An Old Lady with a Twitching Abdomen!

Abstract

An overwhelming amount of evidence from prospective randomized controlled trials supports the clinical efficacy and safety of cardiac resynchronization therapy (CRT) in patients with moderate or severe heart failure and ventricular dyssynchrony. CRT makes heart failure patients feel better, improves cardiac structure and function, and reduces all-cause as well as heart failure morbidity and mortality. Thus, there may be a clinical mandate for use of CRT in many patients with chronic heart failure. However, most complications were minor and no mortality was reported. Failure of lead placement was the most frequent complication, and cardiac perforation and coronary sinus dissection were the most serious adverse events.

Case Report

80 years old lady presented to ER with history of episodes of abdominal pain and twitching with feeling of extra beats; these episodes started two days back immediately after hand manipulation of her CRTD device by her son. She denied any chest pain or syncope. She is a known case of DM, HTN, DCM with EF 35%, previous LBBB pattern (S/P CRTD two months ago). She was, otherwise, hemodynamically stable T: 36.5

BP: 130/75 P: 80 B/M (with pvcs).

Chest: Bilateral equal air entry with bibasal fine end inspiratory crackles

CVS: Normal S1, S2, no add sound or murmur.

Abdomen: Apparent regular twitching of the right hypochondria, lax abdomen and no masses.

We were asked to see the patient, we reviewed her previous CXR post CRTD implantation and was (Figure 1) reviewed her procedure note which advocated the difficulty in securing LV lead deeply through lateral vein of the heart due to significant branch stenosis. The lead was then implanted in the posterolateral CS branch. Then, we requested a new CXR which showed the device slightly lower than implant position and displacement of LV lead higher in SVC (Figure 2).

We admitted the patient, urgent interrogation of the device and changed in to (RV paced only) mode, with cessation of the abdominal twitches and the patient was completely comfortable and asymptomatic. The right diaphragmatic stimulation by the displaced LV lead (in RA-SVC junction) was responsible for the patient's complain and abdominal twitching.

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Stimulation of phrenic nerve is known as one of the complications post CRTD implantation. This can happen in multiple scenarios post implantation. It is very useful to check which hemi diaphragm is twitching. If the right phrenic nerve is being stimulated then most likely it is lead dislodgement close to the RA-SVC junction where the right phrenic nerve runs its course.

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If the LV lead dislodgment is minimal sometimes reprogramming the device and selection of different pacing bipole (specially in quadripolar leads) might solve the problem. Reposition of the displaced lead is the definitive management in most cases.

Discussion

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With advances in techniques for retrograde coronary sinus cannulation, delivery systems, and dedicated LV lead technology, a fully transvenous approach has become the usual technique for CRT, although implanting the LV lead in a major cardiac vein may still be demanding and difficult in some patients with the need for re-intervention due to LV lead dislodgement, increase in LV pacing threshold, phrenic nerve stimulation, and infection.
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Figure 1

Figure 2

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Figure 3

Figure 4

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References


