STEMI Mimics — Recognizing the Impostors

- Understanding Conditions That Resemble ST-Elevation Myocardial Infarction
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Introduction to STEMI Mimics

- Conditions causing ST-segment elevation on ECG without acute coronary occlusion.
- Importance: Misdiagnosis can lead to unnecessary interventions.
- Prevalence: ~10–36% are not true STEMIs.

Common STEMI Mimics

- Pericarditis
- Left Ventricular Hypertrophy (LVH)
- Early Repolarization
- Left Bundle Branch Block (LBBB)
- Ventricular Paced Rhythm
- Brugada Syndrome
- Hyperkalemia
- Pulmonary Embolism

Pericarditis – ECG Characteristics

- ECG: Diffuse concave ST elevations throughout most of limb leads
- PR depressions with st elevations
- Clues:
- Sharp pleuritic Chest pain relieved by sitting up worsens on lying down
- Recent viral illness.

Pericarditis – Differentiation

- Widespread ST elevation
- No reciprocal ST depression if present are there in I and aVR
- No Q waves
- Both STEMI and pericarditis conditions can produce concave ST elevation however but only STEMI can produce convex ST elevations
- ST segment/ T wave ratio >0.25

LVH – ECG Characteristics

- ECG:
- ST segment and T wave become discordant
- ST depression with T wave inversions in I, aVL and V5 V6
- ST elevation in V1-3
- Left axis deviation
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- Clues:
- History of hypertension, AS, AR

  Echo cardiography
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LVH – Differentiation

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- No chest pain or elevated troponins

Early Repolarization – ECG Characteristics

- ECG: ST elevation in precordial leads and inferior leads
- notching at J point
- Clues: Young, healthy individuals
- Ratio of ST elevation/T wave ratio <25% suggests early repolarization

Early Repolarization – Differentiation

- Stable over time
- No physical symptoms or enzyme elevation
- No reciprocal changes of ST segment
- ST elevations usually becomes isoelectric or less pronounced during tachycardia and becomes accentuated in bradycardia
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LBBB – ECG Characteristics

- ECG: Wide QRS >120 ms , discordant ST changes
- Clues: May mask or mimic STEMI

LBBB – Differentiation

- Use Sgarbossa criteria
- Consider symptoms/history

Brugada Syndrome – ECG Characteristics

- ECG: ST elevation in V1–V3, coved/saddleback
- T wave inversions in right precordial leads
- Clues: Syncope
- palpitations

  family hx of sudden death

Brugada Syndrome – Differentiation

- Genetic disorder
- No chest pain or elevated enzymes
- Absence of reciprocal changes and presence of coved morphology
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