PAEDIATRIC ACUTE CARE GUIDELINE	
Chest Pain	
Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

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Chest Pain

Background

- There are many causes of chest pain in children, but less than 5% are due to cardiac or other life threatening disease.
- In adolescents, most presentations with chest pain are psychosomatic or no cause is found.
- Management is related to the underlying cause.

Assessment

Could there be a Cardiac Cause?

Symptoms & Signs for Cardiac Disease

- First episode of pain
- Pain radiating to arm or back
- Associated dizziness or collapse
- History of cardiac, clotting, connective tissue or Kawasaki's disease
- Long standing diabetes mellitus
- Cocaine or other stimulant use
- Abnormal pulse or blood pressure

Congenital Heart Disease

- Can directly cause pain but more often causes arrhythmias or heart failure

Ischaemic Heart Disease

- Presentation is similar to adult angina

Pericarditis

- Pain relieved on sitting forward
- Widespread “saddle-shaped” ST elevation on ECG

Myocarditis

- Usually after a viral illness
- Suspect if there is a history of dizziness/collapse or if there is a tachycardia that does not respond to fluid boluses
- The CXR and ECG may be normal or have only non specific changes but cardiac enzymes are usually elevated

Endocarditis

- Consider if there is fever with a new murmur , but remember innocent flow murmurs are more common

Aortic Dissection

- Patients with connective tissue diseases or congenital aortic root abnormalities are at risk
- The typical pain is “tearing” and radiates to the back
- There may be a difference between blood pressure in each arm
- As this is a dissection not an aneurysm, the mediastinum may not be wide on CXR

Could this be a Pulmonary Embolus?

Risk Factors for Pulmonary Embolus

- Immobility or recent surgery
- Neoplasm
- Hypercoaguability
- Central venous catheter
- Pleuritic pain
- Haemoptysis
- Hypoxia

- The most frequent symptoms are pleuritic pain, dyspnoea, apprehension, cough and haemoptysis
- The most frequent signs are tachypnoea and tachycardia

Can another Specific Diagnosis be Made?

Respiratory

Pneumothorax

- Classically occurs in young thin adolescents after coughing or a Valsalva manoeuvre

Acute chest syndrome

- Consider if there is cough, fever in a patient with sickle cell disease

Exercise induced asthma

- There are usually other features of asthma present

Foreign Body

- Consider if history of choking episode, colour change, persistent wheeze of unilateral signs

Pneumonia/Pleurisy

- Associate fever, cough, crackles, consolidation

Musculoskeletal causes

- The hallmark of musculoskeletal pain is well-localised pain that can be reproduced with a simple movement (not exercise), inspiration or palpation
- An association with trauma or overuse may not always be obvious

Slipping rib syndrome

- Ribs 8 to 10 (which are not directly attached to the sternum) may slip superiorly to impinge on intercostal nerves
- There is often a sharp pain followed by a dull ache
- Pain may be reproduced by a “hooking manoeuvre” – pulling the lower rib edge superiorly and anteriorly

Costochondritis

- Costochondral joints become painful and tender
- Intercostal muscle strain

Precordial catch

- Classically, several seconds of severe chest and back pain occur, often when moving form slouching posture

- Treatment of musculoskeletal causes involves a reassurance, rest, and simple analgesia or non-steroidal anti inflammatory medications
- Athletes with recurrent overuse injuries may benefit from a sports medicine referral

Gastrointestinal Causes

Gastroesophageal reflux

- Exacerbated by food or lying flat (often on going to bed)

Ingested foreign body

Miscellaneous Causes

Breast tenderness

- Related to hormonal changes at puberty or with pregnancy

Shingles (pre rash)

Trauma

Is There A Serious Underlying Psychiatric Cause?

- In some studies, up to 10% of adolescents with chest pain may have a serious underlying psychiatric cause
- Most presentations with chest pain are psychosomatic or no cause found

Risk Factors for Serious Psychiatric Disease

- Lowered affect or lack of motivation

- Hypervigilance
- Hyperventilation
- Social withdrawal
- Impairment of function at school

Depression

- Look for irritability, lack of motivation and alteration of appetite or sleep pattern

Panic Attacks

Somatoform Disorders

- Rare cases where excessive concern about chronic symptoms causes significant functional impairment

Features Suggesting Psychosomatic Pain

- Vague symptoms of varying nature, intensity and pattern
- Multiple symptoms at the same time
- Chronic, intermittent course with apparently good health
- Exacerbation by stress

The Emergency department approach to patients with psychosomatic chest pain is to:

- **Reassure** that serious illness is unlikely and no further investigations are needed
- **Relaxation** and stress relief should be encouraged
- **Refer** to General or Adolescent Paediatric Teams – as symptoms persist in one third, and the level of symptomatology and functional distress often increase
- **Reconsider** organic illness if patients present with new symptoms

Tags

asthma, breast, cardiac, chest pain, embolus, gor, pain, pleurisy, pleuritic, pneumonia, pneumothorax, psychosomatic, radiating, respiratory, rib

References

PMH ED Guidelines: Chest Pain - Last updated October 2014

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