

PEDIATRIC CHEST PAIN & EKGs

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INQUIRE



- Congenital or acquired cardiac disease
- Surgeries
- Family history of heart disease
- Fever
- Constitutional symptoms or other symptoms
- Skin peeling
- Lymphadenopathy
- Strawberry tongue
- Preceding upper respiratory infection



IDENTIFY

Benign Causes

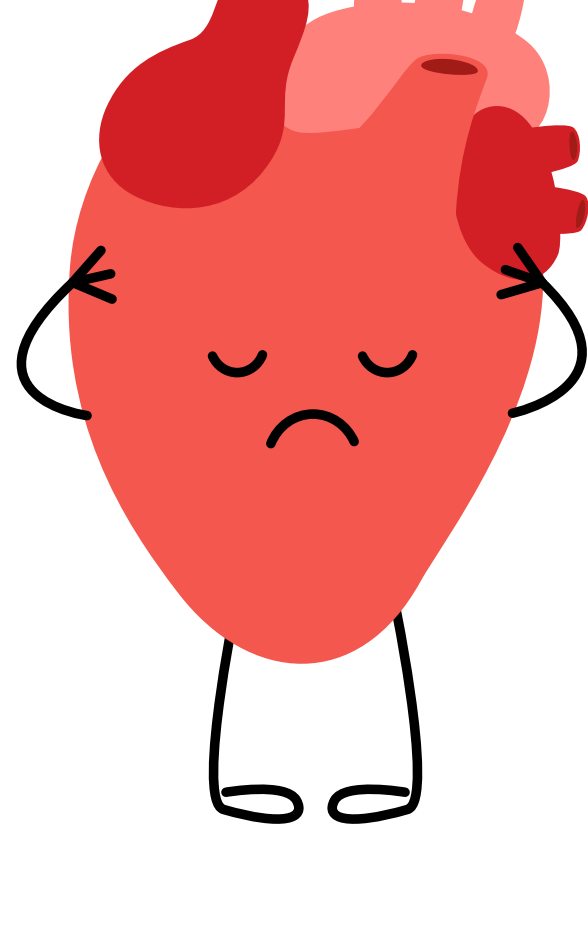
- About 99.5% are noncardiac
 - 60% musculoskeletal
 - 15% respiratory
 - 25% miscellaneous
 - infectious
 - pulmonary
 - gastrointestinal
 - psychiatric
 - hematologic
 - oncologic (mediastinal mass, breast tissue)



- Texidor's Twinge/Precordial Catch Syndrome
 - acute, sudden onset, non-radiating left-sided chest pain in an adolescent
 - exacerbated during inspiration and resolves in a few minutes

Serious Presentations

- If ill-appearing, consider:
 - myocarditis
 - cardiac failure
 - pericarditis
 - Kawasaki
 - rheumatic heart disease
 - cardiac failure



Normal EKG in children

- HR greater than 100; marked sinus arrhythmia; RVH from high pulmonary pressures (normalizes at around 6 months); transient Wenckebach during sleep
- Dominant R wave; RSR pattern in V1; peaked P waves
- Short PR interval (less than 120 ms) and QRS duration (less than 80 ms); Q waves in inferior and left precordial leads; QTC less than 6 months: 490 ms
- All of the above reach adult values by 13 years old
- T waves; usually upright in most leads for the first 7 years; downwards until adolescence; T wave inversions in V1-3 ("juvenile T-wave pattern"); notched T waves normal in V2 and V3



INTERVENE

DO

- ABCs, features of hemodynamic compromise, and compromised cardiac output (failure)
- Use fluids judiciously - about 10 ml/kg bolus or maintenance fluids
- Consider inotropes and vasopressors early on if required
- Consider fever, pain, dehydration, agitation, anxiety, crying, and medication effects while evaluating heart rate; re-evaluate regularly

DO NOT

- Routinely obtain chest x-rays or EKGs if the clinical examination is suggestive of noncardiac etiology
- Obtain troponins, D-dimers, coagulants, brain natriuretic peptides (BNP), and fibrinogen routinely, unless otherwise indicated

DISPOSITION

Benign Causes

Serious

Presentations

Depends on clinical status and response to therapy

PEM NUGGETS

- For every 1°C rise in temperature, heart rate rises by approx 10 bpm.
- Tachycardia is the earliest manifestation of shock in a pediatric patient.
 - Tachycardia worsening after a fluid bolus is suggestive of cardiac failure.
 - Cardiac disease in an otherwise healthy child who appears clinically well is very rare.

