

Clinical News Corner

Focussing on current and new clinical procedures An Andramed Publication

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Extraction of fractured permanent pacemaker lead with no free end using a novel device the Loopmaster-Snare

References: Dr. Jan Sochman, Dr. Jan H. Peregrin, Prague

Introduction

Redundant or displaced permanent pacemaker leads may be associated with mechanical, arrhythmogenic, or infectious consequences. Moreover, in specific situations displaced electrode can cause unadvisable interaction with other electrode sensing functions, as in ICD or pacemaker electrodes. In these particular cases various extraction procedures are indicated. The specific problem has originated in the case when the abandoned pacemaker lead has no free end.

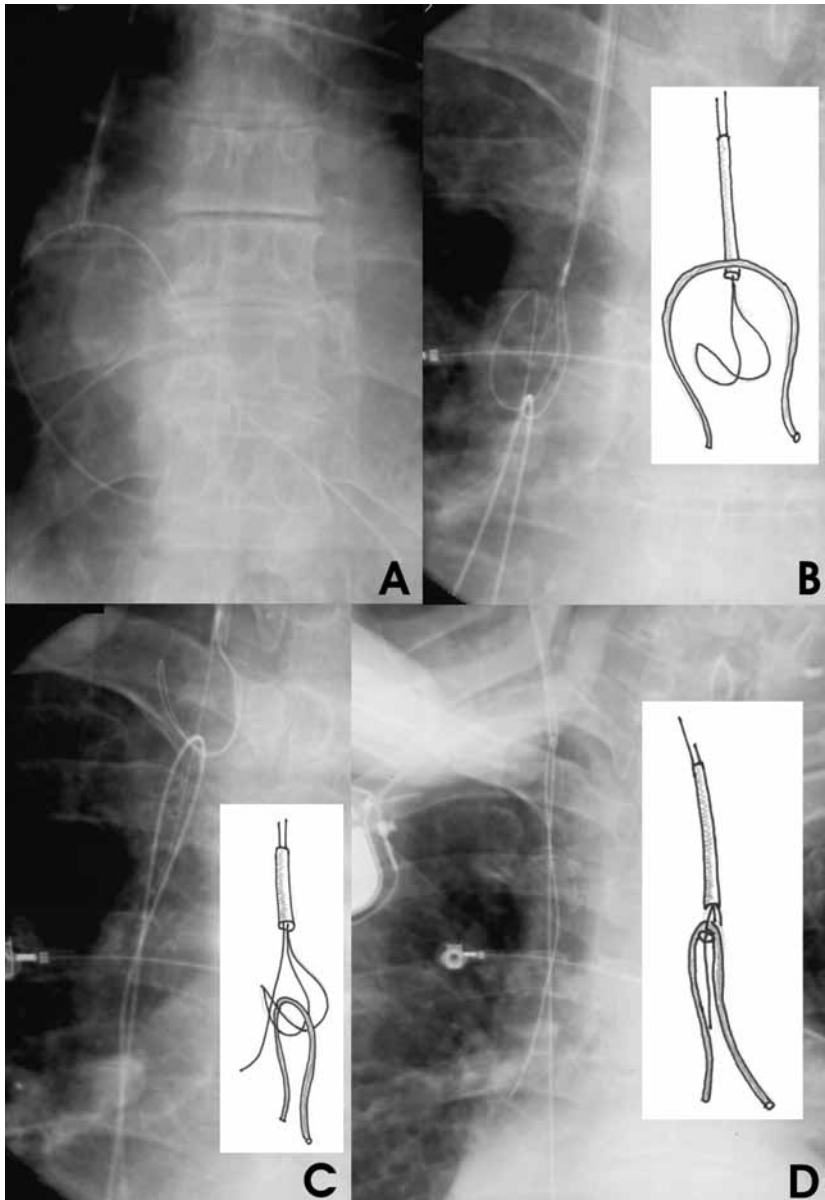
Case report

An 83-year-old man underwent permanent pacemaker implantation for symptomatic sick sinus syndrome in 1993. Eleven years later, follow-up in a local pacemaker center indicated pulse generator exchange because of exhausted battery. At that time, the patient did not complain of any substantial problem. However, chest x-ray revealed lead fracture 2-3 cm from the pulse generator, and the remaining lead segment rolled up in the right atrium. The broken end of the lead impinged on the right atrial wall and a loop of lead body was positioned in the tricuspid valve area. For this reason the patient was transferred to our department to attempt lead extraction.

Procedure description

Access was gained by inserting a 9 Fr sheath with haemostatic valve via the right internal jugular vein. As there was no free end to be captured using established techniques (snare system), we selected a double hook nitinol angled wire loop the **Loopmaster Snare** an **Andramed** device. Using this double hook we have initially induced hooking of the upper part of the electrode loop. Grasping/locking maneuver was accomplished using a J-shaped wire, which was advanced through the opened part of the loop. The lead body was then captured between the loop structure of double hook and this securing/locking J-shaped wire using a coaxially advanced catheter. By pulling back of both double hook loop and J-wire to the catheter the lead was securely trapped and fixed to the end of the catheter. After the tightening maneuver the "atrial" end of the lead was freed and subsequently exteriorized through the sheath. The remainder of the lead body was then extracted as one piece using relatively low-force traction.





References:

Sochman J, Peregrin JH, Bytesnik J. Percutaneous extraction of a fractured permanent pacemaker lead with no free end. *Pacing Clin Electrophysiol* 2005;28:1000-1001.

Sochman J, Peregrin JH. Potential use of a combined extractor in intravascular procedures. *Cardiovasc Intervent Radiol* /in press/.