Supplemental Material

Supplemental Table I	Case 1 Additional Comments
Roden	The VF "appears to be" unprovoked.
London	I would offer an ICD, not recommend, as part of joint decision making.
Behr	Difficult to ignore VF as described as not to be asscoiated with the catheterisation, presumably contrast injection
Sacher	I would ban lithium
Sy	Management hinges on the interpretation of the VF episode during cardiac catheterization. If it happened during a coronary injection, that would be a different scenario. The patient needs some form of structural assessment (eg. Echo) to exclude other causes of VF.
Krahn	Q, yes, was unavoidable trigger (not without physiologic provocation)
Kaufman	Given the spontaneous type I BrS with fever I would not do drug provocation. I am assuming the event was unrelated to catheter manipulation. Would do drug provocation in family members if they had suggestion of J wave on ECG or history of syncope.
Mackall	Even though ICD would be present, prompt treatment of fever would still be recommended. In addition, ablation of RV epicardium could be considered in future to prevent recurrent shocks.
Eckhardt	If the patient needs medical treatment for his bipolar disorder at some point lithium should be avoided and other agents should be cross-referenced with Brugada Drugs
Gollob	Drug provocation studies are for diagnostic purposes in pts without clear Br pattern phenotype. This pt has already demonsrated provoked Br pattern. I would not "recommend" ICD, but I would discuss it as an option in discussion with pt.
Nademanee	This is a difficult case because he definitely has BrS but whether or not he truly had a spontaneous VF episode in the catheterization laboratory is unclear. The other option for him is ablations of BrS substrates.
Arbelo	Difficult case. A lot of the decision-making would have depended on further interrogation. Did the patient have a history of arrhythmic syncope, seizures (febrile or not), agonic nocturnal respiration? Was the patient febrile at the coronary angiogram -i.e. did he have the type 1 ECG at the time-? I there any previous symptoms and VF during the coronary angiogram was clearly unrelated to the procedure and the patient had the type 1 ECG and fever I would go straight to ICD implantation. Otherwise, it is sometimes difficult to decide. Would likely use structured shared-decision making but in case of doubt go for the ICD.
Horie	Question NO. 4 is somewhat complicating. It means I would implant an ICD even though EP negative?
Crotti	Clearly I give for granted that imaging was normal, even if it is not specified. It would be interesting to know the age at which FM had the cardiac arrest.
Shoemaker	I would recommend drug provocation testing for any family member with a non-diagnostic Brugada pattern, or those family members that elect to have a drug provocation challenge following a shared decision making discussion.
Perez	Reason for not doing ventricular stimulation study is because the patient already had a VF arrest during the cath procedure. As for additional testing, we are starting to do routine cardiac MRI in these patients looking for signs of cardiomyopathy that could present with a Brugada ECG pattern. To clarify on family screening, if a family member had symptoms such as syncope, then I would recommend drug provocation if their baseline ECG screening were negative.
Wilde	I doubt the diagnosis BrS in this case, following the Shanghai criteria he reaches 3 points (where I don't count the VF).

Supplemental Table II	Case 2 Additional Comments
Probst	Yes for the question 3 only if the clinical evaluation include a negative sodium channel challenge as a negative genetic test is not enough to rule out the diagnosis
Krahn	need more detail about the syncope - is it arrhythmogenic? time of day, sex and prodrome argue its not arrhythmogenic
Lubitz	I assume the clinical characteristics of the syncope are clearly arrhythmogenic. If so, then I would proceed with an ICD. If the characteristics are ambiguous, I would perform an EPS. If positive, then I would implant an ICD. If negative, I would implant an ILR. If the characteristics clearly suggest a non-arrhythmogenic syncopal event (e.g., vasovagal) I would not proceed with an EPS, nor would I recommend an ICD. Given the high probability of this genetic variant being the causal variant, it is reasonable to discharge the noncarriers in the family from follow-up after a normal clinical evaluation.
Kaufman	I would recommend the ICD if I were convinced the syncope sounded arrhythmic.
Gollob	Is the ECG presented her presenting ECG or from IV Procan study? If it is presenting ECG, why was IV Procan performed.
Arbelo	Again, interrogation of the syncopal episode an prior history together with the physical examination give a hint to whether we consider the syncope as likely arrhythmic or not. What time of the day was the syncope? what was she doing when she experienced it? how long did the syncope last? did she fully recover afterwards? any history of prior syncope/febrile seizures/etc? If syncope is clearly arrhythmic I would probably go for ICD implantation. If there is doubt I would do an EP study and only implant if the study was positive (the EPS has a good NPV in case of unexplained syncope - Hernandez-Ojeda J, et al. Am J Cardiology 2020;220:213). If the syncope remains unclear (i.e. it is not clearly vasogenic nor arrhythmic), I would likely implant an ILR.
Perez	To clarify, I interpreted question 1 to be an EP study for risk-stratification (not diagnostic). My answers to 1 & 2 assumed the patient gave a good enough story for arrhythmic syncope ("very short prodrome" I interpreted as arrhythmic). If there were more doubt about the story, I would consider a ventricular stim study for risk stratification. For question 3, I assumed that "normal clinical evaluation" included a baseline ECG/modified Brugada ECG. We do baseline ECGs on all family members regardless of carrier status.
Wilde	I assume the ECG shown is not the ECG under procainamide!

Supplemental Table III	Case 3 Additional comments
Roden	would be nice to see ECG with high precordial leads on procainamide
Behr	Requries a neurological evalution and investigation for vasovagal syncope.
Probst	The only ECG abnormality is a minor ER in lateral lead. Difficult to answers the question without information on the heart rate when she was unresponsive. If there was no bradycardia at this time I will probably do nothing. If this information is not available I will probably go to an ILR
Sy	One would have to confirm that the Lifevest was attached and working at the time of the second episode. If so, this would exclude a life-threatening ventricular arrhythmia. If the history of the second episode was atypical for vasomotor syncope, I would implant an ILR to exclude an arrhythmic cause of syncope because the lifevest would only exclude extreme ventricular arrhythmias.
Krahn	imaging in the stem is spelled imagining LOL
Kaufman	If I were convinced of arrhythmic syncope, an EP study might help uncover other (non-Brugada related) abnormalities. If the EP study were unhelpful but worrisome episodes persisted, an implantable loop recorder could be considered.
Mackall	The EP study in this case was performed before the results of genetic testing were available?
Arbelo	The use of the EPS as a tool for the evaluation of syncope is ok... so I would not think it is wrong to do it. The same for an ILR (if syncope, following a good clinical history +/- tilt test, remains unclassified). I believe that with good interrogation we may probably end up with a classification of syncope as vasogenic and preventive measures would likely minimize the risk. IMPORTANTLY, we do not have a diagnosis of Brugada syndrome (at least yet). The procainamide test is not the best drug to rule it out so we cannot be sure that she does not have it (I would recommend ajmaline). Finally, genetic testing should only have been done one the phenotype is clear for appropriate interpretation of the results.
Crotti	She has no Brugada and no arrhythmias documented during episodes. Probaby other causes of these symptoms should be investigated. To me it was a mistake to perform molecular screenig. I would ask the lab to reevalute the result to see if it is really a pathogenic variant and not only a VUS!
Perez	I must admit that workup in this case hinged on interpretation of V1 on ECG1 - and I'm not quite sure I would have called this a Type 1 pattern (of course, in retrospect, it is easier to do so since we have genetic testing results). Note that the ST segment is not clearly elevated above 2mm (though it's a bit fuzzy) and there seems to be interventricular delay (terminal QRS notching and slurring) evident throughout the ECG, not just V1-V2. For #2, I would note that we do broad genetic testing in ALL our Type I Brugada pattern patients.

Supplemental Table IV	Case 4 Additional comment
Roden	this is cocaine intoxication. His baseline ECG looks OK except tachycardia, so I don't think I'd get excited about a workup.
Behr	A reversible insult - extreme - not Brugada but may ahve myocardial damage from Cocaine excess and infraction - hence MRI
Sy	The presenting ECG has some features which would be consistent with cocaine toxicity. It is unclear if it is an idioventricular rhythm or whether it is sinus rhythm with very long PR interval (see Lead I). At any rate, there is significant depolarization and less marked repolarization abnormality that might be attributed to cocaine intoxication (marked sodium channel blockade) rather than an inherited channelopathy. I think it would be reasonable that the VF arrest is secondary to cocaine intoxication. An echocardiogram to exclude vasospastic-induced LV dysfunction/ takotsubo CM is indicated. The value of a Na-channel blocker challenge to exclude Brugada syndrome is of questionable value. I would not personally do it (becasue it would probably confuse the issue) but I can understand it if some physicians would advocate for it for completeness.
Krahn	shared decision making on ability to avoid repeated recreational drug exposure (I can see an ICD is some circumstances, but not my default)
Lubitz	scenario may also suggest vasospasm; could consider cath to provoke vasospasm but would be a low priority consideration, and he could be treated empirically as an alternative
Kaufman	I would have to consider this event secondary to the cocaine intoxication. If the patient were cooperative, I would do a thorough evaluation looking for underlying substrate, but for imaging I would start with an echo.
Gollob	The ECG does not represent brugada pattern but is most likely related to metabolic abnormalities post-arrest/cocaine.
Nademanee	I would also consider catheter ablation of BrS substrates.
Arbelo	Several comments. In the acute phase it would have been interesting to have a coronary angiogram to rule out coronary spasm due to cocaine (phenocopy of Brugada). Again, I would challenge ideally with ajmaline to be sure. I would rule out structural heart disease with an echo and if there is anything, I would then perform the MRI. Finally, the second tracing shows long QT maybe also due to cocaine (to be also monitored)
Crotti	I personally think that in this case is the cocaine that is a known strong channel blockers that induced everythig and that's why I wouldn't suggest an ICD. However, as he had a cardiac arrest it is difficult not to perform an echo first and probably also an MRI (but mandatory is to me at least an echo), also because we know that drug-abuse could also favour DCM that could be an additional underlying favoring factor for a CA . Regarding drug challenge, it is more uncertain the indication to me, however, I would probably avoid it. .
Perez	I tend to ignore most unusual ECG patterns after a VF arrest. That said, if the Type II pattern evident on ECG 2 persisted (3 hours post arrest is probably still not long enough), I think a drug provocation would be indicated to help assess for Brugada syndrome. Cardiac MR I think is helpful in most young patients with unexplained cardiac arrest, regardless of Brugada diagnosis.
Wilde	I would regard this as cocaine intoxication.