

Clinical Setting: 55 y M with CHF (EF 30-35%), HTN, schizophrenia who presents after he had a pre-syncopal episode.

HR - 78

BP - 148/96

RR - 16

SpO2 - 95% RA

Temp - 98.4 F

This is a case of **LVH and Left Ventricular Strain Pattern**.

At first glance this is a very concerning EKG - there is mild STE in V2-3 but up-down T waves, and then deep, symmetric TWI's in V4-V6. There are also TWI's throughout the rest of the EKG.

This pattern of up-down T waves should make you think of Brugada and Wellen's. Regular ischemic T waves don't typically have this appearance. Then the deep T waves are very atypical for ischemic T waves - they are too symmetric, too narrow. Both Brugada and Wellen's are syndromes, so have to be interpreted relative to symptoms - Brugada would be a possibility for this patient with syncope, though the morphology doesn't quite fit with known Brugada examples.

The other thing that can tie these together is LVH with strain. Typically you can see LVH pattern (in this case, the R waves in V5-6 meet criteria, greater than 25 mm). With strain, you can see TWI's lateral and high lateral, as well as ST depression. These are pretty dramatic examples of LV strain patterns.

Most importantly, this patient had a recent ECHO and multiple recent EKG's that were unchanged over months. With the absence of that story, this patient should get repeat EKG's, troponins, an ECHO and possibly a cath to rule out ischemia.