

# First Polish implantations of the smallest minimally invasive implantable loop recorder

Pierwsze w Polsce implantacje najmniejszych, małoinwazyjnych rejestratorów zdarzeń

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According to the current guidelines in patients with infrequent, but recurrent, and undiagnosed syncope, an implantable loop recorder (ILR) might be a very useful diagnostic tool to establish the cause. At present, the Medtronic Reveal LINQ™ Insertable Cardiac Monitoring System is the smallest ILR available on the market. Its innovative features include: simple and minimally invasive delivery system, up to three years longevity, magnetic resonance imaging compatibility, wireless communication, and remote monitoring with internet access. On 29 September 2014, concurrently in two Polish referral cardiology centres, implantation of a Reveal LINQ™ was performed. Patient 1 was a 39-year-old man in whom for the past four years syncope and episodes of unconsciousness and injuries occurred. Despite numerous studies, including electrocardiogram (ECG) Holter monitoring, echocardiography, tilt test, and electrophysiological study (EPS) with ajmaline challenge, the reason for these symptoms was not revealed. Patient 2 was a 63-year-old man with a history of periodic fainting and complete loss of consciousness. Basic diagnostics of syncope, including repeated Holter ECG monitoring, echocardiography, coronary angiography, and neurological examination, did not revealed significant abnormalities. However, due to his high body weight, tilt was not performed and the patient did not agree to EPS. Images from the procedure are presented in Figure 1. A film of the procedure is available at: <https://www.youtube.com/watch?v=6B7Zz0NDygl>. Due to low ventricular sensed amplitude in Patient 2 there was a need for device displacement with two skin incisions. After 62 days of follow-up Patient 2 developed full syncope. When he regained consciousness he recorded transmission with a rhythm in the normal range; however, in the memory there was stored an episode of significant pause (Fig. 2A). The patient was given a permanent pacemaker. Patient 1, 84 days after implantation, is still asymptomatic, and the only recorded findings have been numerous (42) episodes of sinus tachycardia (Fig. 2B).



Figure 1. Implanting set of Reveal LINQ™ and postprocedural effect in Patient 2

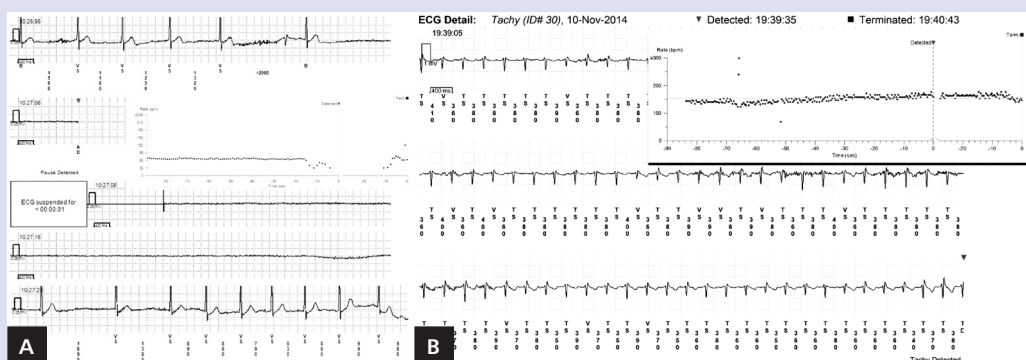


Figure 2. **A.** Record during the complete loss of consciousness in Patient 2. The episode of pause that was automatically recorded during a syncopal event (meeting the criteria programmed into the device). The device keeps an episode stored in its memory of the first 30 s of the episode and up to 27 s of intracardiac electrogram before the end of the episode; **B.** Sample episode of a sinus tachycardia with heart rate histogram recorded in Patient 1

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