EP CASE REPORT

Subacute asymptomatic right ventricular lead perforation complicated with ipsilateral pneumothorax after lead reposition

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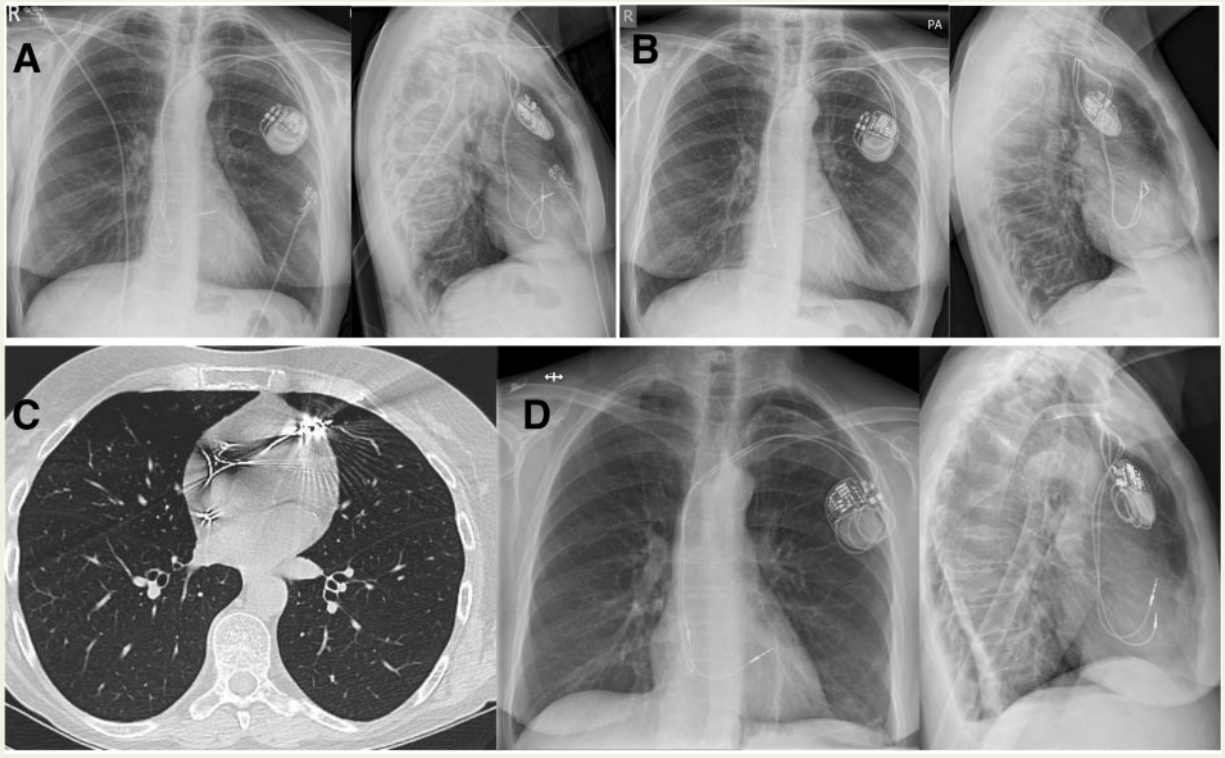

Figure 1 Images before and after the pacemaker implant.

Introduction

Major advancements have been made in the design of pacing leads to improve electrical performance and patient safety. However, despite significant progress, pacing leads have remained the most vulnerable components of transvenous pacing systems.[1] The incidence of complications resulting from the insertion of such devices ranges from 3% to 7% and lead perforation is a relatively rare complication seen at 0.1–0.8% of the cases.[2,3]

Case report

A 77-year-old woman with the diagnosis of right ventricular (RV) lead perforation and previous medical history of ischaemic heart disease, diabetes, hypothyroidism, and diverticulosis. A pacemaker (Medtronic Ensura-CapSureFix Novus 4076 leads) was implanted for sick sinus disease without complications in a community hospital. The X-ray post-procedure can be seen in *Figure 1A*.

In the first routine device check one month after the implant, the patient was asymptomatic. However, there was no capture on the RV lead and a new X-ray was performed (*Figure 1B*). The computed tomography scan showed that the RV lead perforated the myocardial (*Figure 1C*). However, no pericardial effusion was noticed on the echocardiogram.

In the electrophysiology lab, the RV lead was easily repositioned to a midseptal position by simple traction under fluoroscopic guidance. No new access was attempted, and no issues were found repositioning the lead. The procedure was done under local anaesthesia and sedation. For this purpose, only a cannula in the left arm was used. The echocardiogram post-procedure did not show signs of pericardial effusion. She was asymptomatic overnight and her vital signs were stable.

The X-ray from the following morning showed a 17 mm pneumothorax in the left lung (*Figure 1D*). We believe that the main reason for this to happen was the damage that the perforated lead has done to the pleura. Hence, when the lead was retracted, a pneumothorax was created. We believe that it is very unlikely that this complication was caused by the local anaesthesia since the needle was used always parallel to the skin, superficially and no air was noticed in the syringe. Although she had this complication, she was asymptomatic and with normal vital signs. She was discharged home after 2 days and continued asymptomatic in the following months. No further treatment was needed.

Conclusion

After a pacemaker implant, complications should be sought even after patients have been discharged. In this case, we have an example of an asymptomatic subacute cardiac perforation that highlights the importance of an early device check after the implant. Furthermore, we could see that a simple retraction of a perforated RV lead can lead to a pneumothorax.

Conflict of interest: none declared.

References

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