SIGNIFICANCE OF BASIC MODALITIES IN DIAGNOSIS AND MANAGEMENT OF INADVERTENT PLACEMENT OF TEMPORARY PACEMAKER LEADS

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Introduction: Temporary cardiac pacing, can be a lifesaving process, involves electrical cardiac stimulation to treat bradyarrhythmia or tachyarrhythmia until it resolves or until long term therapy can be initiated. (1) Inadvertent malposition of pacing leads is a recognized complication of the procedure, which can be fatal particularly if lead placement is in the left ventricular cavity because of the risk of thromboembolic events. Malposition leads can be either due to unrecognized congenital heart defects including atrial or ventricular septal defects, Patent foramen ovale or due to iatrogenic perforation of interventricular septum but sometimes it may be due to faulty insertion via trans-arterial instead of transvenous access.

Methods: 47 year old female had history of syncopal episode one day ago while she was working in her house as well as previous history of pre syncopal episodes which lasted for 2-3 minutes. She had no history of diabetes, hypertension, and stroke/transient ischemic attacks. Her attendants took her to nearby hospital where her electrocardiogram showed complete heart block. On examination, blood pressure was 100/70 mmHg, pulse rate was 46 bpm, cardiovascular and respiratory examination was unremarkable. On duty doctor took the consent for temporary pacemaker placement and placed the temporary pacemaker lead via right femoral approach without fluoroscopic guidance. After hemodynamic stabilization she was referred to our electrophysiology center for further management. She landed in our electrophysiology department, when evaluated, she was hemodynamically stable and her electrocardiogram showed pacing spikes with appropriate capture but with R wave in lead V1. This led to the suspicion of pacing lead malposition resulting in left ventricular pacing via interventricular septum perforation. There were no post procedure chest x-ray or electrocardiogram records available. So patient was directly taken to the electrophysiology lab, lied down under the fluoroscopy to visualize the lead and the lead was found to be present in the left ventricle but it did not perforated the interventricular septum, in fact the lead entered the left ventricle through aorta i.e. right femoral artery was punctured by the first doctor which led the way to the left ventricular cavity. The condition was explained to the patient and again consent was taken to pass another temporary pacemaker via the right sub-clavian approach followed by removal of the lead present in the left ventricle. This time the electrophysiologist placed the new temporary pacemaker lead to the Right ventricle apex successfully and removed the lead present in the left ventricle.

Result: Patient had no reversible cause for the complete heart block so Dual chamber Permanent Pacemaker was implanted the next day via left subclavian access. She was discharged next day after the procedure and is active in her daily activities now.

Conclusion: We have reported these cases to emphasize the importance of post procedural investigations which are easily available even at primary care centers including 12-lead electrocardiography and chest X-ray. These modalities are very helpful in early detection and
management of inadvertent lead placement and may help in avoiding life threatening complications.