LETTER TO THE EDITOR

Incidental migration of a right ventricular lead into the peritoneal cavity

An 80-year old female underwent dual chamber pacemaker implantation due to complete atrioventricular block, using active fixation leads in both right atrium and ventricle. The day after the procedure pacemaker interrogation was within normal limits and the patient was discharged. Three days after the implantation the patient visited the emergency department complaining for left basal chest pain. Both chest x-ray and pacemaker interrogation revealed no indications of device dysfunction. Thus, the patient was discharged home. One week later she presented again to the emergency room of our hospital because of left abdominal pain. Inspection of the abdomen revealed an extended ecchymosis in the left lateral abdominal wall and left hypogastric region (Figure 1, panel A). An electrocardiogram depicted complete atrioventricular block. Upon interrogation, complete loss of sense and capture was found at the ventricular lead. Chest x-ray showed that the ventricular lead had migrated below the hemidiaphragm and a small pleural effusion had developed (Figure 1, panel B). Echocardiographic examination revealed no pericardial effusion. Subsequent computed tomography imaging unveiled the electrode had perforated the right ventricle, pericardium, diaphragm and had reached and captured the abdominal wall (Figure 1 Panel C, D).

Based on these findings, right ventricular lead reposition was successfully performed in the operating theatre with cardio surgical backup support. Notably, the procedure was performed under general anesthesia and under continuous surveillance of the pericardial space by transesophageal echocardiography because of the elevated risk for hemothoraxic pericardial effusion and tamponade. Postoperative course was uneventful.

This is a rare case of subacute pacemaker lead ventricular perforation presenting with abdominal pain and prominent abdominal wall ecchymosis. As the patient was pacemaker dependent with an underlying rhythm of complete atrioventricular block, rapid right ventricular lead proper reposition was of high priority. In our case the same active fixation lead was used uneventfully.

Lead perforation in either the right atrium or ventricle is a rather uncommon event with published rates varying between 0.1–0.8% for pacemakers and 0.6–5.2% for implantable cardioverter-defibrillators. It is considered acute when presenting within first 24 hours, subacute within the first month and late after one month. Active fixation leads, temporary pacemaker insertion and steroid use have been described as risk factors. Presenting symptoms can be equivocal and high level of suspicion is required. Characteristic signs and symptoms include pain and loss of sense or capture. Percutaneous lead repositioning with surgical backup support is considered a safe and effective approach for the management of this complication.
Conflict of interest

There is no reported conflict of interest.

References


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