

The Breathless Adult Patient

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Definition

BREATHLESSNESS = Shortness of breath
= Dyspnoea

A **subjective** sensation of difficult, laboured or uncomfortable breathing.

Only **you** know how it feels for you to be breathless.

It is invisible to others.

Breathlessness

Physiological

During exercise.

Pathological

When it occurs with little or no exertion.

Case 1

- 48 yr old female nurse – C. unit
- ↑ SOB over last 2-3 mnths especially on walking upstairs. No chest pain.
- Exercise ECG: normal

Case 1

- O/E: Pale
- Hb 8.0 g/dL

Case 2

- 56 yr old Co. Director.
- Known hypertensive on Amlodipine.
- Gradual onset of SOB over last 6 weeks.
- Mild bilateral pedal oedema → Amlodipine
- B.P – 140/90 mm Hg

Case 2

On Examination:-

- Dyspnoea at rest.
- ↑JVP
- Bilat. ankle pitting oedema.

Case 2

Investigations:

CXR : N

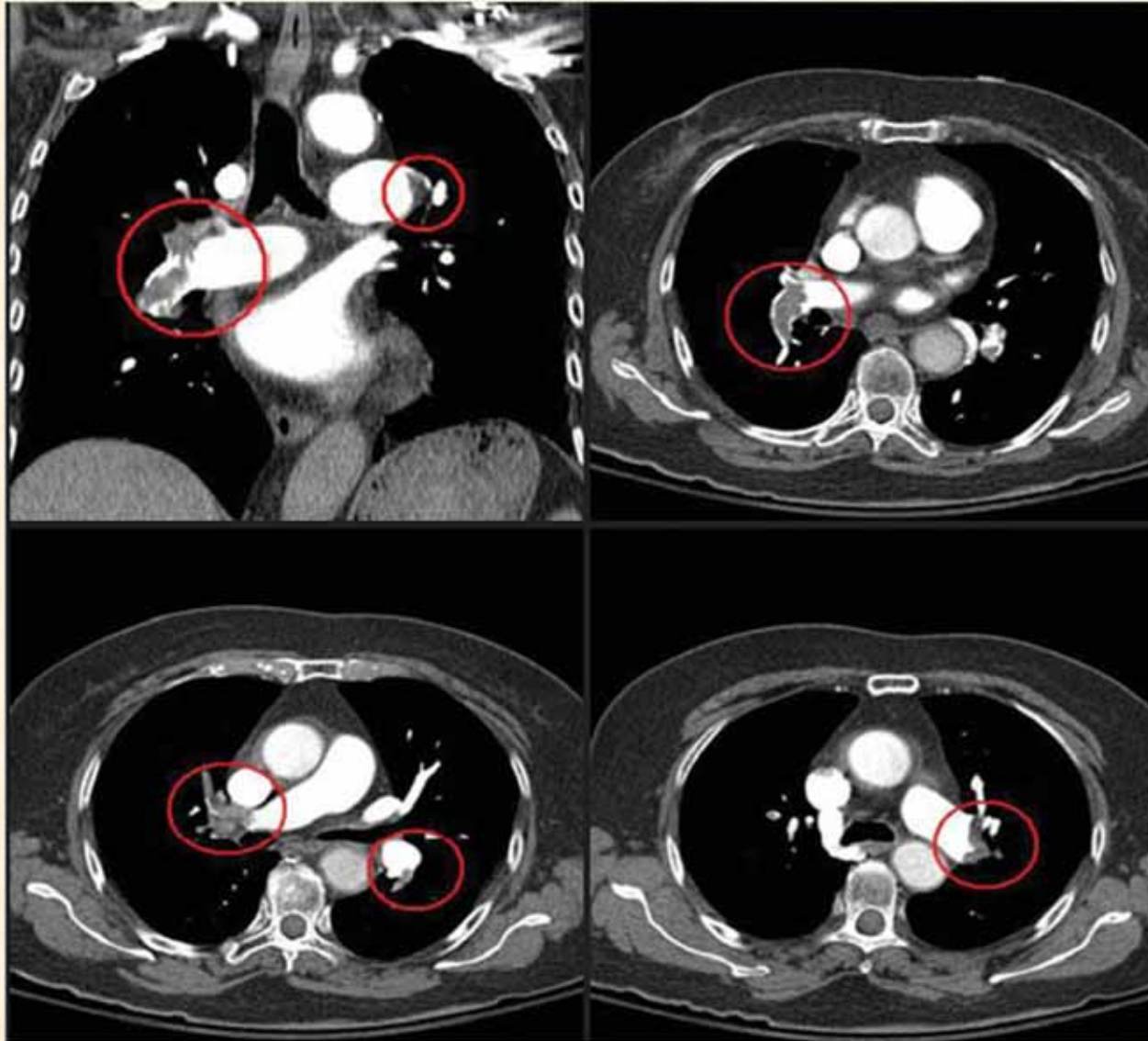
Echocard.: N

SpO₂: 89% at rest.

CT scan Thorax



CT scan Thorax



Case 3

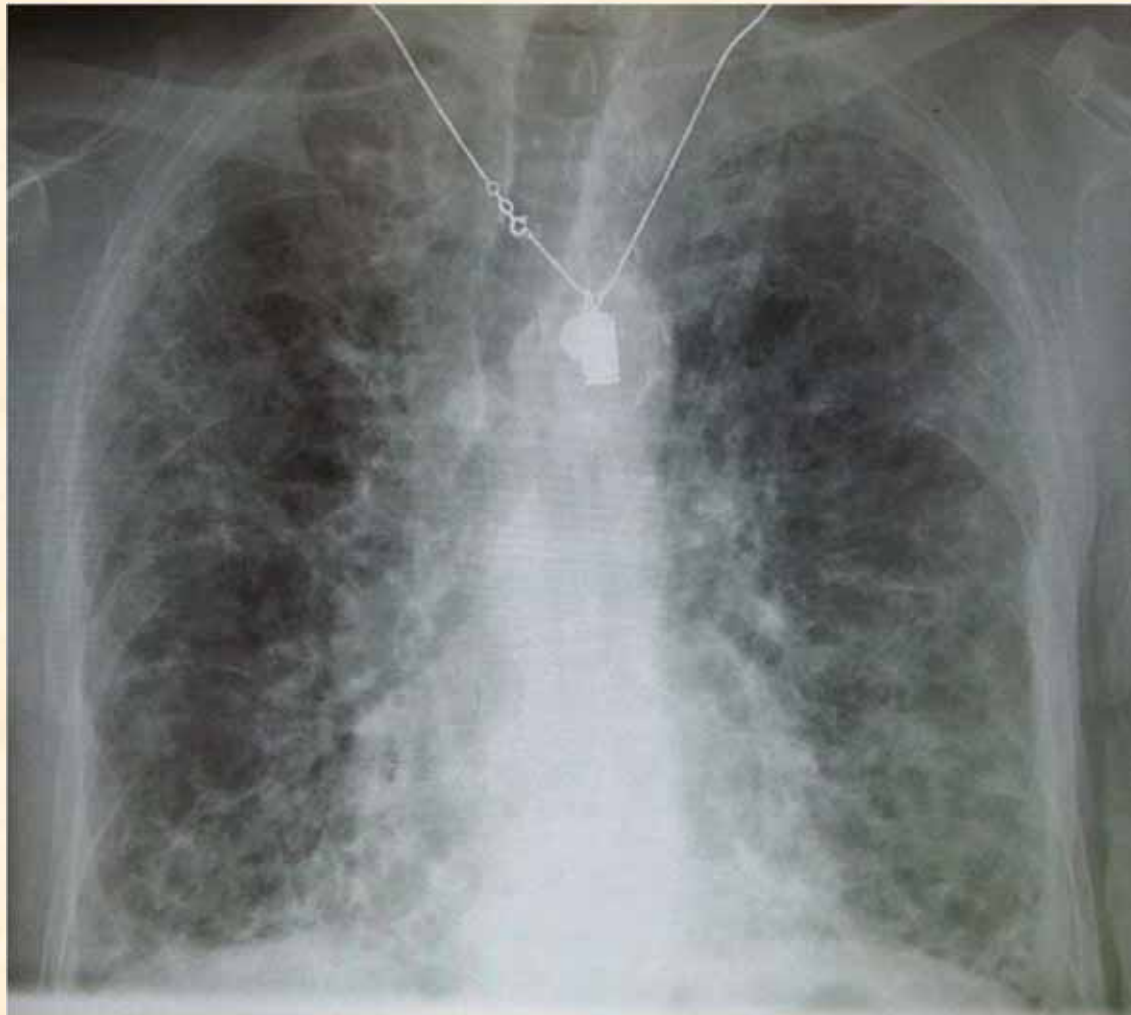
65 yr old female

- Recurrent admissions with SOB over last 3 yrs
- Bilateral basal crackles
- PMH : Inferior Myocardial Infarct 10 yrs ago
- Treated with IV Frusemide (Δ ? LVF)
- Initially with success
- But lately in vain

Case 3

DH: On Amiodarone since previous M.I

Chest X-Ray showing Pulmonary Fibrosis



Case 4

18 yr old female student

- C/o severe “breathlessness” on & off x 1 day
- Δ Acute asthma
- Treated with
 - O₂.
 - Nebulised Salbutamol.
 - Steroids.

Case 4

- No better.
- C/o “pins-needles” around lips and finger tips.

Case 4

- ABG on air:-
 - pH = 7.52
 - PaCO₂ = 28 mmHg
 - PaO₂ = 110 mmHg
 - HCO₃ = 22 mEq/L
 - Base Excess = +1
- Respiratory Alkalosis due to Hyperventilation Syndrome.

Case 5

- 65 yr old male
 - SOB x last 2-3 weeks
 - PMH – Type II Diabetes
 - HBP
 - BP 150/90
 - RBS (glucometer) – 8 mmol/L
 - Treated with IV Frusemide (Δ ? LVF)
 - No better

Case 5

- ABG on air :-
 - pH = 7.24
 - PaCO₂ = 29 mmHg
 - PaO₂ = 98 mmHg
 - HCO₃ = 14 mEq/L
 - Base excess = -13
- Urea = 40 mmol/ L
- Creatinine = 1000 μmol/ L
- Metabolic Acidosis

➤ Importance of :-

History -

- (a) Age
- (b) Occupation
- (c) Tobacco history
- (d) Acute / Chronic

Examination.

Appropriate Investigations

Causes of Dyspnoea

- Pulmonary.
- Cardiac.
- Drugs.
- Others.

Pulmonary

- Asthma.
- COPD
- Infection- Pneumonia.
Bronchiectasis
- Pneumothorax.
- Pulmonary Embolism
- Pleural effusion.
- Malignancy.
- Interstitial lung disease.
- Kyphoscoliosis.
- Aspiration / Inhalation of foreign bodies.
- Pulmonary Hypertension.

Cardiac

- CCF
- CAD
- Arrhythmia
- Pericardial effusion
- Valvular disease
- etc

Drugs

- β -blockers.
- Amiodarone.
- Methotrexate.
- Aspirin overdose.

Others

- Anaemia
- Metabolic Acidosis.
- Neuromuscular.
- Anxiety / Hyperventilation.

Breathlessness

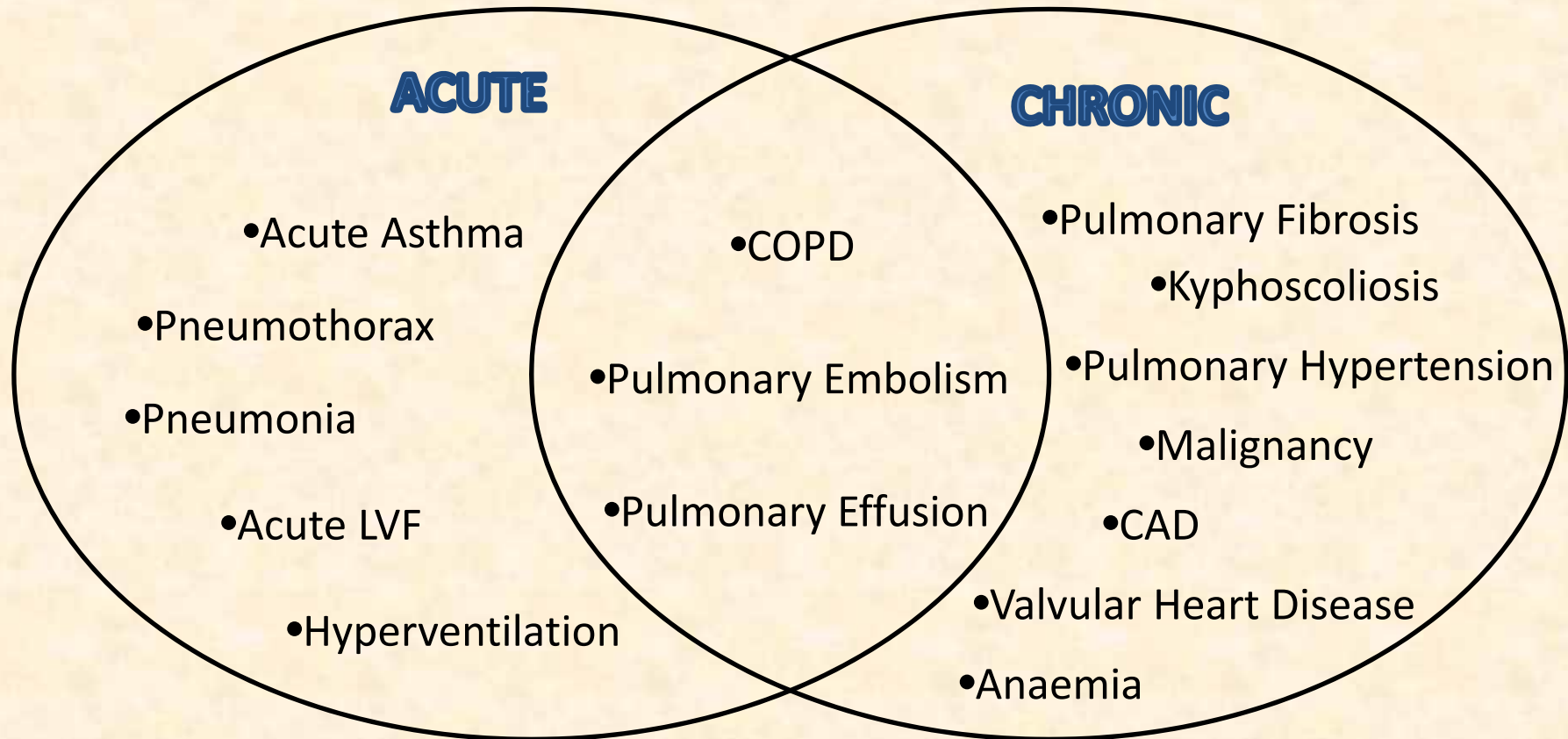
Is it? :-

Acute

Or

Chronic (> 1 month)

Breathlessness



Clinical Clues for the diagnosis

CCF

- H/O cardiac disease.
- Orthopnoea / P.N.D
- On Examination:
 - ✓Tachycardia.
 - ✓ ↑ JVP
 - ✓ Bilateral basal creps
 - ✓ Ankle oedema

Asthma

- Associated cough / allergic symptoms.
- Nocturnal symptoms.

Pulmonary Fibrosis

- Long history.
- ? Occupational history.
- Clubbing.
- Bilateral basal fine crackles.

Metabolic Acidosis

- “Air hunger”.
- Normal SpO₂.
- ?Diabetes ?Renal Failure.

Spontaneous Pneumothorax.

- Acute onset of symptoms
(chest pain + SOB)
- Unilateral.

Clues to the diagnosis of Dyspnoea

Symptoms or features in history	Possible Diagnosis
1.Cough	Asthma, Pneumonia
2.Pleuritic chest pain	Pneumonia, Pneumothorax, Pericarditis, Pulmonary Embolism.
3.Orthopnea, P.N.D	CCF
4.Cigarette use	COPD
5.Indigestion, Dysphagia	Gastroesophageal reflux, Aspiration

Physical Examination findings in the diagnosis of dyspnoea

Findings	Possible Diagnosis
1.Wheezing, use of accessory muscles	Acute exacerbation of Asthma / COPD
2.Cyanosis, ↑ JVP, bilateral basal crackles	CCF
3.Fever, pleural rub, crackles	Pneumonia
4.Absent breath sounds, hyperresonance	Pneumothorax
4.Stridor	Upper airway obstruction

Investigations

➤ Initial :-

- CXR
- ECG
- SpO₂
- FBC
- Spirometry

➤ **Further Tests:-**

- Full Pulmonary Function Tests
- CT scan Thorax ± Angiogram
- Echocardiography
- Exercise ECG
- D- Dimer
- 24 hr Holter monitor
- Right heart catheterisation
- BNP

Conclusion

- Good history taking and examination lead to the most probable diagnosis.
- Appropriate investigations to confirm the diagnosis.

Thank You