

Subcutaneous implantable cardioverter defibrillator as primary prevention of sudden cardiac death: a case report

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University Hospital Centre "Sestre milosrdnice", Zagreb, Croatia KEYWORDS: sudden cardiac death, subcutaneous implantable cardioverter defibrillator, health care.

CITATION: Cardiol Croat. 2024;19(1-2):26. | https://doi.org/10.15836/ccar2024.26

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Sudden cardiac death is in most cases caused by ventricular tachycardia and ventricular fibrillation. The standard therapy for the prevention of sudden cardiac death is transvenous implantable cardioverter defibrillators, i.e. ICD devices that detect ventricular arrhythmias and deliver shocks. In the last few years, the option of implantation of subcutaneous implantable cardioverter defibrillator (S-ICD) is often used. S – ICD is an implantable subcutaneous medical device for detecting and stopping ventricular tachycardia and ventricular fibrillation in patients at risk of sudden cardiac arrest. It is mainly implanted on the left side of the chest wall under the armpit. It is also the first and only device that provides protection against sudden cardiac arrest by leaving the heart and vasculature intact. Unlike the transvenous ICD, the S-ICD has much fewer possible complications during placement and those related to the lead. However, it does not have the ability to stimulate, therefore it cannot provide stimulation therapy against tachycardia, bradycardia and resynchronization therapy. 1-5

We will briefly explain what an S-ICD is, what are the main differences between an S-ICD and an ordinary ICD, and indicate the indications for its placement. We will talk about perioperative preparation of the patient for S-ICD placement, intraoperative health care and postoperative patient care and complications after placement. We will also present a case of a patient at risk of sudden cardiac death who was a good candidate for S-ICD implantation.

RECEIVED: September 30, 2023 ACCEPTED: October 7, 2023



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- Hua W, Hu Y, Zhang N, Liu X, Cai M. Progress in Clinical Application of Subcutaneous Implantable Cardioverter Defibrillator in Patients Who Suffer Sudden Cardiac Death. In: Zhu, H. (eds) Sudden Death. Springer, Singapore. https://doi.org/10.1007/978-981-15-7002-5_18
- Min M, editor. Cardiac Pacing and Monitoring New Methods, Modern Devices [Internet]. IntechOpen; 2019. Available from: http://dx.doi.org/10.5772/intechopen.73811
- Al-Ghamdi B. Subcutaneous Implantable Cardioverter Defibrillators: An Overview of Implantation Techniques and Clinical Outcomes. Curr Cardiol Rev. 2019;15(1):38-48. https://doi.org/10.2174/1573403X14666180716164740
- Lewis GF, Gold MR. Safety and Efficacy of the Subcutaneous Implantable Defibrillator. J Am Coll Cardiol. 2016 Feb 2;67(4):445-454. https://doi.org/10.1016/j.jacc.2015.11.026
- Kaya E, Rassaf T, Wakili R. Subcutaneous ICD: Current standards and future perspective. Int J Cardiol Heart Vasc. 2019 Aug 8;24:100409. https://doi.org/10.1016/j.ijcha.2019.100409