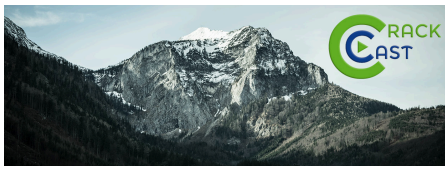


Chapter 25 – Dyspnea

Episode overview:

1) List 10 critical causes of dyspnea

Wisecracks:

1) Outline your approach to the acutely dyspneic patient
2) Name 6 uncommon causes of dyspnea

Rosen's in Perspective

"Dyspnea": uncomfortable sensation of breathlessness. "Air hunger"

- Non-specific spectrum from mild disease to severe disease
- May be referred to as different terms

➢ ***Other terms to know***

Tachypnea − RR > normal → >45-60 bpm in neonates; to >18 bpm in adults
Hyperpnea – Greater than normal minute ventilation to meet metabolic requirements
Hyperventilation – Minute ventilation exceeding metabolic demand

- ABG showing normal PaO_2
  + Uncompensated respiratory alkalosis
  + Elevated pH

Dyspnea on Exertion (DOE) – Dyspnea provoked by physical effort
Orthopnea – Dyspnea in a recumbent position
Paroxysmal Nocturnal Dyspnea (PND) – Sudden SOB at night

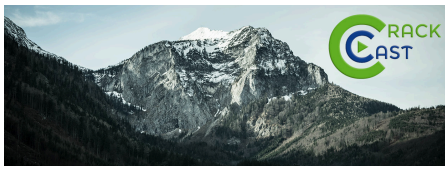
➢ ***Pathophysiology***

- Normal breathing controlled by:
  - Centrally by the respiratory centres in the medulla oblongata
  - Peripherally by the chemoreceptors in the carotid bodies
  - Mechanical centres in the diaphragm and skeletal muscles

- Any imbalance in these sites leads to dyspnea – mechanism not fully understood

Perception of dyspnea relates to*:*

- ***Increased lung resistance***
  - *COPD or Asthma*
- ***Increased respiratory drive***
  - *Severe hypoxemia, acidosis, centrally acting toxins, or CNS events*



1) List 10 critical causes of dyspnea

First key question:

- ***Is the dyspnea cardio-pulmonary OR toxic-metabolic?***

Differential - see table 25-1
CRITICAL CAUSES:

Pulmonary

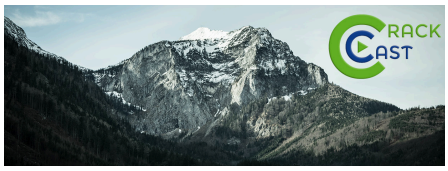
1. **Airway obstruction**
    a. Heimlich maneuver & direct laryngoscopy with McGill forceps
2. **Pulmonary embolism**
3. **Non-cardiogenic pulmonary edema**
4. **Anaphylaxis**
5. **Respiratory failure**
6. **Tension pneumothorax +/- flail chest**
    a. Severe respiratory distress, hypoxia, hypotension
    b. Decreased breath sounds, oxygen desaturation

Cardiac

1. **Pulmonary edema (due to CHF)**
2. **Myocardial infarction**
3. **Cardiac tamponade**

Other

1. **Toxic ingestions (e.g. organophosphate ingestion)**
2. **DKA**
3. **Epiglottitis**
4. **CO poisoning**
5. **Acute chest syndrome (e.g. Sickle cell)**
6. **CVA / intracranial catastrophe**



Wisecracks

1) Outline your approach to the acutely dyspneic patient

Management and disposition

- Dyspnea requires simultaneous evaluation and management
    - Use the MOVIE approach and initiate empiric treatments based on:
        - Trauma
        - Anaphylaxis
        - Foreign body
        - Infectious causes
        - Cardiac causes (dysrhythmia, ischemic, CHF)
        - PE
        - Asthma / COPD

Signs & Ancillary Studies

See table 25-2-4.

- Full set of vitals, patient's general appearance, skin/nail findings
- Neck, lung, chest, cardiac, extremities and neuro exam can assist with diagnosis
- Tests to consider:
    - Vitals with SPO_2 **however** know when it is unreliable
    - ABG
    - ECG
    - Beside U/S
    - CXR
    - Labs - rule out anemia, infection, electrolyte abnormalities, or renal failure
        - WBC is of little sensitivity or specificity
        - BNP, troponin, and D-dimer may be of some use
    - Soft tissue lateral neck - for upper airway processes
    - CT chest for intra-thoracic causes (PE, pneumonia, etc.)

2) Name 6 uncommon causes of dyspnea

- Valvular heart disease
- Cardiomyopathy
- Mechanical interference (pregnancy, ascites, obesity, hiatal hernia)
- Ruptured diaphragm
- Thyrotoxicosis
- **Guillain-Barre syndrome**
- Tick paralysis
- MS
- ALS
- Polymyositis
- Porphyria