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Complex proximal right coronary artery chronic total occlusion, in patient affected by dilated ischemic cardiomyopathy, with low EF and sustained ventricular arrhythmias

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Background: Recent studies, systematic reviews and meta-Analysis suggested that chronic coronary artery total occlusion (CTO), especially infarct related, increases risk of ventricular arrhythmia (VA), appropriate implantable cardioverter defibrillator (ICD) therapy and all-cause mortality in ischemic cardiomyopathy (ICM) patients. However it's not clear whether these threatening arrhythmic events could be prevented by revascularization (CTO-PCI) and the impact of CTO-PCI on the outcome of patients with CTO.

Conclusion & Significance: The clinical case presented has a significant interest and can be reason for discussion for the following reasons:

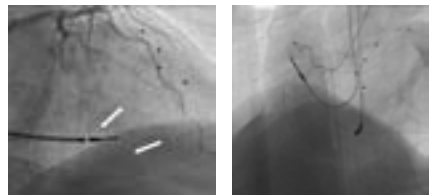
Specific clinical setting as rational to CTO-PCI:

No typical angina, no chest pain, no dyspnea Chronic total occlusion dating back to 1991 (mono-vessel disease) Cardiomyopathy with Low EF 35% and recurrent threatening ventricular arrhythmias Failure of antiarrhythmic drugs Electric therapy ineffective (ICD; CRT-D)

Challenging Long CTO-PCI, with some technical procedure features, good angiographic result.

The clinical utility and effectiveness of RCA CTO recanalization clearly demonstrated by clinical and unquestionable instrumental data (complete absence of

VA after the PCI). According to a recent meta-analysis involving 1095 patients, the presence of CTO increased the risk of VA and all-cause mortality in ICD-ICM patients up to 60 and 71 percent, respectively. Few data has been published to demonstrate the role of CTO-PCI in patients with recurrent VA, appropriate ICD shock and ischemic cardiomyopathy. In this case the analysis of the clinical history and above all of the ICD remote monitoring, allows a brilliant demonstration of the crucial role of CTO-PCI in patients with recurrent VA and evidence of viability or reversible ischemia on the CTO territory. Further studies are needed to confirm these outcomes and to better classify patients who would benefit from a CTO-PCI in this specific clinical setting.



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Recent Publications

1. Wasawat V, Saranapoom K, Pattara R, et al. Impact of Chronic Total Occlusion on Ventricular Arrhythmia and mortality in ischemic cardiomyopathy patient with implantable cardiac defibrillator: A systematic review and meta-analysis. *J Am Coll Cardiol* March 10, 2018, 71 (11 Supplement)
2. Chi WK, Gong M, Bazoukis G, et al. Impact of coronary artery chronic total occlusion on arrhythmic and mortality outcomes: a systematic review and meta-analysis. *J Am Coll Cardiol EP* 2018; 4:1214-23
3. Della Bella P, Frontera A. Chronic Total Occlusion and Ventricular Tachicardia. *J Am Coll Cardiol EP* 2018; 4:1224-26.
4. Nombela-Franco L, Innaccone M, Anguera I, et al. Impact of Chronic Total Coronary Occlusion on Recurrence of Ventricular Arrhythmias in Ischemic Secondary Prevention Implantable Cardioverter-Defibrillator Recipients (VACTO Secondary Study): insight from coronary

angiogram and electrogram analysis. *J Am Coll Cardiol Intv* 2017;10:879-88.

5. Raja V, Wiegand P, Obel O, et al. Impact of chronic total occlusions and coronary revascularization on all-cause mortality and the incidence of ventricular arrhythmias in patients with ischemic cardiomyopathy, *Am J Cardiol* 2015; 116: 1358-62.

Biography

Delio Tedeschi, Interventional Cardiologist, Director of Cath. Lab. Interventional Cardiology at Istituto Clinico S. Anna Brescia, Gruppo Ospedaliero San Donato - Italy, has a long experience in the field of Interventional Cardiology and Ischemic Cardiomyopathy. During his career he has worked constantly in the fields of Interventional Cardiology, Cardiac Intensive Therapy, carrying out activities of clinical cardiology and echocardiography in parallel. Currently he's director of Interventional Cardiology at Istituto Clinico S. Anna Brescia Italy, where regularly are performed complex PCI (CTO, complex lesions), peripheral and carotid PTA, cardiac structural interventions (DIA, PFO, TAVI) and scientific research activities.

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