

Appropriate and effective interventions of subcutaneous implantable cardioverter-defibrillator (S-ICD): single-academic-centre experience

Adekwatna i skuteczna interwencja podskórnego kardiowertera-defibrylatora — doświadczenie ośrodka akademickiego

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Up to now, at our Department of Cardiology fourteen subcutaneous implantable cardioverter-defibrillator (S-ICD) have been implanted. Here we present two registered adequate and effective interventions of S-ICD. In both cases, S-ICDs were implanted in individuals having difficulties with transvenous ICD implantations. The first patient was a 36-year-old man with heart failure and permanent atrial fibrillation, with a history of ventricular fibrillation cardiac arrest. He underwent an unsuccessful conventional ICD implantation because of tortuousness of the subclavian vein. The patient also had a history of surgical correction of atrial septal defect type II and reposition of the superior vena cava from the left to right atrium. The second patient was a 55-year-old man with ischaemic heart failure, a history of surgical aortic valve implantation, ventricular fibrillation cardiac arrest, arterial hypertension, and permanent atrial fibrillation. This patient had an implanted transvenous ICD that was subsequently explanted due to infection. Both devices after implantation were checked and programmed. During the follow-up (approximately seven months after implantation) the first and the second patient experienced an episode of ventricular tachycardia (Fig. 1A, B, respectively). In both cases life-threatening arrhythmias were adequately recognised and effectively defibrillated by S-ICD. Figure 1 presents records of a wide QRS complex tachycardia (heart rate 220–240 bpm), which were correctly recognised by the device ("T"). In the first patient a capacitor was charged in the 44th second and supercharged in the 53rd second, and then a shock ("I") was delivered in the 54th second (Fig. 1A). In the second patient a capacitor was charged in the 44th second and supercharged in the 55th second ("C"), and then a shock (" ") was delivered in the 56th second (Fig. 1B). In conclusion, S-ICD seems to be a reasonable and reliable alternative for patients who have contraindications for conventional ICD implantation and do not require pacing therapy. For proper assessment of recorded episodes in S-ICD, skills in subcutaneous electrocardiogram interpretation are needed.



Figure 1. A, B. Registered episodes of ventricular arrhythmia adequately recognised and effectively defibrillated by a subcutaneous implantable cardioverter-defibrillator in the first and second patient, respectively

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