An Unusual Late Term Complication of Automated Implantable Cardioverter-Defibrillator Implantation

İmplante Edilebilir Kardiyoverter Defibrilatör İmplantasyonunun Uzun Dönem Sıra Dışı Komplikasyonu

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Each year, more and more patients undergo automated implantable cardioverter defibrillator (AICD) and pacemaker implantation. A consequence of the more widespread use of implantation is the increased rate of device infections that is directly proportional to the increase in the rate of implantations. Depending on its etiology, mortality rate of device infection is between 4.9% and 33%.

This was a 58-year-old man with a history of heart failure, AICD implantation, diabetes mellitus and coronary artery disease. In May 2011, VVIR (single chamber) ICD was implanted to left subpectoral region. He was admitted with chest pain, puffiness on the lower ridge of the device, and little visibility of the device over the skin. He had a blood pressure of 130/75 mmHg, a regular heart rate of 66 beats per minute, 15 respiratory movements per minute, and body temperature of 37°C. The patient was hospitalized with a preliminary diagnosis of device infection and antibiotic treatment was started. At presentation, his C-reactive protein level and erythrocyte sedimentation rate were 12 mg/L and 40 mm/hour, respectively. White blood cell count was 12000/mm^3. Although blood cultures as well as cultures from the samples obtained from surrounding skin showed no pathogens, growth of Staphylococcus aureus occurred in microbiological samples taken from the device and subcutaneous tissue. During the course of the treatment, more than the half of the body of the device extruded spontaneously over the skin (Figure 1, 2). After an appropriate course of antibiotherapy, the device was extracted surgically and the pouch was debrided. Antibiotic treatment was continued for an additional duration of 14 days, after which the patient was discharged without any complications.

Two months later his laboratory results including C-reactive protein, erythrocyte sedimentation rate, complete blood count with differential, and coagulation profile were normal. His echocardiography showed an ejection fraction of 33%, and left ventricular end diastolic and systolic diameters of 65 and 47 millimeters, respectively. He has been well for

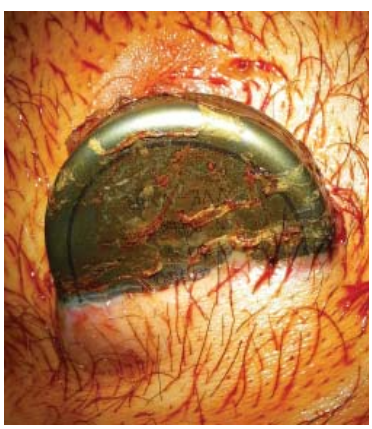

Figure 1. Anteroposterior view of ICD generator before shaving.

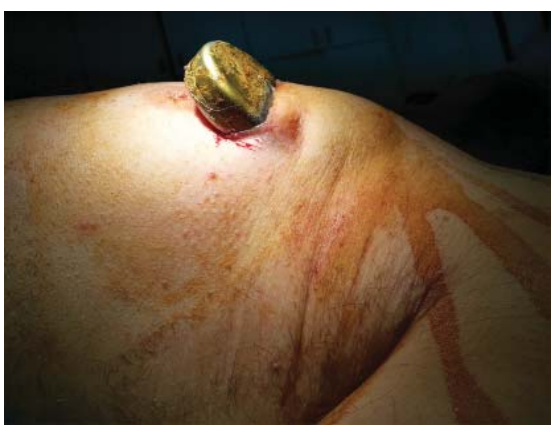

Figure 2. Lateral view of ICD generator after shaving.

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over two months without any arrhythmic event under beta-blocker therapy, administered in accordance with his previous history, leading to patient refusal for AICD re-implantation.

Herein, we describe an unusually severe form of AICD skin erosion, which has been reported to occur in only 0.9% of patients(1). There are two main causes of pacemaker extrusion. Firstly, a local infection can lead to skin erosion and secondly, pressure necrosis may develop on the overlying tissue and skin. In our case, extrusion was mainly caused by a local infection. In these cases involving a device infection, administration of appropriate antibiotics represents the first choice therapy. Failure to eradicate the infection with antibiotics is an indication for device removal. Similarly, in our case the device was extracted after administration of antibiotics. The reported rates of mortality associated with device infections in the general population of patients with pacemaker implantation and in those with endocarditis related pacemaker - lead are 4.93% and 33%, respectively (2-3). Our patient did not have any clinical signs and symptoms or echocardiographic findings of endocarditis, and he is still alive after surgery without any evidence of infection in the area of implantation.

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