

## CASE IMAGE

## Low anterior axillary implantation of an ICD in a patient with recurrent bilateral pectoral infection

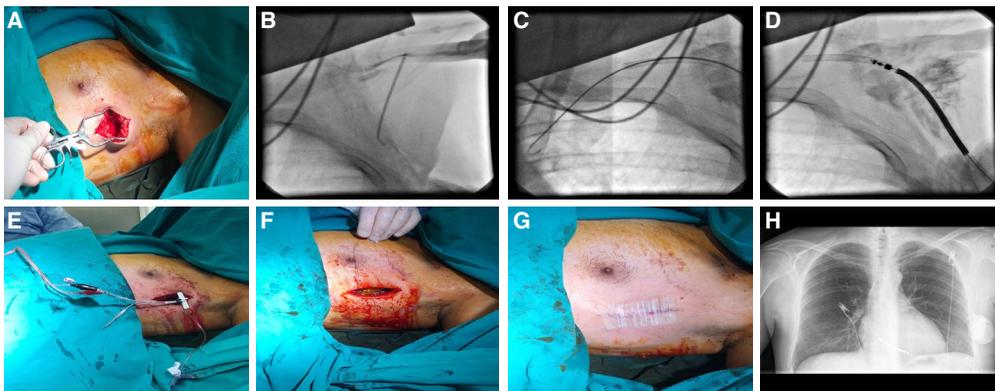
### *Tekrarlayan iki taraflı pektoral enfeksiyonlu bir hastaya aşağı ön aksiller ICD implantasyonu*

 Serkan Çay  
 Firat Özcan  
 Özcan Özeke  
 Dursun Aras  
 Serkan Topaloğlu

Department of Cardiology, Division of Arrhythmia and Electrophysiology, University of Health Sciences, Yüksek İhtisas Heart Education and Research Hospital, Ankara, Turkey

A 38-year-old male patient with ischemic cardiomyopathy underwent a secondary prevention implantable cardioverter-defibrillator (ICD) implantation in the left pectoral region. After a short period, all device parts were removed due to a pocket infection and fistula formation. Following appropriate antibiotic therapy and after obtaining negative blood cultures and the agreement of an infectious disease specialist, a new device was implanted in the right pectoral region. However, only a few weeks after the procedure, a pocket infection with purulent drainage was observed and removal of the system was performed. After an extensive period of antibiotic therapy, negative blood cultures, and further consultation with an infectious disease specialist, a new device was once again implanted in the left pectoral area. As expected, recurrent infection and opening of the pocket occurred. Therefore, the patient was referred to our arrhythmia center for surgical epicardial implantation. After discussion with the patient and obtaining written informed consent, we decided to perform the fourth transvenous implantation. In the

supine position, with a left arm abduction angle of 90°, the area in the anterior axillary line near the left nipple was locally anesthetized both anteriorly and laterally, away from the infected pectoral region. An incision measuring approximately 5 cm in length and a laterally placed, submuscular pace pocket were created (Fig. A). From the cranial edge of the pocket, a 10 cm, 18-gauge needle was advanced toward the axillary vein parallel to the anterior axillary line under continuous contrast injection from the brachial vein with anteroposterior fluoroscopic imaging. After tenting and puncture of the axillary vein (Fig. B), inadvertent retrieval of the proximally banded needle caused contrast leakage and staining of soft tissues. Therefore, re-puncture was performed with a 15 cm, 18-gauge needle and standard guidewire and a peel-away sheath were introduced (Fig. C). A single-coil active-fixation defibrillator lead was advanced and implanted at the base of the right ventricle (Figs. D and E) with good pacing and sensing parameters. The lead was connected to an active single-chamber ICD can, the pulse generator was secured to the fascia, and the pocket was closed (Figs. F and G). In the anteroposterior fluoroscopic view and posteroanterior chest radiography, both the right and left ventricles were between the active can and the right ventricular shock coil (Fig. H). After 6 months of follow-up, no infection had recurred and the device parameters were stable with slow ventricular tachycardia events ending with anti-tachycardia pacing.



**Figures–** (A) The pacemaker pocket located at the low anterior axillary line. (B) Extrathoracic axillary vein puncture using a long needle. (C) The guidewire and the sheath in the venous system. (D) The defibrillator lead advancing through the sheath. (E) The cranially located sheath, lead, and measuring cables connected to the analyzer. (F) The pulse generator was laterally implanted in the pocket (G) and the pocket was closed. (H) The positions of the generator and the lead on the posteroanterior chest X-ray.