VENOVOUS LOOP WITH USE OF INDIGENOUS SNARE FOR PLACEMENT OF THE LEFT VENTRICULAR LEAD DURING CARDIAC RESYNCHRONISATION THERAPY

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Introduction: Placement of the left ventricular (LV) lead in the postero-lateral vein during cardiac resynchronization therapy (CRT) implantation can be challenging at times. The rate of failure of LV lead placement is 2.4% to 5%. These difficult cases are addressed with use of long sheaths, extra stiff wire support, balloon anchors, coronary sinus venoplasty, use of goose neck snare, jailed catheter technique & trans septal lead placement. We hereby present a case with very tortuous lateral vein anatomy in which we used “an indigenous snare” which was made from regular hardware used for coronary angioplasty procedures. We formed a venovenous loop of the guide wire and then could achieve a desired and stable position of LV lead with good right ventricular (RV) and LV lead separation.

Methods: 52-year-old hypertensive and diabetic male with old coronary artery disease, with history of coronary artery bypass (CABG) surgery done in past, presented with NYHA class III symptoms. He was optimal medical management. He was planned for cardiac resynchronization therapy (CRT). During left ventricular (LV) lead implantation, there was difficulty in negotiation into desired lateral vein due to local stenosis and unfavorable angle. When balloon dilatation failed to position the lead in place, it was planned to form a venovenous loop for implantation of LV lead. We passed the coronary guidewire from Coronary Sinus (CS) → Lateral vein → Collateral Vein → Middle Cardiac Vein → CS → Right Atrium (RA) → Superior Vena Cava (SVC). Then, we prepared an “indigenous snare” from a coronary balloon and a workhorse 0.014” coronary guidewire. The distal end of 1st coronary wire was caught with the help of the indigenous snare and exteriorized to form a venovenous loop. The LV lead was then passed into the lateral vein over this venovenous loop. It could be negotiated at the desired distal position and it remained stable after removal of the guidewire.

Result: There was a very good separation of RV and LV leads as confirmed in orthogonal views on fluoroscopy. The patient has improved post procedure in terms of symptoms, shortening of QRS on ECG and improvement in ejection fraction on follow up of more than 10 months.

Conclusion: In cases with difficult anatomy of CS and lateral vein, it is possible to get a good LV lead position even without use of any special hardware like dedicated snares. This will help get improved success rate with CRT procedures and avoid need for thoracotomy with epicardial lead placement.