A successful percutaneous retrieval of a fractured pacemaker lead from a segmental pulmonary artery

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A rarely reported complication of pacemaker lead extraction is embolization of the pulmonary vasculature by a fragmented lead tip. The tip fractured and migrated to the right pulmonary artery during the extraction, and it was successfully retrieved percutaneously. Percutaneous retrieval is an important treatment option of an embolized fragmented lead tip as it could sometimes lead to disastrous complications.

Case presentation
A 51-year-old male was operated for secundum atrial septal defect 1.5 years ago. He developed complete atrioventricular block during early post-operative period, and a VDDR (lead type Solox 58/13-Biotronik, lead diameter 6.3 F) pacemaker was implanted. Recently, a lead insulation defect was detected and replacement of the lead was planned. While the lead was being extracted using a COOK locking stylet system under fluoroscopy, the extraction system was probably not advanced to the very tip of the lead, and it broke away during extraction at the level of superior vena cavae. The tip migrated back to the right heart and embolized the lower lobe of the left lung (Figure 1A).

On selective pulmonary angiography, the lead fragment was found in the pulmonary artery supplying the posterior segment of the right lower lobe (see Figure 1B and Supplementary video). Attempts to reach the concerned segmental artery were made using the right Judkins and left internal mammary artery catheters but in vain. Eventually, the lead fragment was successfully captured by a snare using a multipurpose catheter (see Figure 1C).

Comment
Although a number of devices and methods have been developed for the extraction of pacemaker leads in the last two decades, various complications—some of which are fatal—have been reported secondary to the procedure. A rarely reported complication is the pulmonary embolization of the fractured lead. When left unretrieved, some cases have been reported to be uneventful but some others developed bronchial perforation or thrombosis at the related artery.1–3 Successful percutaneous retrieval of lead fragments could save the patient from both surgical operation and short- and long-term complications.4

Supplementary material
Supplementary material is available at Europace online.

Conflict of interest: none declared.

References