

## EDITORIAL COMMENTARY

# Repeated recapture of a leadless pacemaker leads to tether fracture

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Kusume and colleagues<sup>1</sup> reported a rare case of tether fracture in a leadless pacemaker during repeated recapture. Leadless pacemakers are advantageous, as they preclude several of the complications associated with transvenous pacemakers and leads. Micra pacemakers (Medtronic, Minneapolis, MN) have been widely used since their inception. However, difficulties with implantation are encountered in some cases; herein, switching to a transvenous pacemaker may be considered. In the authors' case, because of the patient's strong preference, transvenous pacemaker implantation was avoided. Consequently, after the seventh attempt at Micra deployment, the tether finally broke. An important feature of leadless pacemaker systems is their retrievability; they can withstand very high tension to avoid failure during regular retrieval procedures. As cited by Tam and colleagues,<sup>2</sup> only 1 case of tether fracture has been reported to date. In the previous case, during recapture, the tether was weakened by abrasion owing to repeated retraction necessitated by the steep angle between the device and recapture cone. However,

in the present case, the tether did not undergo abrasion. The authors mentioned that a factor in the tether fracture was the risk of entrapment of complex right ventricle structures when the Micra is implanted at the basal right ventricle endocardium. However, no clear evidence has been provided that Micra was entangled in the sub-tricuspid valvular system. Therefore, the root cause of the tether fracture seems to have been repeated recapture. There are no other reports of tether fractures associated with multiple recaptures. This case report is useful, as it demonstrates that Micra may not withstand multiple deployments. Although the future of leadless device technology is promising, *nothing is unbreakable*.

## References

1. Kusume T, Takada Y, Terasawa M, Takarada K, Yazaki Y, Satomi K. Tether fracture in leadless pacemaker during repeated recapture. *HeartRhythm Case Rep* 2022. in press.
2. Tam TK, Chan YSJ, Chan CPG, Chan KYA, Chan CY. Leadless pacemaker tether failure during recapture attempt leading to device embolization. *HeartRhythm Case Rep* 2019;5:247–250.

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