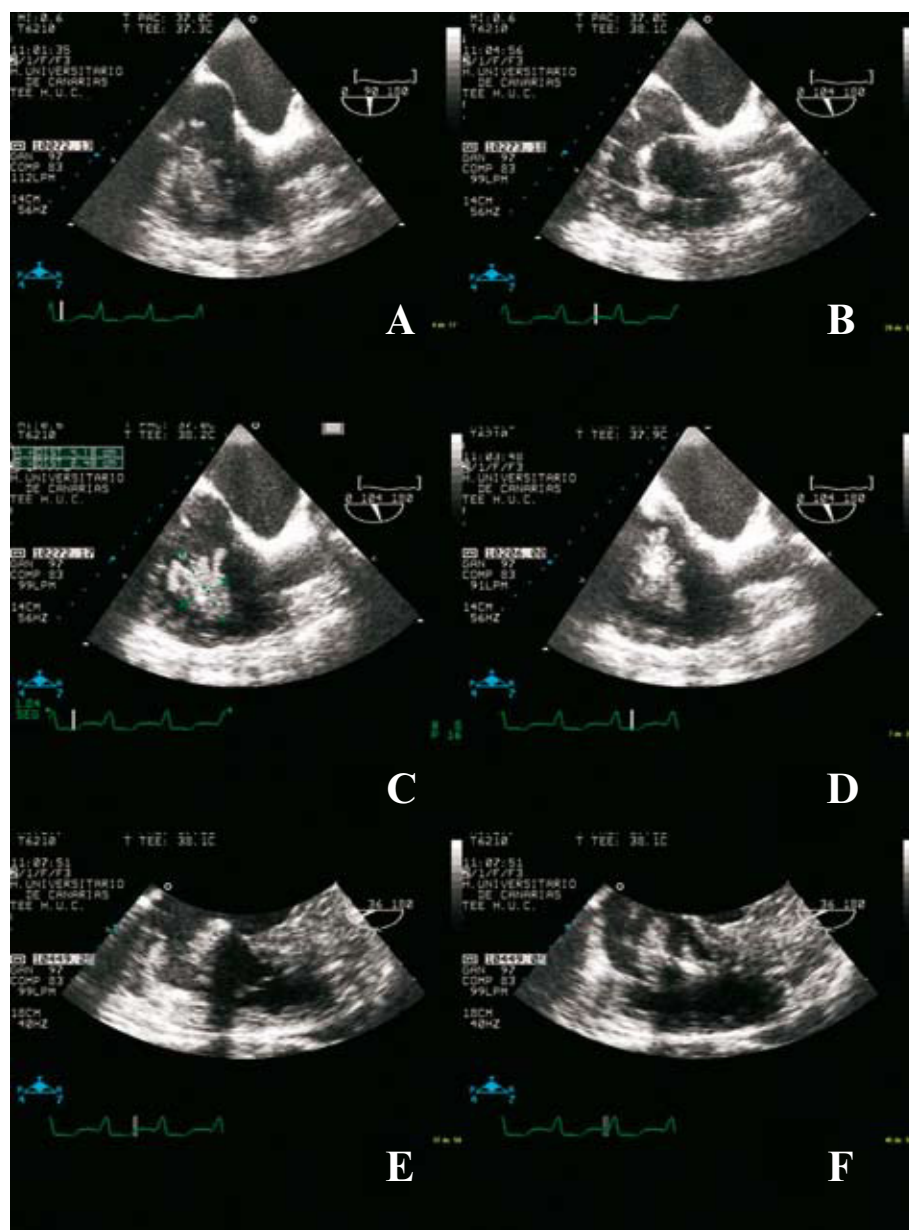


Figure 1. Transoesophageal ultrasound. A and B: verruca affixed to pacemaker cables with the superior vena cava free. C and D: measure of large size of verruca with gangrenous appearance and the lower vena cava with no verrucae. E and F: verruca protruding into the right ventricle in end-diastole compared with end-systole.

was made to perform extraction under direct vision with extracorporeal circulation.⁴ In surgery and when inserting the venous cannula into the inferior cava, we noticed some resistance, which was easily overcome. When beginning extracorporeal circulation, poor drainage was detected from that cannula, which forced us to interrupt that process and verify the cannulation. We discovered that the cannula in the vena cava inferior was completely occluded with verrucous tissue (Figure 2A) and

replaced the cannula. We checked that both the tricuspid valve and the right ventricle were free of vegetations. Upon attempting to extract the lead, we noticed that the end was stuck tightly to the right ventricle. However, the atrial lead could be removed with no resistance. We removed a large vegetation approximately 9 cm long that was stuck to the pacemaker lead (Figure 2B), with no further complications. In any case, antibiotic treatment would not have been effective without surgery,

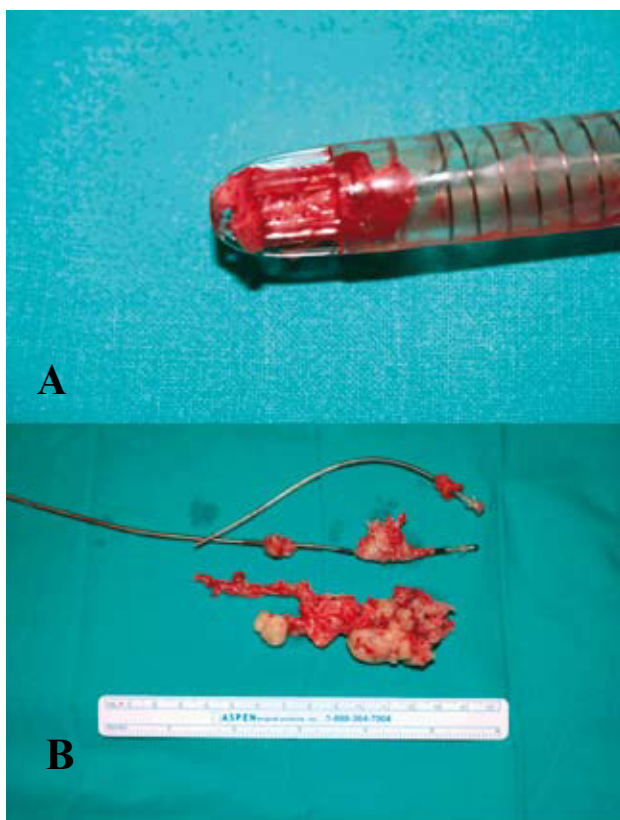


Figure 2. A: obstruction of the venous cannula with verrucous tissue. B: pacemaker cable with the verruca attached.

given the size of the vegetation. The verruca culture was positive for the same strain. In post-op, the patient suffered acute renal failure secondary to the antibiotics, which was treated properly, and with no further incidents he was discharged upon completing the cycle of antibiotics. Occlusion of an extracorporeal cannula is an extremely rare complication, and if it had not been detected in time, it could have created problems during the intervention. Verrucae shifting position and causing embolisation could have occurred before or during surgery, which has potential serious consequences for the life of the patient.

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