

Surgical removal of an intracardiac indwelling outer cannula

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Key words

Indwelling cannula; Percutaneous removal; Surgical removal; Pacemaker implantation.



Figure 1: Computer tomography image of a misplaced indwelling outer cannula in the right atrium. The outer cannula of the 50 mm 16-G intravascular catheter had accidentally indwelled in an inverted manner in the right atrium while it was advanced from the left subclavian vein using a guidewire.

Description

We discuss the challenging case of a 77-year-old woman with long QT syndrome, in whom a permanent pacemaker implantation was initiated. The procedure was started by performing a skin incision on the left upper chest, followed by vascular cannulation into the left subclavian vein. When the pacemaker lead was indwelled, the patient experienced severe chest pain. Echocardiography revealed pericardial effusion; hence, we had to abort the pacemaker implantation and perform drainage.

Thereafter, chest CT confirmed a high-absorptive obstacle in the right atrium (Figure 1), which was identified as the outer cannula of a 16G-intravascular catheter of the sheath-less guidance system that was

accidentally misplaced during the procedure. Subsequently, percutaneous removal of a foreign body was attempted using a looped snare catheter, which failed since the thin funnel-shaped outer cannula was less visible with X-ray fluoroscopy. Even grasping the funnel-shaped catheter with assistance of transesophageal echocardiogram was unsuccessful. Hence, surgical removal of the misplaced outer cannula was performed under cardiopulmonary bypass with a beating heart condition, which was successful. Finally, a pacemaker was implanted in the patient on day 28 of hospitalization and discharged on day 38 without any disabilities for performing daily life activities.

For the removal of iatrogenic intravascular foreign bodies including indwelling venous needles, central venous catheters, guidewires, and intravenous filters, the endovascular method using snare catheters or intravascular forceps has been reported [1-3], but a publication bias is conceivable. In the featured case, we removed the misplaced obstacle surgically not only due to the risk of further deviation of the outer cannula but also that of serious bleeding and cardiac tamponade with forcing endovascular manipulation. However, endovascular removal of such structures may sometimes be disadvantageous, considering the size of foreign body, misplaced positioning, or limitations in space for manipulation. In future, discussions regarding the balance between surgical removal and percutaneous procedure are warranted.

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