Implantable cardioverter defibrillator therapy for secondary prevention in spontaneous coronary artery dissection: to place or not to place? This is the matter

To the Editor,

We read with interest the article by Çimci et al. (1) concerning a case of spontaneous coronary artery dissection (SCAD) in a young woman presenting with cardiac arrest due to ventricular fibrillation. Although SCAD is a known leading nonatherosclerotic cause of sudden cardiac death (SCD) related to myocardial ischemia presenting with life-threatening ventricular arrythmias in 3% to 11% of reported series, to date, data regarding the use of implantable cardioverter defibrillator (ICD) therapy in this population are limited (2). Current guidelines do not support early ICD placement after an aborted episode of sudden cardiac arrest due to ventricular arrythmia related to a potentially reversible cause (3). Nevertheless, the reversibility of SCD risk in SCAD patients is still a matter of debate. In the SCAD registry by Sharma et al. (4), several variables were significantly correlated with a higher risk of SCD, including tobacco use, ST-segment elevation myocardial infarction at presentation, pregnancy status, and SCAD recurrence. The latter has been reported with an estimated rate of up to 30% at 4 to 10 years of follow-up and is favored even by angiographic features (like coronary tortuosity and fibromuscular dysplasia), as well as by modifiable risk factors (including arterial hypertension, precipitating stressors, and low adherence to beta-blocker therapy) (2, 4). However, although such predictors have been shown to be linked with a propensity for an ongoing risk of SCD, current data from the literature do not support their utility in decision-making regarding ICD implantation, as opposed to other reported variables, like recurrent ventricular arrhythmias, uncomplete coronary revascularization, or persistent left ventricular systolic dysfunction at hospital discharge and during follow-up (3). Previously published series reported the frequent occurrence of angiographic spontaneous healing of SCAD lesions, as well as a quick recovery of left ventricular ejection fraction. Furthermore, a decreased propensity for SCD in patients with SCAD may be obtained by acting on modifiable risk factors, like smoking cessation, avoidance of future pregnancies, and better titration of beta-blocker therapy (2, 4). Finally, preliminary outcomes from SCAD series did not show a favorable risk–benefit ratio for patients who underwent ICD therapy without a guideline-based approach and whose clinical value was limited by lack of therapies delivered from the devices (2). In-hospital complication risks after ICD procedures have been reported in 11% to 16%, with an increased rate of re-interventions compared with implantation of right ventricular pacing leads. This is most likely related to the more complex structure, wider gage, and increased stiffness of high-voltage leads. Furthermore, gender differences, anthropometric parameters, and physician factors have also been reported to have a significant effect on the rate of complications after ICD placement (4, 5). In conclusion, the role of ICD therapy in secondary prevention in SCAD patients remains a challenging matter of debate, due to its unclear risk–benefit ratio and lack of SCD risk predictors that can be used in decision-making about ICD implantation. Further, larger trials are needed to guide the decision strategy of ICD placement in this population.

Riccardo Scagliola, Claudio Brunelli, Manrico Balbi
Department of Internal Medicine, Cardiovascular Disease Unit, IRCCS Ospedale Policlinico San Martino, University of Genova; Genova-*Italy*

References

1. Çimci M, Sologashvili T, Yilmaz N, Frangos C, Riolfi M. Young woman with cardiac arrest due to spontaneous coronary artery dissection. Anatol J Cardiol 2020; 23: 53-5.
2. Hayes SN, Kim ESH, Saw J, Adlam D, Arslanian-Engoren C, Economy KE, et al.; American Heart Association Council on Peripheral Vascular Disease; Council on Clinical Cardiology; Council on Cardiovascular and Stroke Nursing; Council on Genomic and Precision Medicine; and Stroke Council. Spontaneous Coronary Artery Dissection: Current State of the Science: A Scientific Statement From the American Heart Association. Circulation 2018; 137: e523-57.
3. Russo AM, Poole JE. Secondary Prevention: A Blast From the Past. JACC Clin Electrophysiol 2017; 3: 29-32.
4. Sharma S, Rozen G, Duran J, Mela T, Wood MJ. Sudden Cardiac Death in Patients With Spontaneous Coronary Artery Dissection. J Am Coll Cardiol 2017; 70: 114-5.
5. Kirkfeldt RE, Johansen JB, Nohr EA, Jørgensen OD, Nielsen JC. Complications after cardiac implantable electronic device implantations: an analysis of a complete, nationwide cohort in Denmark. Eur Heart J. 2014; 35: 1186-94.

Address for Correspondence: Riccardo Scagliola, MD,
Department of Internal Medicine,
Cardiovascular Disease Unit,
IRCCS Ospedale Policlinico San Martino,
University of Genova;
Largo R. Benzi N.10 16132,
Genova-*Italy*
Phone: 3407326833
E-mail: risca88@live.it

DOI:10.14744/AnatolJCardiol.2020.57870