

### 3. CARDIAC RESYNCHRONIZATION THERAPY – A MODERN HEART FAILURE SOLUTION. CHALLENGING CLINICAL CASE

**Author:** Gobjila Ion

**Co-author:** Syed Abdulrazak, Darciuc Radu, Samohvalov Elena

**Scientific adviser:** Alexandra Grejdieru, PhD, MD, Associate Professor, Discipline of Cardiology, Department of Internal Medicine, *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova.

**Introduction.** Heart failure is known as the impossibility of the heart to execute its contractile function, in the way to supply the vital systems with oxygenated blood. Nowadays, there are 64.3 million people living with heart failure (ESC 2020). The patients with left bundle branch block have class I level A indication for Cardiac Resynchronization Therapy (CRT). CRT implantation is a challenging procedure, most difficult part being left ventricle (LV) lead implantation.

**Case presentation.** We present a case of a 55 years-old male patient with a dilative cardiomyopathy with ejection fraction 30%, LBBB, class III NYHA heart failure, C stage AHA/ACC. The patient has the right upper limb amputated and he asked to implant the CRT-D device on that side. After informed consent, the procedure was fitted to the patient but created some difficulties. The patient had an unsuccessful LV lead implantation during the first procedure due to the dissection and perforation of coronary sinus. The second and third unsuccessful attempts were performed after one month and two months. The Heart Team decision was to implant epicardial LV lead but just before cardiac surgery to perform a fourth attempt to implant the LV lead via transvenous approach.

**Discussion.** The 4th attempt was also difficult. After several attempts to cannulate the CS using both contrast agent and deflectable ablation catheter, we performed coronary angiography in venous phase to locate the CS ostium. Using the images as reference, we finally cannulated the CS ostium with a deflectable ablation catheter and implanted the LV lead without any complications in the postero-lateral branch. The patient was discharged the next day with satisfying state of health. Along with the multiple sources recommendation degrees, an individual approach to the patient and a well-trained multidisciplinary team are the key to a less-traumatic therapy and a high rate of intervention's success. Brignole et al. (2013) affirm that the CRT improves the ventricular ejection fraction, left ventricular contractility, on the other hand reduces the ventricular remodelling. Most of the studies have shown that the implantation of CRT-D or CRT-P essentially reduces the mortality and the hospitalisation rate in patients with NYHA III-IV class.

**Conclusion.** The CRT remains one of the golden choices in HF treatment, based on the studied literature. The clinical case provided the tough way to achieve the goal and treat a patient in a special physical state.