

Retrieval of a Medtronic Micra Transcatheter Pacing System after tether removal

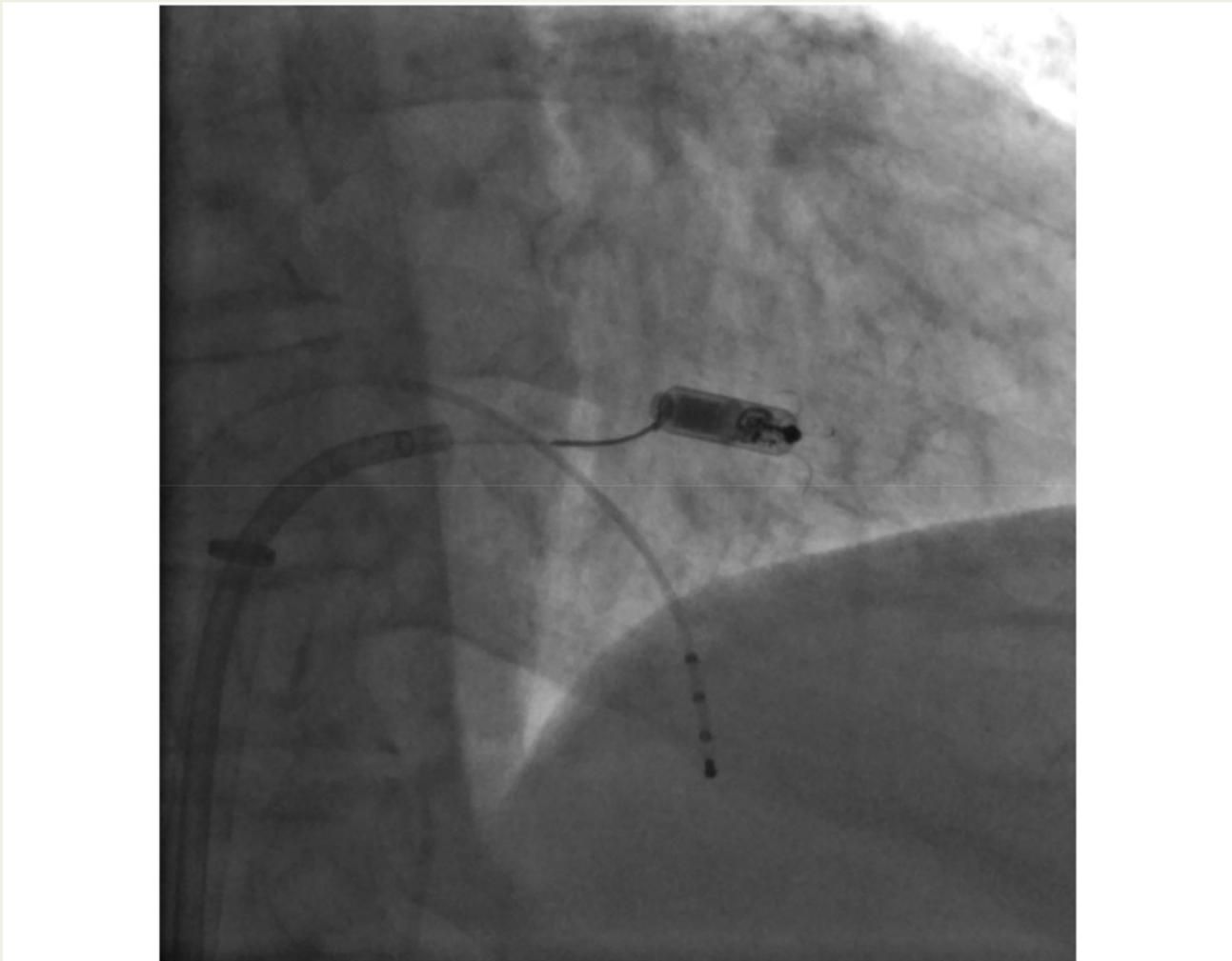
Christian Gerdes* and Jens Cosedis Nielsen

Arrhythmia Section, Department of Cardiology, Aarhus University Hospital, Skejby, Denmark

* Corresponding author. Tel: +45 2720 3530; fax +45 7845 2052. E-mail address: chr.gerdes@dadlnet.dk

Details on implant technique for the Medtronic Micra Transcatheter Pacing System (TPS) have been described elsewhere.^{1,2} Briefly, the TPS is tethered to and sits in a cup at the distal end of a steerable transfemoral catheter delivery system and placed in the right ventricle (RV) through the femoral vein using a 27 French outer diameter introducer. The device is fixated via four electrically inactive protractible nitinol tines located on the distal end of the device. Once the device is placed in the RV and adequate device fixation verified, electrical measurements are checked, the tether is cut, the delivery system including the introducer sheath is removed, and haemostasis is achieved.

We implanted a TPS using standard technique. Due to unacceptable high threshold (>2.5 V at 0.25 ms), the TPS had to be recaptured and redeployed three times until the final position apical and septal. A threshold of 1.5 V at 0.25 ms was accepted, and two tines were engaged in the myocardium. However, after cutting the tether, a slight resistance was felt when the tether was carefully and slowly pulled back. No obvious dislocation could be detected by simultaneous fluoroscopy. Subsequently, the threshold (4.0 V at 0.25 ms) is unacceptable. In order to retrieve the TPS, a 3 F snare with a 10–25 mm loop can be loaded into the delivery system. However, this snare was not available.



Instead, the delivery system was retracted, and the introducer was left in the patient. A standard steerable sheath (Agilis, St. Jude Medical) was introduced into the introducer, but there was a significant blood leak from the introducer's haemostatic valve due to the incongruent sizes. Introducing a short 14 F sheath between the introducer and the steerable sheath solved this problem. A standard 6 F 20 mm snare kit (Amplatz Goose Neck) subsequently was used to grab the TPS, which could be released from the myocardium with a gentle pull and retrieved back into the introducer sheath. Echocardiography excluded pericardial effusion, and a new Micra TPS was implanted uneventfully.

It is recommended to have a correctly dimensioned snare in stock during TPS implantation. In case, for some reason, TPS retrieval is not possible using a small snare, this report describes an alternative strategy.

Conflict of interest: none declared.

References

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2. Ritter P, Duray GZ, Steinwender C, Soejima K, Omar R, Mont L *et al*. Early performance of a miniaturized leadless cardiac pacemaker: the Micra Transcatheter Pacing Study. *Eur Heart J* 2015;**36**:2510–9.