



**You don't want to
guess.**

You want to know

EXPERIENCE
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Why Guess?

Diagnosis

Monitoring

Unexplained
may be

dangerous

Diagnosis:

- Syncope ▶
- Stroke ▶
- Palpitations ▶

Symptoms do
not tell the full

story

Monitoring:

- Post Ablation ▶
- Epilepsy ▶
- Post MI ▶



Diagnosis

Syncope

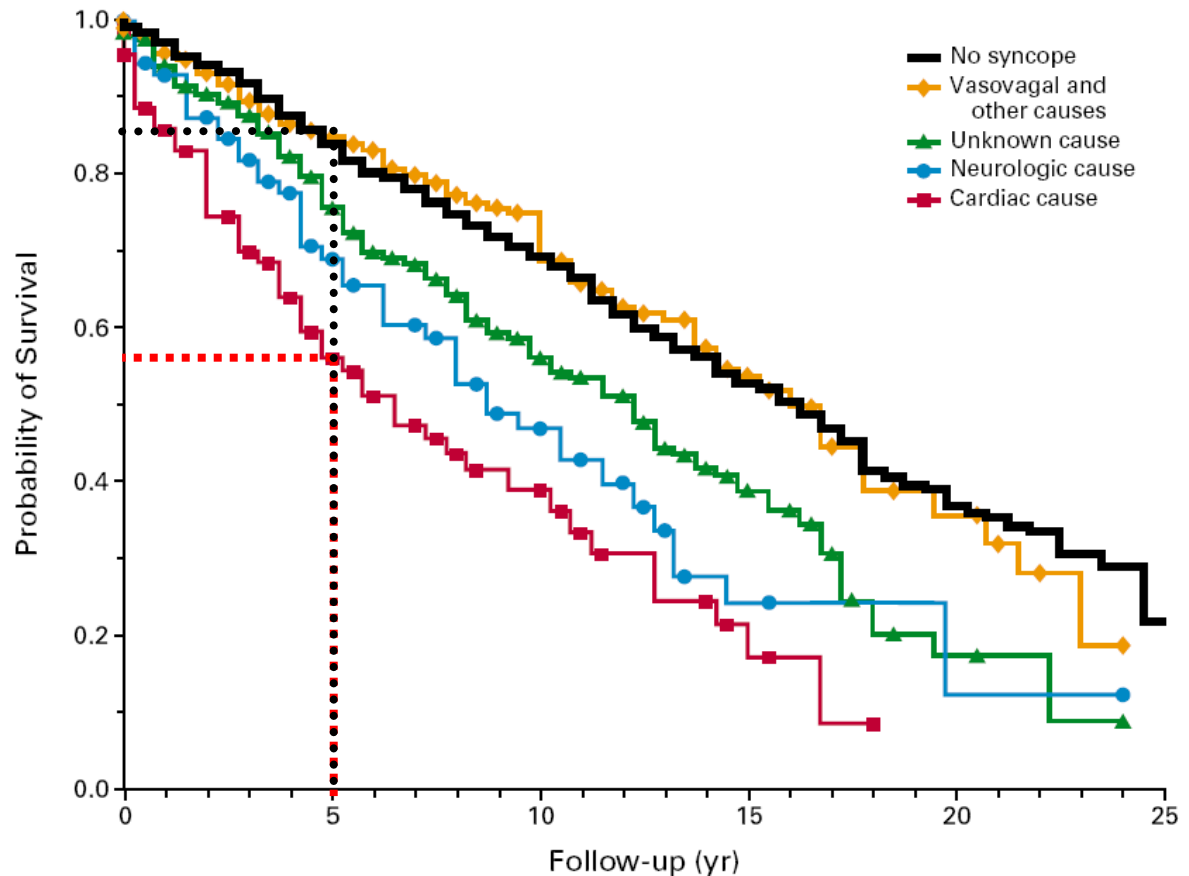
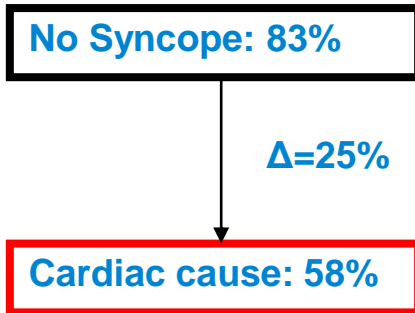
Clinical fact:

Unexplained Syncope may increase mortality risk

Reference: *Soteriades et al, Incidence and prognosis, N Engl J Med 2002;347:878-85*

Unexplained may be dangerous

Cardiac syncope has a poor prognosis



Unexplained may be dangerous

- **Difficult to catch the correlation between symptoms and underlying heart rhythm**
 - **Reveal® offers:** Symptom-rhythm correlation through patient activation
 - **Reveal® offers:** long-term continuous arrhythmia monitoring with high patient compliance.

Diagnosis

Stroke

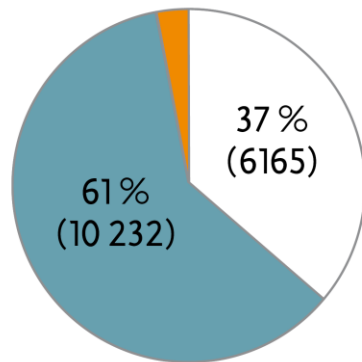
Clinical facts:

- 25% of patients with AF associated stroke have had no prior diagnosis of AF
- Continuous monitoring results in more AF detection

References: *Guercini F, Cryptogenic stroke: time to determine aetiology. Journal of Thromb. and Haemost. 2008; 6: 549–554; Hindricks et al, Perception of Atrial Fibrillation before and after Radiofrequency catheter ablation, Circulation.2005;112:307-313*

Unexplained may be dangerous

- AF was only diagnosed in 37% of the symptom-triggered ECG's
- Patient's symptoms are not a reliable surrogate parameter for AF prevalence



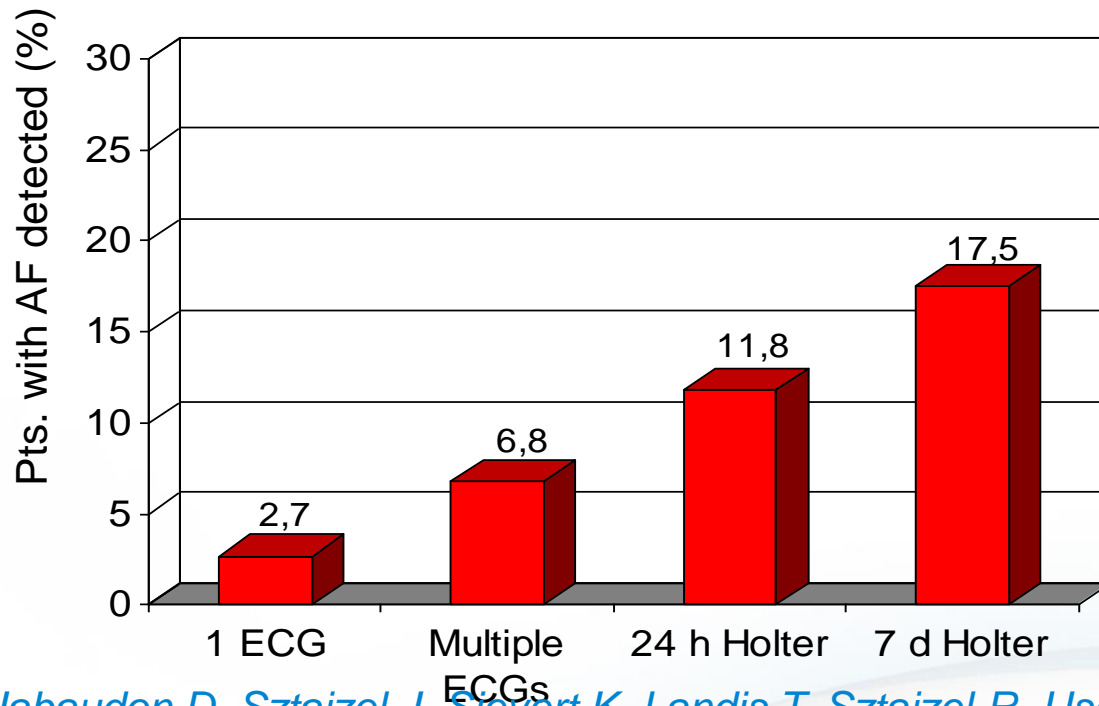
ECG diagnosis during symptomatic events (in %) of all evaluated ECGs (16,860 ECGs in total)



Reference: *M.Patten et al. J Cardiovasc Electrophysiol. 2006; 17: 1216-1220*

Unexplained may be dangerous

Extended monitoring results in more AF detection in stroke patients



Reference: Jabaudon D, Sztajzel J, Sievert K, Landis T, Sztajzel R. Usefulness of Ambulatory 7-Day ECG Monitoring for the Detection of Atrial Fibrillation and Flutter After Acute Stroke and Transient Ischemic Attack. *Stroke*. 2004; 35: 1647-1651

Diagnosis

Palpitations

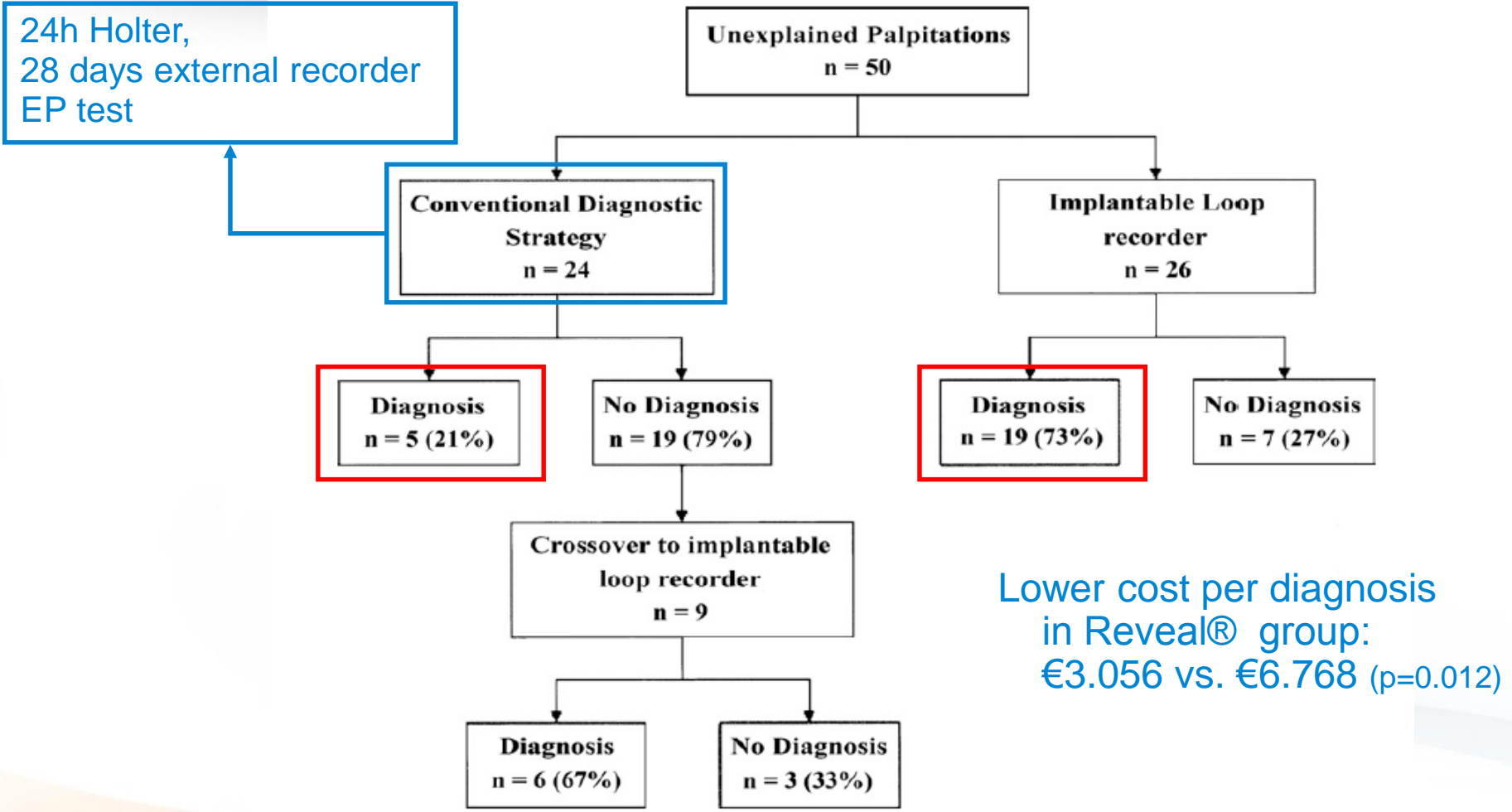
Clinical fact:

Reveal® is a safe and more cost-effective¹ diagnostic approach in patients with infrequent palpitations.

¹: compared with conventional diagnostic strategy

Reference: Giada et al., *Recurrent Unexplained Palpitations (RUP) Study*, *J Am Coll Cardiol* 2007;49:1951–6

Unexplained may be dangerous



Unexplained may be dangerous

- **Difficult to catch the correlation between symptoms and underlying heart rhythm**
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 - **Reveal® offers:** long-term continuous arrhythmia monitoring with high patient compliance.

Managing

Post Ablation

Clinical facts:

- Poor correlation between Symptoms and AF-Episodes
- Long-term monitoring detects more recurrent AF-episodes than short-term monitoring

Reference: *M. Martinek. JCE 2007; 18: 818-812; G. Hindricks et al. Circulation. 2005; 112-307:-313*

Symptoms do not tell the full story

AF episodes are often asymptomatic

TABLE 1. Rhythm Outcome and Perception of AF Before and After RF Ablation

	n	Patients With SR, n	Patients With AF			
			n	Asymptomatic Patients Only	Symptomatic Patients Only	Symptomatic+Asymptomatic Patients
Before ablation	114	22 (19%)	92	5 (5%)	35 (38%)	52 (57%)
After ablation						
Immediately	114	36 (32%) $P=0.12$	78	17 (22%) $P=0.027$	16 (21%) $P=0.002$	45 (57%) $P=0.48$
3 Months	114	65 (57%) $P=0.001$	49	18 (38%) $P=0.021$	8 (16%) $P=0.001$	23 (46%) $P=0.001$
6 Months	108	54 (50%) $P=0.001$	54	20 (37%) $P=0.021$	14 (26%) $P=0.078$	20 (37%) $P=0.001$
12 Months	70	45 (64%) $P=0.021$	25	9 (36%) $P=0.05$	5 (20%) $P=0.07$	11 (44%) $P=0.001$

Reference: Hindricks et al, Perception of AF After Catheter Ablation, Circulation, 2005

Symptoms do not tell the full story

- **Poor correlation between symptoms and AF episodes**
 - **Reveal® offers:** Verification and quantification of symptomatic and asymptomatic atrial arrhythmias
- **Continuous monitoring results in more AF detection**
 - **Reveal® offers:** Automatic AF detection to reveal asymptomatic AF episodes
 - **Reveal® offers:** Symptom-rhythm correlation through patient activation

Managing

Epilepsy

Clinical fact:

42% of patients with apparent Epilepsy had a Cardiovascular Cause.

Reference: Zaidi et al., Misdiagnosis of Epilepsy: Many Seizure-Like Attacks Have a Cardiovascular Cause, *J Am Coll Cardiol* 2000;36:181– 4



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Symptoms do not tell the full story

- Hypothesis: 20% to 30% of epilepsy pts. may have been misdiagnosed
- Study: 74 pts. : 36 were therapy-refractory and 38 with unclear diagnosis
- A cardiovascular evaluation : TTT, carotid sinus massage and Reveal® (10 pts.)

Conclusions:

- A cardiovascular evaluation indicates a cardiovascular cause in 42% of patients with the diagnosis epilepsy
- Epilepsy patient should cooperate with Cardiologists



Reference: Zaidi et al., *Misdiagnosis of Epilepsy: Many Seizure-Like Attacks Have a Cardiovascular Cause*, *J Am Coll Cardiol* 2000;36:181– 4



Symptoms do not tell the full story

- **Difficult to catch the correlation between symptoms and underlying heart rhythm**
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 - **Reveal® offers:** long-term continuous arrhythmia monitoring with high patient compliance.



Managing

Post MI

Clinical fact:

46% of patients had at least one arrhythmia,
86% of them were asymptomatic
(Patients after acute MI and left ventricular ejection fraction \leq 40%)

Reference: *CARISMA study; Presented by P.E. Bloch Thomsen during late-breaking trials session at the ACC congress 2008*



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Symptoms do not tell the full story

Some of the arrhythmias were significant predictors of cardiac death

Arrhythmia	Hazard ratio	P-value
AV block <30 bpm	7.0	0.0004
Sinus bradycardia	5.8	0.004



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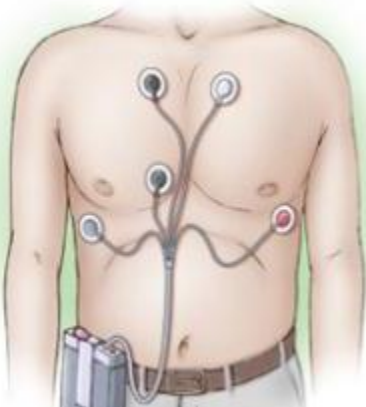
Symptoms do not tell the full story

- **Continuous monitoring to document arrhythmic episodes**
 - **Reveal® offers:** Verification and quantification of symptomatic and asymptomatic arrhythmias
 - **Reveal® offers:** long-term continuous arrhythmia monitoring with high patient compliance.

Cardiac Diagnostics Landscape

24-Hour Holter

2.5 Million



Event Recorder

1.5 Million



14-30 Day "MCOT"

250,000



Insertable Cardiac Monitor

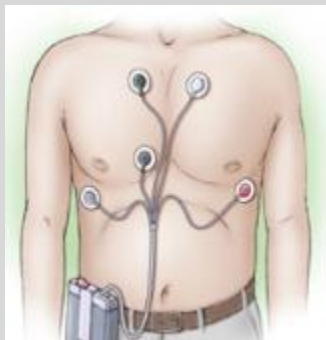
25,000



Source: www.frost.com "Global Cardiac Monitoring and Diagnostic Equipment Market"

Vision for Cardiac Diagnostics Landscape

Holter – Short term(Event or MCT) – LINQ



24-72 hrs



2-4 weeks



> 30 days

Patient Symptoms

Reveal LINQ ICM Insertion Location

1

Insertion location

Best location: 45 degrees to sternum over 4th intercostal space, 2 cm from left edge of sternum

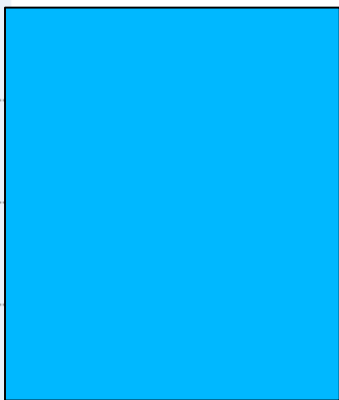
To view the insertion procedure animation, visit RevealLINQ.com or [click here](#)



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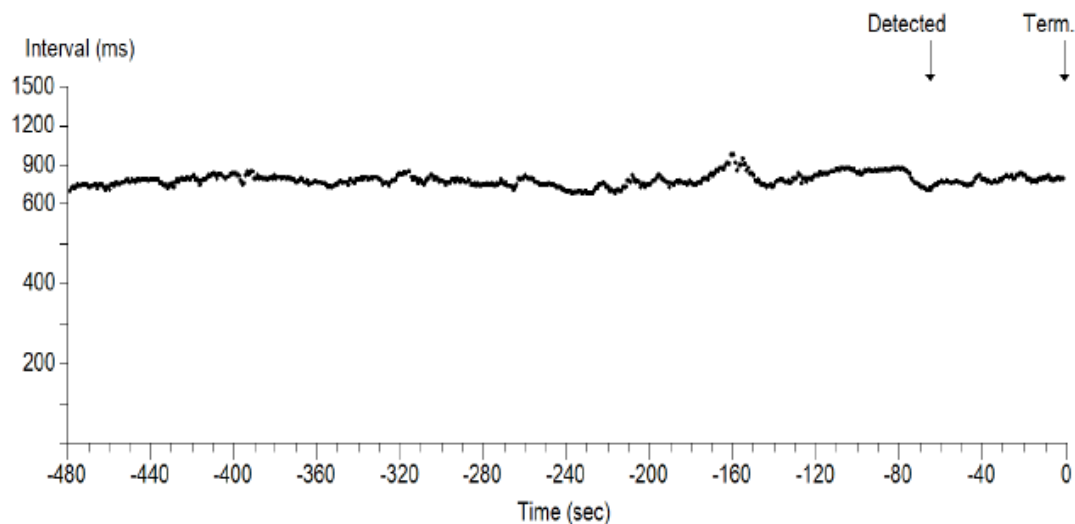


Care Link



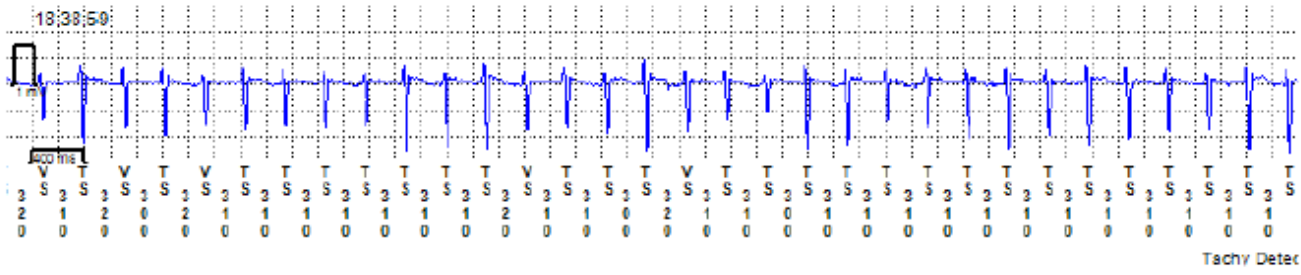
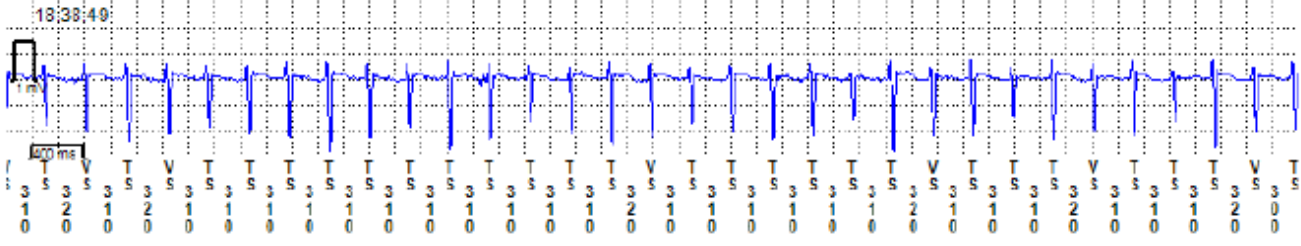
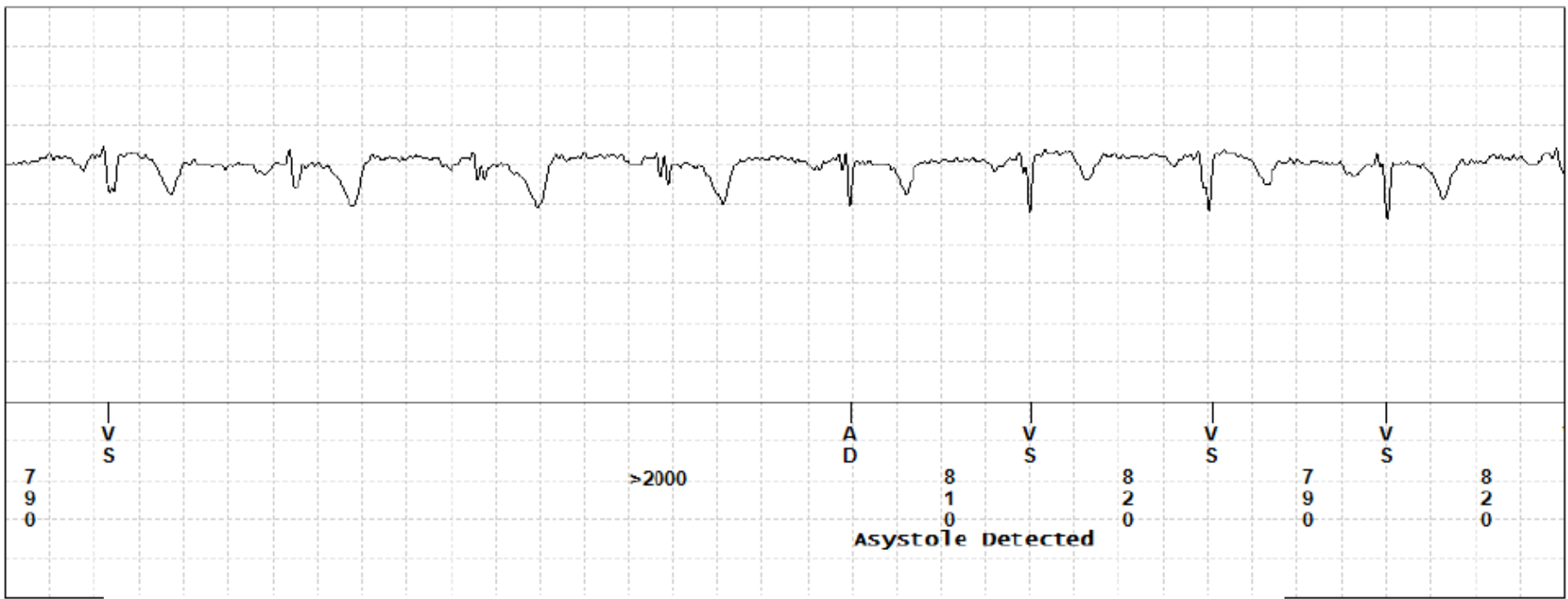
28-Aug-2014	Osztheimer, István	Reveal LINQ™ 8-Apr-2014	5-Oct-2014 Missed		RLA606538S	
3-Jun-2014	dr. Geller, Laszlo	Reveal® DX 18-Mar-2013	1-Aug-2014 Missed	9	RAB700231S	
25-Oct-2013	dr. Geller, Laszlo	Reveal® DX 16-Jul-2013	24-Nov-2013 Missed	5	RAB700081S	
24-Jun-2015	Prof. Merkely, Béla	Reveal® XT 18-Feb-2015	Not Scheduled	26	RAB749637S	

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44	SYMPTOM	14-Apr-2014	14:06			



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