Can't Miss ECG Findings

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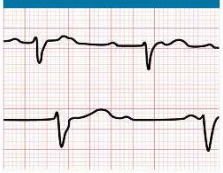
P

Third Degree AV Block

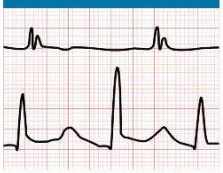


Complete AV dissociation

Common causes
- Ischemia
- Electrolyte abnormality
- Toxins

QRS/QTc

Pericardial Effusion



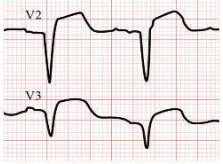
Low voltage ECG criteria
- Precordial QRS: <5 mm
- Limb QRS: <10 mm

Electrical alternans
- Alternating tall-short QRS

Complication
- Pericardial tamponade

ST

ST Elevation MI



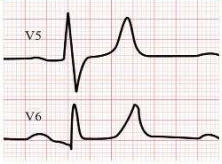
ACCF/AHA 2013 definition: STE in 2 contiguous leads

STE height in lead V2 or V3
- Men ≥2 mm
- Women ≥1.5 mm

STE height in all other leads
- Everyone ≥1 mm

T

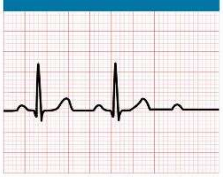
Peaked T Wave



High risk causes
- Ischemia (early sign)
- Hyperkalemia (does not predict K value)

Other hyperkalemia findings
- PR/QRS interval prolongation
- AV block

Mobitz II



ECG criteria
- Dropped QRS **without** progressive PR prolongation

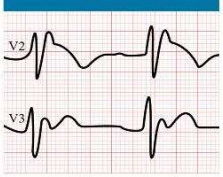
Complication
- High grade AV block

Wide Interval

ECG criteria
- QRS width ≥120 msec

Common causes
- Hyperkalemia (assume until proven otherwise)
- Ischemia
- Conduction disease
- Medication and toxins

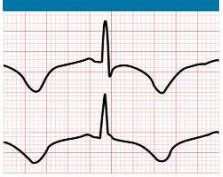
Brugada Sign



Type 1: Coved STE >2 mm in ≥1 lead of V1-V3. followed by negative T wave
- This ECG finding + clinical criteria needed to diagnose Brugada syndrome, which is high risk for sudden death

Type 2: Saddleback shaped STE >2 mm; less specific

Inverted T Wave



Normal in leads aVR and V1

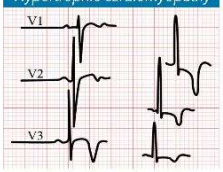
Causes for precordial inverted Ts
- Acute ichemia
- Cardiomyopathy (CMP)
- Conduction disease
- RV strain (e.g. PE, ARVD)
- CNS catastrophe

Mobitz I

ECG criteria
- Dropped QRS **with** progressive PR prolongation

Less risk than Mobitz II

HCM
Hypertrophic cardiomyopathy



ECG criteria
- Left ventricular hypertrophy
- Narrow "dagger" Q waves in lateral / inferior leads
- Deep T wave inversions

High risk for syncope, atrial fibrillation (CVA risk), progressive heart failure, VT / VF arrest

ST Depression

If in anterior leads:
- Consider posterior MI

If in lateral leads:
- Likely LVH with strain, if with high QRS voltage

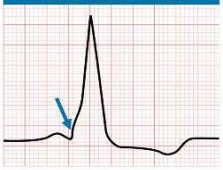
Consider ACS if ST depression in any lead with chest pain or shortness of breath

ARVD
Arrhythmogenic RV dysplasia

ECG criteria
- Variable
- May see epsilon wave, a small positive deflction at QRS end (arrow)

High risk for syncope, arrhythmia, heart failure, sudden cardiac death

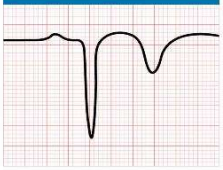
WPW
Wolff-Parkinson-White



ECG criteria
- Short PR <120 msec
- Delta wave (arrow)
- Wide QRS ≥ 120 msec
- Secondary ST repolarization

High risk for arrhythmia and mimicking/masking ischemia

Q Wave



ECG criteria for pathologic Qs
- Q wave in any V1-V3 lead
- Any other lead when width ≥30 msec or depth ≥1 mm

Common causes
- Acute MI
- Cardiomyopathy
- WPW

J Wave
Osborn Wave

ECG criteria
- Positive deflection at J point most often seen in precordial leads

May be seen in hypothermia

Associated with higher risk for arrhythmia (bradycardia, VF) and STEMI

QTc Prolongation

High risk ECG criteria
- QTc >500 msec

Normal QTc interval
- Men <440 msec
- Women <460 msec

Common causes
- Electrolyte abnormality
- Medication and toxins
- Familial

ALiEM

Updated 7-10-18