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My Patient Has Syncope: What Should I Worry About ?

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Conflict of Interest

- Consulting: Medtronic
- Research: Boston Scientific, Medtronic
- People of BC: Clinical Income
- Families of Sudden Death Victims: Paul Brunes
Chair in Heart Rhythm Disorders

I am an open access person – for slides, e mail akrahn@mail.ubc.ca
(I will repeat that at the end)

Syncope Basics

- Common
- Generally benign
- Minimal diagnostic and therapeutic need



Case Presentation

27 year old athlete

- Syncope while jogging, 5 mile run in the park
- Felt “off”, stopped running, then fainted
- Woke up uninjured and walked back to the car, drove home
- Saw her family Doctor 2 days later, who called to refer her urgently

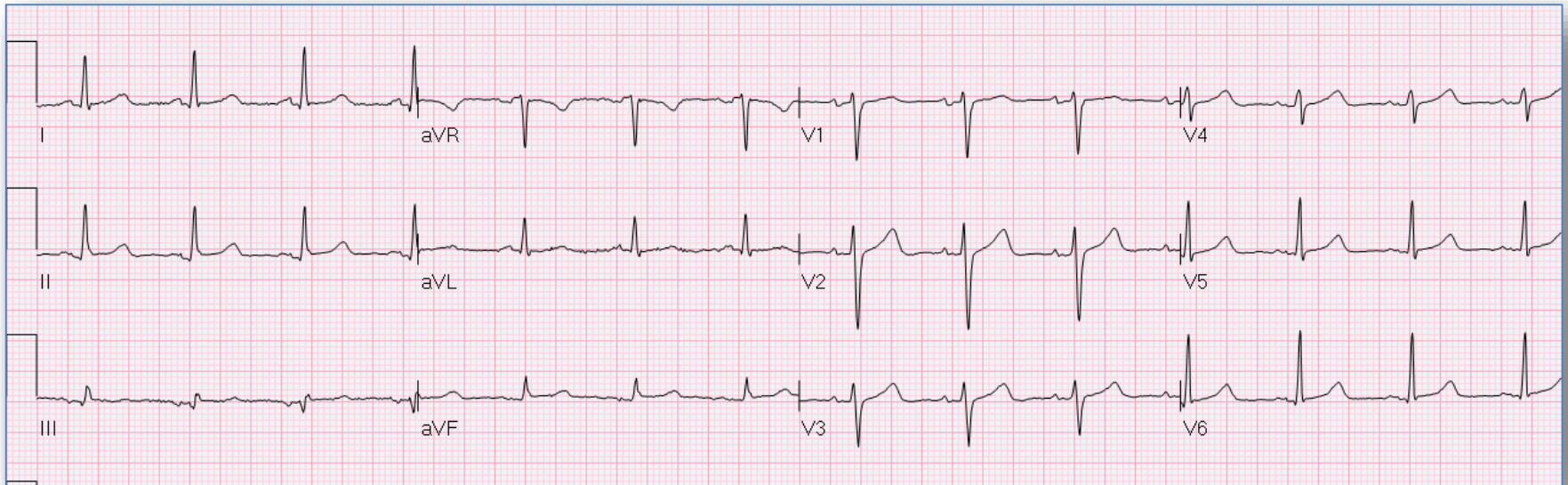


Back to our Case - Worried?

- Exercise induced:
 - Arrhythmia (tachy, brady)
 - Obstruction
 - Anaphylaxis
- Historical details CRUCIAL
 - URTI, felt very congested
 - Running and started coughing, stopped to catch her breath, felt lightheaded and passed out
 - Fainted in church age 14, hates needles



Testing



- Echo and stress test said to be normal
- Tilt reproduced her symptoms with a vasodepressor response

Take a History

- Is this life threatening?
- Talk to the bystander
- History drives testing
- You don't solve them all



<http://go.funpic.hu>

Syncope

Historical Criteria That Distinguish Syncope From Seizures

Robert Sheldon, MD, PhD,* Sarah Rose, PhD,* Debbie Ritchie, MN,* Stuart J. Connolly, MD,† Mary-Lou Koshman, RN,* Mary Anne Lee, MD,‡ Michael Frenneaux, MD,§ Michael Fisher, BSc,* William Murphy, MD‡

Calgary, Alberta; Hamilton, Ontario; and Cardiff, Wales

Table 3. Point Scores for the Diagnosis of Seizures With Knowledge of the Numbers of Spells and the Length of the History of Losses of Consciousness and Lightheaded Spells

Criteria	Regression Coefficient (SE)	p Value	Points
Loss of consciousness with stress	4.73 (1.43)	0.001	2
Head turning to one side during loss of consciousness	4.56 (1.84)	0.013	2
Number of spells >30	3.60 (1.02)	< 0.001	1
Unresponsiveness during loss of consciousness	3.89 (1.09)	< 0.001	1
Diaphoresis before loss of consciousness	-2.72 (1.25)	0.029	-1
Any presyncope	-4.90 (1.30)	< 0.001	-2
Loss of consciousness with prolonged standing or sitting	-7.36 (2.11)	< 0.001	-3

Classify as seizure for point scores ≥ 0 . The reported p value is for the Wald statistic. SE = standard error.

Evidence
based
checklist
medicine



Syncope and Structural Heart Disease: Historical Criteria for Vasovagal Syncope and Ventricular Tachycardia

ROBERT SHELDON, M.D., PH.D., AHMAD HERSI, M.D., DEBBIE RITCHIE, M.N., MARY-LOU KOSHMAN, R.N., and SARAH ROSE, PH.D.

From the Libin Cardiovascular Institute of Alberta, University of Calgary, Calgary, Alberta, Canada



Question	Points (If Yes)
Was your age at first faint older than 34 years?	3
Are you a male?	1
Have you become lightheaded or fainted with prolonged sitting or standing?	-1
Have you become lightheaded with stress?	-2
At times are you tired for more than 1 minute after fainting?	-2
Do you have recurrent headaches?	-2

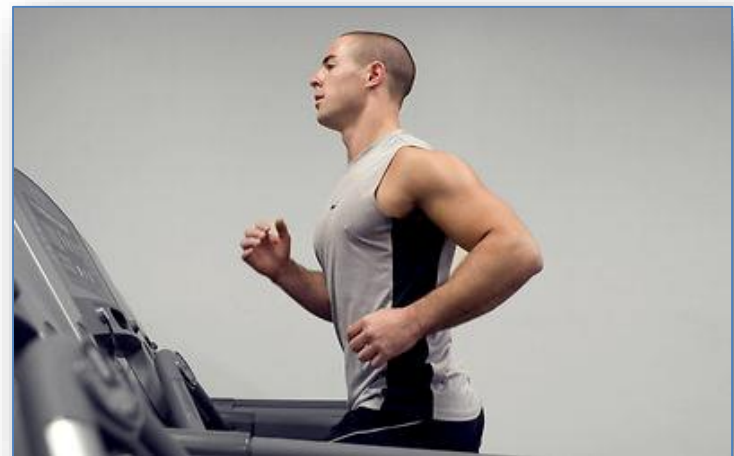
The term “stress” was used in its colloquial sense, and meant to capture psychosocial stress. The patient has VT if the point score is ≥ 1 , and VVS if the point score is < 1 .

Negative for vasovagal syncope; positive for VT

Case Presentation

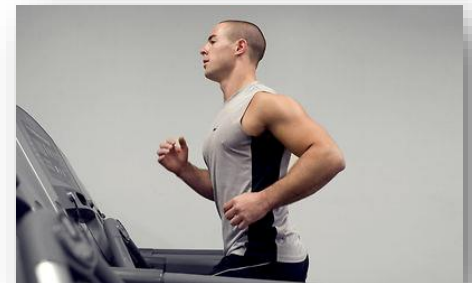
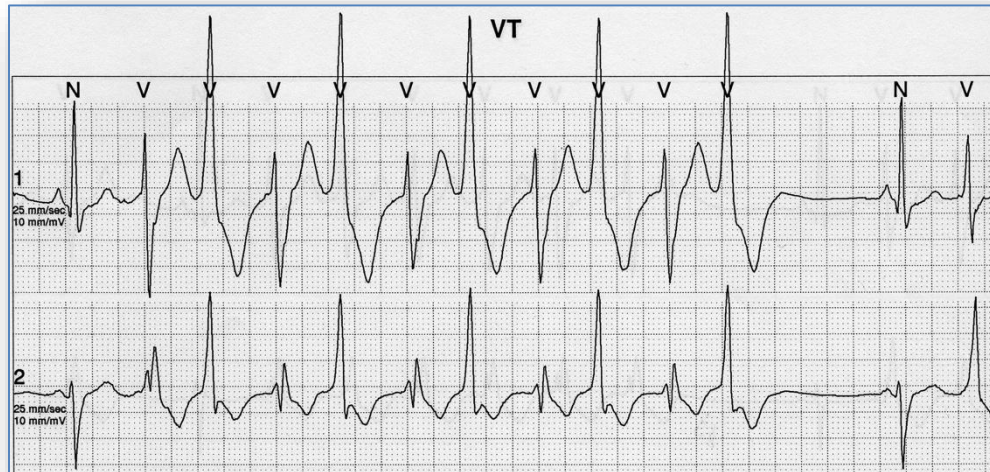
27 year old athlete

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Back to our Case - Worried?

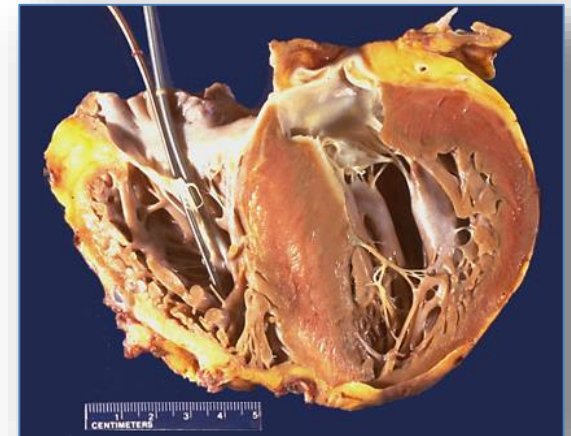
- Historical details CRUCIAL
 - URTI, felt very congested
 - Taking decongestant
 - Running and felt “off” for a minute
 - Woke up with dirt on his face



Major Risk Factors	Should Have Urgent Cardiac Assessment
Abnormal ECG	Any bradyarrhythmia, tachyarrhythmia, or conduction disease New ischemia or old infarct
History of cardiac disease	Ischemic, arrhythmic, obstructive, valvular
Hypotension	Systolic BP \leq 90 mm Hg
Heart failure	previous or current
Minor Risk Factors	Could Have Urgent Cardiac Assessment
Age > 60 years	
Dyspnea	
Anemia	Hematocrit < 0.30
Hypertension	
Cerebrovascular disease	
Fam Hx SCD	Age < 50 years
Situations	Supine, during exercise, absent prodrome

What to ask?

- Is the context unusual?
Supine, exercise
- Am I missing structural heart disease? With normal exam, low threshold for imaging, though it is low yield
- Family history (including drowning, accidents, SIDS)

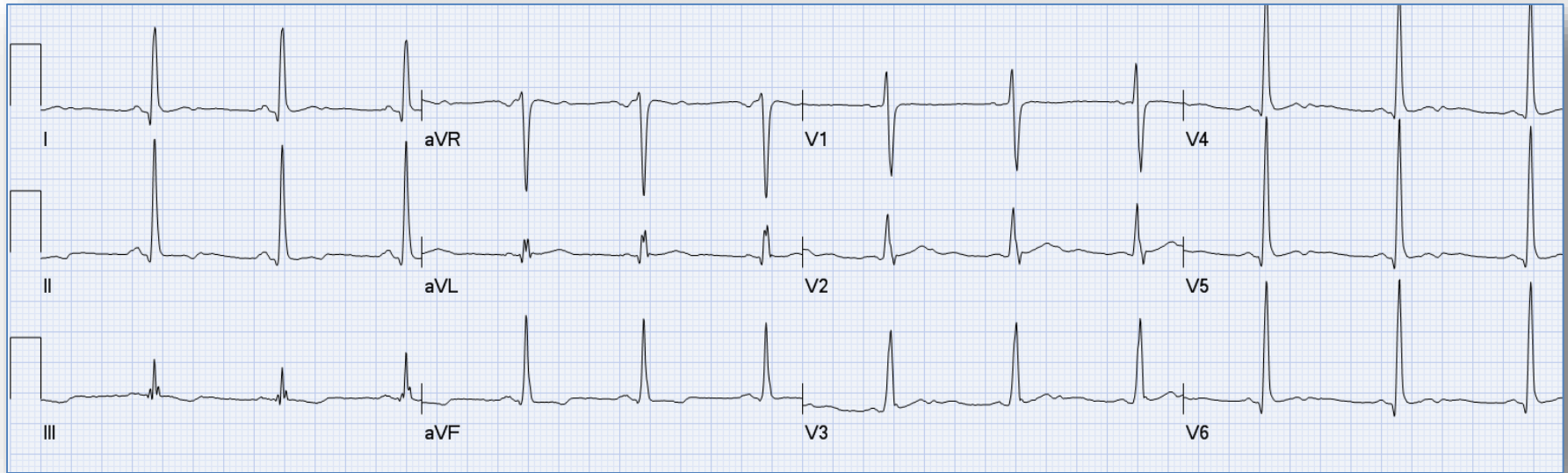


Case Presentation

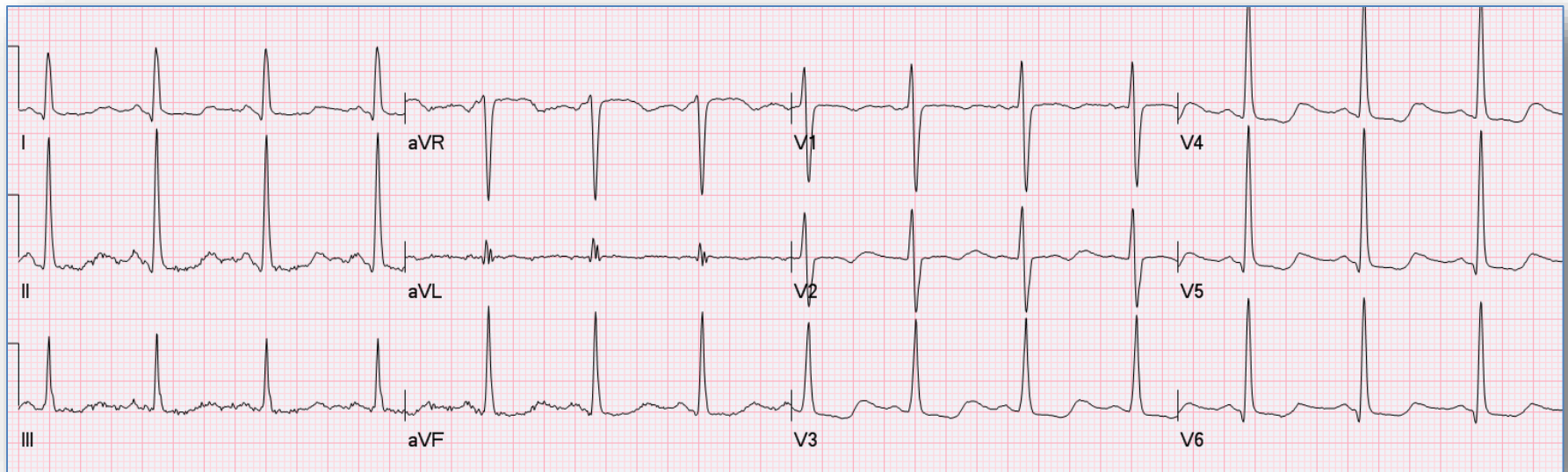
- 30 year old woman
- No family history
- Syncope x 3 with GI illness
- Analgesic for pain
- Allergic reaction to codeine
 - EMS to ER
- Adrenaline in ER



Reference ECG



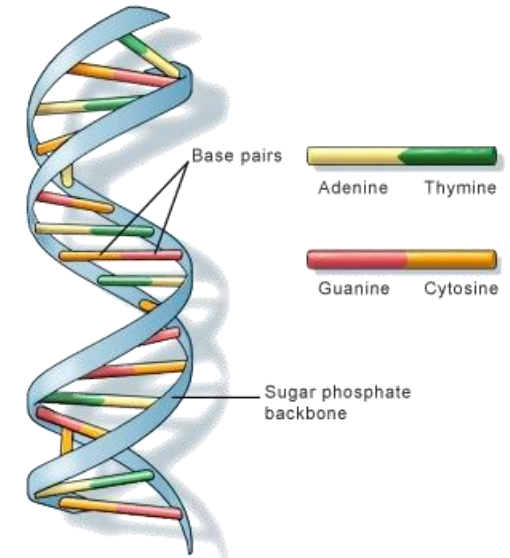
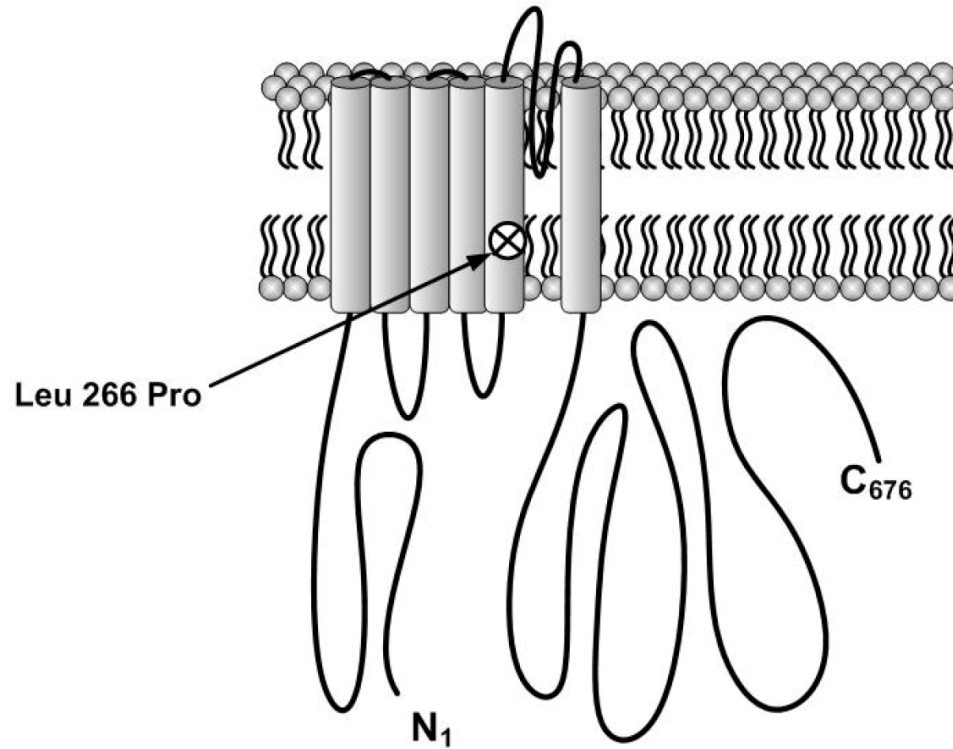
Adrenaline ECG



Genetic Testing

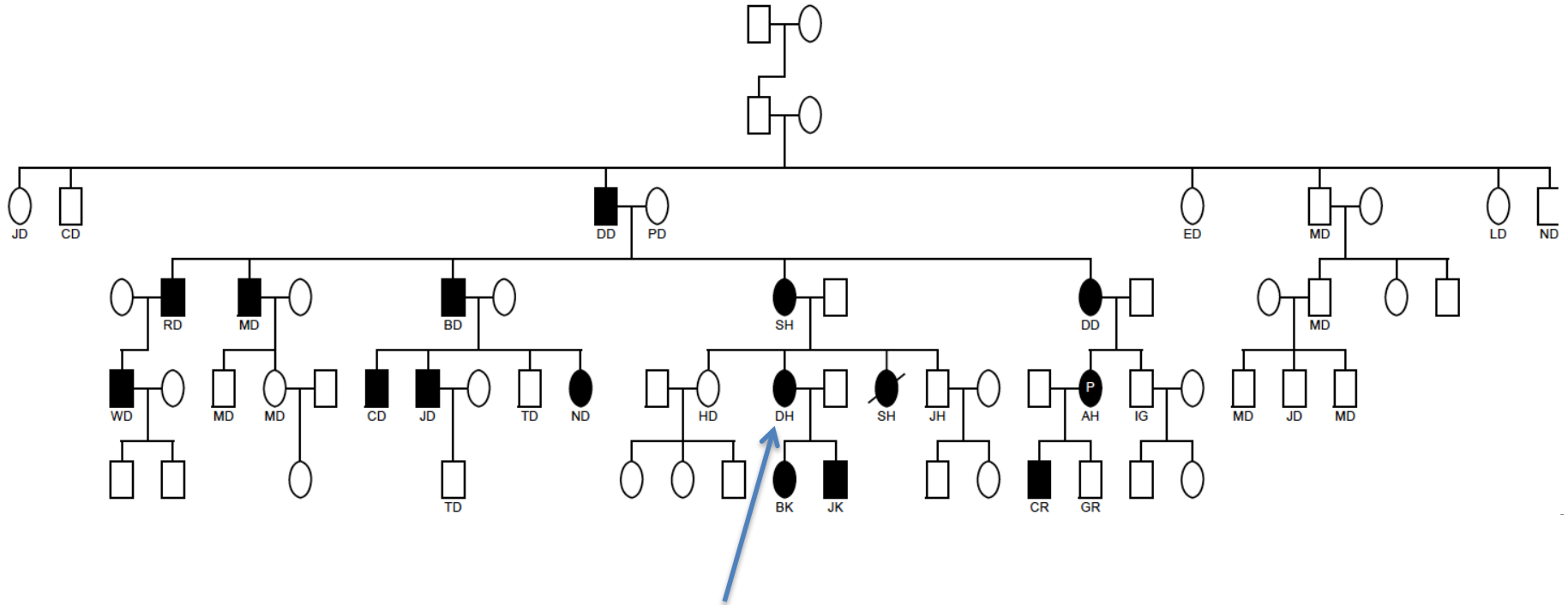
KCNQ1/KVLQT1

LQT9922490626



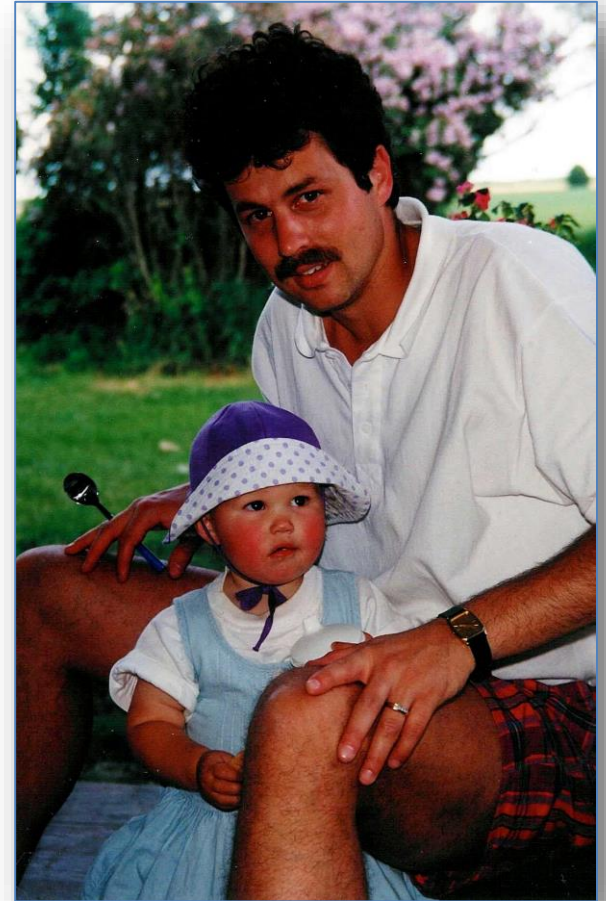
Num	Gene	Region(G)	Nucl.Change	A.A.Change	Genotype	Region(P)	Region Type(P)	Class
1	KCNQ1	exon 6	797 T>C	Leu 266 Pro	T/C	S5 domain	Transmembrane	I
2	SCN5A	exon 12	1673 A>G	His 558 Arg	A/G	DI/DII	Transmembrane spanning linker	III

Others at Risk!



Conclusions

- We all have access to the best “weapon” for evaluating syncope
- Picking out worrisome syncope from vasovagal syncope is possible
- Ask yourself if there could be heart disease which changes the risk a lot
- Develop a good working relationship with someone from IM or Cardiology to run cases by



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