

Summary of Differential for Diffuse ST Elevation without Reciprocal Changes

November 12, 2020

1 Benign Early Repolarization ST elevation is ischemia until proven otherwise. To be BER, must meet all criteria below: 1. <u>V2 AND V3</u> must have J wave OR S wave. 2. All STE must be concave upwards (Fig. 3). 3. No reciprocal ST changes 4. No hyperacute T waves (fit QRS in T wave) 5. No poor R-wave progression 6. No pathologic Q waves- • >40ms wide OR • >2mm deep OR • >25% of depth of QRS complex OR • Seen in leads V1-3	1 No J or S J wave distinct notch S wave must go below baseline 2 Apex J point Concave Non-concave 3 Mirrors the STE in opposite leads ST elevation Reciprocal change 4 5 Poor R Wave Progression R wave height ≤ 3 mm (3 small squares) in V3. The R wave height normally becomes progressively taller from leads V1 through V6. Poor R wave progression 6 Normal Q waves Pathologic Q waves
Pericarditis For Pericarditis, must meet criteria below: 1. No ST depressions in any 1 lead except aVR and V1 (Fig. 4) 2. No STE in lead III>II (Fig. 5) 3. No STE convex or horizontal 4. No STE checkmark sign (Fig. 6) 5. No new Q waves If all criteria above met, check following which favor pericarditis: 6. PR depression in multiple leads (Fig. 7) 7. Spodick's sign- TP down slope (Fig. 8) 8. BER vs Pericarditis • ST/T wave >0.25 favors pericarditis • ST/T wave <0.25 favors BER	1 2 STE III > II 3 4 5 Pathological Q wave Q waves point at electrically silent areas and can be a sign of previous myocardial infarction Definition of a pathologic Q wave: • Any Q wave in leads V2-V3 • Q wave ≥ 0.03 s and > 0.1 mV deep in other leads. • To be defined as pathologic, Q waves need to be present in two contiguous leads (e.g. II and aVF or I and aVL or V1 and V2) 6 7 TP Segment 8 BER Pericarditis
Ventricular Aneurysm • H/o MI • Pathologic Q waves	
STEMI vs Myocarditis • No reliable ECG findings to distinguish • Both produce ischemic-appearing ECGs, TN elevations, ventricular arrhythmias • ECHO can be helpful, global v. regional	A Checkmark ST elevation in V4, No J or S wave in V3
References: Steve Smith blog, LITFL, ECG Weekly Aug 10, 2020, ECG Weekly November 2, 2020	