#7: 35 yo man with sharp CP and SOB
STEMI or Acute Pericarditis?
ECGs and Pericarditis

1. Factors that strongly favor STEMI
   - STD except in V1 or aVR
     • (STD in V1 or aVR is allowed in AP)
   - STE in III > II
   - Horizontal or convex upwards STE
   - Q-waves that you know are new
ECGs and Pericarditis

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   - STE in III > II
   - Horizontal or convex upwards STE
   - Q-waves that you **know** are new

2. Factors that **strongly suggest** AP (after above has been evaluated!)
   - PR depression in **multiple** leads
     - (Only reliably seen in viral AP, transient)
ECGs and Pericarditis

When in doubt, get serial ECGs!
STEMI or Acute Pericarditis?
STEMI
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When in doubt, get serial ECGs!
STEMI or AP?
STEMI or AP?
STEMI or AP?
30yo man with 3 hrs. central CP
Consultant: “Pericarditis”
Dx: STEMI

Dr. Hasdan AlMaateeq
Elderly woman with CP
Elderly woman with CP

![Elderly woman with CP](image)
STEMI!
ECGs and Pericarditis

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CAUTION

THIS SIGN HAS
SHARP EDGES

DO NOT TOUCH THE EDGES OF THIS SIGN
CAUTION

THIS SIGN HAS SHARP EDGES

DO NOT TOUCH THE EDGES OF THIS SIGN

ALSO, THE BRIDGE IS OUT AHEAD
THE END IS NEAR!
#8: 45yo woman with CP and SOB
STEMI or AP?
STEMI or AP?
Acute pericarditis...?
Acute pericarditis...?
Acute pericarditis...?
Diffuse ischemia
STEMI with PR depression
Hunan Dynasty

Chinese Restaurant

WE NOT SEE YOUR CAT. STOP ASKING TRY OUR CHICKEN IT'S PURRRRFECT
There's plenty of room for all God's creatures.
There's plenty of room for all God's creatures.
Right next to the mashed potatoes.
#9: 40 yo M with dull CP after smoking crack cocaine
#9: Benign early repolarization
Benign early repolarization
Benign early repolarization
Benign early repolarization
Benign early repolarization

STE: Peak of T < 0.25

V6
Benign early repolarization

V6
AMI and Pericardritis
AMI and Pericarditis

V6
AMI and Pericarditis

STE: Peak of T > 0.25

(note: may have no V6 STE)
Benign early repolarization
Benign early repolarization
## STEMI vs. Acute Pericarditis/BER

<table>
<thead>
<tr>
<th>STEMI/AMI</th>
<th>Pericarditis and BER</th>
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</thead>
<tbody>
<tr>
<td><strong>STE, STD</strong></td>
<td>Diffuse or localized STE, frequent reciprocal STD</td>
</tr>
<tr>
<td><strong>ST segment morphology</strong></td>
<td>Straight, horizontal, convex or concave</td>
</tr>
<tr>
<td><strong>If STE II and III...</strong></td>
<td>STE III &gt; II (usually)</td>
</tr>
<tr>
<td><strong>Evolving changes</strong></td>
<td>Usually ST-segments and Ts</td>
</tr>
</tbody>
</table>
Acute Pericarditis vs. BER

- Positional changes in pain
- “Fishhook” → BER
- Height of ST:T wave in lead V6
- Old ECGs
Causes of STE...

When in doubt, get serial ECGs!
HIKERS and BIKERS
Move to the side of the road when a vehicle approaches
Psychic Fair
Cancelled
due to unforeseen circumstances
#10: 45 yo M with CP

Courtesy Mat Goebel
de Winter T Waves

Courtesy Mat Goebel
de Winter T Waves

A New ECG Sign of Proximal LAD Occlusion

Verouden, et al. Heart 2009

Rokos, et al. Am Heart J 2010
  – Proposed STEMI equivalent


de Winter T Waves

High-Risk ECG Patterns in ACS—Need for Guideline Revision
(Birnbaum, et al. J Electrocardiol 2013)

• *Acute* occlusion of the proximal LAD (contrast to Wellens syndrome) or less commonly 1\textsuperscript{st} diagonal or left Cx
• Urgent cath should be “strongly considered”
de Winter T Waves

- Increasing push to consider this a STEMI equivalent
  - Early literature indicated that this was a static finding until artery opened at cath
  - We now have cases of de Winter Ts progressing to STEMI within ED timeframe
- Get serial ECGs while the patient is having pain!
de Winter T Waves

Courtesy Mat Goebel
Case 1

Upsloping ST depression, tall symmetric Ts
90 min later

Courtesy Mat Goebel
From de Winter, NEJM 2008
From Verouden, Heart 2009
Elderly M with CP
Elderly M with CP
Baseline
...later → anterior STEMI, LAD stenosis
71 yo M with CP x 30 min

Courtesy Dr. Nicolas Pineda (Chile)
Dx: NSTE-ACS?

Courtesy Dr. Nicolas Pineda
(Chile)
Evolved over next several hours

Courtesy Dr. Nicolas Pineda (Chile)
Evolved over next several hours

Courtesy Dr. Nicolas Pineda (Chile)
Cath → 90% prox LAD

Courtesy Dr. Nicolas Pineda (Chile)
• Although no STE, high concern for decompenstation
  – Unstable LAD stenosis
  – Now → treat aggressively, get ECGs, may evolve → STEMI
  – Future → STEMI equivalent (CLA)?
Remember...

- Just because electrocardiography is a basic skill...
Remember...

• Just because electrocardiography is a basic skill doesn’t mean that our skills should be *basic*. 
Remember...

• Just because electrocardiography is a basic skill doesn’t mean that our skills should be basic.

• YOU need to strive for expertise in electrocardiography!
Thanks!
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lectures.umem.org/Essentials