

# Respiratory

10

DECEMBER 2011

Saturday

٣٠ هاتور ١٧٢٨

دیسمبر ٢٠١١  
Cough

السبت

١٥ محرم ١٤٣٣ هـ

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

21>344

A) Dry Cough No sputum B) productive cough <sup>٣٤٤</sup> Sputum

08

Causes

09

A) Dry cough

• Asthma

• Atypical pneumonia

• Bronchogenic carcinoma

• Interstitial lung disease.

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Chlamydia  
psittaci

Legionella

Mycoplasma

pneumonia

11

• Canini

• Jiroueci

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B) productive cough

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• Bronchiectasis

• Infective exacerbation of COPD

• Lung abscess

• pneumonia //, pulmonary oedema

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• Tuberculosis

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Other classification of cough

16

Acute

• Asthma

• Allergy

• Drug side effect

17

Week 50

• Foreign Body

Chronic

• Bronchiectasis

• COPD

• Interstitial lung disease

• Lung cancer

• TB

①

✗

9

DECEMBER 2011

Dry cough

ديسمبر ٢٠١١

9

Friday

الجمعة

٢٩ هاتور ١٧٢٨

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١٤ محرم ١٤٣٣ هـ

22 343

1) Asthma

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2) Atypical pneumonia

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a) Chlamydia psittaci . History of contact with birds  
 . Dry cough

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Week 49

الأسبوع ٤٩

23 &gt; 342

٢٤٢ &lt; ٢٣

### 3) Bronchogenic carcinoma

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- Elderly patient • smoking history
- Anorexia, weight loss, fatigue • Haemoptysis

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1.

### 4) Interstitial lung disease

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History of working in a coal mine  
pharmaceutical company or exposure to  
dust dt. occupation

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productive cough

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### 1) Bronchiectasis

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- History of cystic fibrosis
- History of recurrent chest infection  
leading to localized and irreversible dilatation  
of airways
- productive cough with green/yellow sputum  
in the morning. (purulent sputum)

Week 49

## 2) Infective exacerbation of COPD

- History of smoking
- middle aged ♂ 35-55 years
- Fever, cough, sputum
- Shortness of breath.

## 3) Lung abscess

- History of alcoholism (Aspiration)
- Swinging pyrexia
- purulent sputum
- If there is cavitation → haemoptysis

## 4) pneumonia

- Cough, fever, shortness of breath
- pleuritic chest pain - worsens on inspiration
- Rusty brown sputum
- X-Ray Consolidation

- ## 5) TB
- patient from Asia, Africa, homeless UK pt.
  - HIV pt (homosexual, IV drug abuse)
  - Weight loss, Night sweats, chest pain
  - Haemoptysis, Lymphadenopathy.

HIV + Weight loss + purulent sputum → TB

HIV + Weight loss + dry cough → pneumocystis

Coinc pneumonia





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- pinky frothy sputum = pulmonary oedema
- = clear sputum with hinge of blood Lt. Ventricular Failure

- Mucoid rusty brown sputum = pneumonia

- purulent sputum = Bronchiectasis • Lung abscess
- Staph. aureus pneumonia

Haemoptysis = coughing of blood

### Causes

- Anti coagulant e.g warfarin
- Bronchogenic carcinoma
- Goodpasture's syndrome
- Lung abscess
- pulmonary oedema
- pulmonary Embolism
- TB

26 &gt; 339

## Goodpasture's Syndrome

٢٣٩ &lt; ٢٦٦

08

• Young patient

09

• Autoimmune disease

• Antibodies against basement membrane of the alveoli (lung) and glomerulus (kidney)

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Haemoptysis

Renal symptoms

11

Symptoms

• Haemoptysis • proteinuria

• Haematuria

12

## pulmonary oedema

13

• History of valvular heart disease e.g. left ventricular failure

• Productive cough with pink frothy sputum

X-Ray

• Bilateral fluffy opacities

• Enlarged heart heart disease

11

# pulmonary Embolism

- Young patient
- usually presents 7-10 days postoperatively or after # of long bones

## Risk factors

- Long flights
- pregnancy
- combined oral contraceptive pills

## ECG findings

- AF
- Right bundle branch block
- Sinus tachycardia
- SIQIII T III Syndrome ???
- T wave inversion V1-V4

N.B

## Fat embolism

- Confusion
- Rash all over the body

# Wheezes

3

DECEMBER 2011

ديسمبر ٢٠١١

٣

Causes  
Saturday

- Asthma ① • COPD ③
- Bronchiolitis ②

السبت

٢٣ هاتور ١٧٢٨

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

٨ محرم ١٤٣٣ هـ

28 > 337

٣٣٧ < ٢٨

08

- Family history of asthma • History of atopy
- Eczema, hay fever

09

- Young patient or child
- precipitating factors dust, exercise, pets, smoking

10

11

- Signs/Symptoms • Wheezes and shortness of breath
- Dry cough at night

12

## ③ COPD infective exacerbation

13

- middle aged male 35-55 years
- History of heavy smoking
- S.S - Fever, cough, wheeze, shortness of breath

14

## ② Bronchiolitis

15

- Common in winters • child less than < 1 year

16

Causative organism RSV (Respiratory syncytial virus)

17

- S/S • Apnoea (shortness of breath) • Cyanosis • Coryza preceded cough
- difficulty in feeding • Intercostal recession
- Low grade Fever • wheezes

Week 49

الاسبوع ٤٩

Ix

- Throat and nose swab
- X-Ray → Hyperinflated lungs

Rx

- Oxygen • Nebulised Salbutamol
- Dexamethasone

2

DECEMBER 2011

Shodor

ديسمبر ٢٠١١

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Friday

الجمعة

٢٢ هاتور ١٧٢٨

٧ محرم ١٤٣٣ هـ

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

٢٩ &lt; ٣٦

29 &gt; 336

Causes

white

08

• Foreign body (Eating)

Adult

09

• Laryngeal oedema

• Laryngeal carcinoma

10

Children

Anaphylaxis

Croup

11

Diphtheria

Epiglottitis

Foreign body

12

Adult

13

1) Laryngeal oedema

13

causes

14

• Anaphylaxis

• House fire (CO poisoning)

14

15

• dt. Leaking gas

• Several family members affected

16

S-S

• Black sputum

• Hoarseness of voice

17

• Singed nasal hair

• Soot in the mouth and nose

• Airway obstruction dt. Laryngeal oedema

Week 48

Rx

General Anaesthesia

الاسبوع ٤٨

+ Intubation

✗

Thursday

الخميس

٢١ هاتور ١٧٢٨

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

٦ محرم ١٤٣٣ هـ

30&gt;335

## 2) Laryngeal Carcinoma

٣٣٥&lt;٣٠

08

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- SS
- Elderly heavy smoker patient
  - Weight loss . Anaemia . Anorexia . Fatigue
  - Pain in the ear . hoarseness of voice

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Children check paediatrics

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Foreign body

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- Unsupervised child playing with toys or coins previously fit and well

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Re. if child is showing shortness of breath → Urgent Laryngoscopy

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If no airway obstruction → Chest X-Ray to check for foreign body in GIT

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↓  
if below diaphragm

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Week 48

الاسبوع ٤٨

Observe for foreign body to pass in stool within 48 hours.

✍

# Hoarseness of Voice

## Notes

ملاحظات

### Causes

- Endocrine causes
- Laryngitis
- Recurrent Laryngeal n. palsy
- Singer's nodule
- Vocal cord paresis
- Functional dysphonia
- Laryngeal carcinoma (as above)
- Voice abuse

### Endocrine causes

- Hypothyroidism Bradycardia, constipation, cold intolerance, weight gain
- Acromegaly weight gain, 1 shoe's increasing size, spaced teeth, protruded Jaw

### Functional dysphonia 2<sup>nd</sup> to vocal inf

- Young anxious female
- Sudden onset triggered by emotions
- Can be exacerbated by Laryngitis

### Laryngitis

- Fever
- Coryza symptoms (running nose, sneezing, cough)

### Recurrent Laryngeal n. palsy

### Causes

- After long term intubation
- After thyroid surgery
- Thyroid carcinoma mainly anaplastic rapidly growing mass in the neck
- Enlarged heart
- Aneurysm

### Rx

Reassure the patient (resolves with time)

### Singer's nodule

- In professional singer or teacher Ix Laryngoscope

### Vocal abuse

- Shouting at a match or class Rx Reassure (No Ix needed)

### Vocal paresis

- Trauma especially after endoscopy



30

NOVEMBER

2011

Wednesday

Causes

Apnea Cessation of breathing

٢٠١١ نوفمبر

٣٠

• opiate overdose

• Breath holding spells (children) الأربعة

٢٠ هاتور ١٧٢٨

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17 18 19 20 21 22 23 24 25 26 27 28 29 30

٥ محرم ١٤٣٣ هـ

31>334

٣٣٤<٣١

Opiate overdose

08

- puncture marks on the arm
- Small pinpoint pupil
- RR < 12 /minute

09

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Rx Naloxone short acting opiate antagonist  
may be given several times

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Breath holding spells  
in children

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- When the child is upset for any reason
- The child stops breathing for some time and may turn blue then spontaneously starts breathing after a short time and within a hour becomes absolutely fine

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Rx Reassure

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29

NOVEMBER 2011

٢٩ نوفمبر ٢٠١١

Tuesday

Orthopnea

الثلاثاء

١٩ هاتور ١٧٢٨

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٤ محرم ١٤٣٣ هـ

32&gt;333

٣٣٣&lt;٣٢

08

09

- Shortness of breath when lying flat
- Usually at night • Sign of heart failure
- patients use 3-4 pillows to help elevate bedside and prevent orthopnea.

Chest pain

10

Respiratory causes

11

- Bronchogenic Carcinoma ① • pneumonia ②
- pulmonary embolism ③ • Tension pneumothorax ⑤
- ④ • pleurisy chest pain after inspiration dt. URTI, pneumonia worsen

Cardiovascular causes

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Week 48

الأسبوع ٤٨

- Acute coronary syndrome • Myocardial infarction
- pulmonary embolism
- pericarditis chest pain worsen after inspiration relieved by leaning forward
- EKG Saddle shaped ST elevation
- Ruptured thoracic aortic aneurysm severe pain radiating to back
- Stable angina pain ↑ by exercise ↓ Rest
- Unstable angina • chest pain at rest and exercise
- ① no relieved by rest

## Miscellaneous Causes

08

- Costochondritis

09

- GERD retrosternal pain when lying flat

10

- Muscular skeletal pain tenderness in chest wall after exercise

11

- Trauma Rib #

12

- Shingles between the ribs as it follows intercostal n.

3

4

27

NOVEMBER 2011

## Pulmonary Embolism

٢٠١١

نوفمبر

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Sunday

الأحد

١٧ هاتور ١٧٢٨

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17	18	19	20	21	22	23	24	25	26	27	28	29	30		

٢ محرم ١٤٣٣ هـ

34 &gt; 331

٣٣١ &lt; ٣٤

• Young &amp; patient

Risk factors

• Long flights • Pregnancy • COCP  
 • 7-10 days post surgery  
 or after # of long bones

Signs

Symptoms

• Sudden chest pain  
 • Sudden shortness of breath  
 • Haemoptysis

Ix

1)

Chest X Ray

Normal

Abnormal

V/Q scan

(ventilation perfusion) scan

exposed to less irradiation so most

appropriate Ix

CT pulmonary angiogram (CTPA)

most definitive Ix

gold standard

better than V/Q scan

Week 48

الأسبوع ٤٨

2) D-Dimer <sup>used</sup> if low probability of PEcontraindication to use

• Intermediate or high risk of PE  
 • Postoperatively

Management

35&gt;330

أول السنة الهجرية

٣٣٠ &lt; ٣٥

08

Well's Score

09

- Active malignancy + 1

- Collateral superficial veins + 1

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- Calf swelling more than 3 cm + 1

- Calf circumference more than 3 cm + 1

11

Compared to other Leg

- Entire Leg swelling + 1

12

- Immobilization more than 3 days + 1

- Pitting oedema + 1

13

- Other diagnosis Likely - 2

4

Low probability

0 or less points

Intermediate probability

1-2 points

High probability

3 or more

Low probability  
patient

٢٢٩ < ٢٢٦

D-Dimer first

-ve

No pulmonary embolism

+ve

pulmonary embolism

Low molecular weight  
heparin

V/Q scan

+ve

Confirmed  
Low molecular  
weight heparin  
+ warfarin

-ve

Stop  
Low molecular  
heparin

الأسبوع ٤٧

Intermediate or high  
probability patient

Start LMWH immediately

V/Q test

-ve  
Stop LMWH

+ve  
LMWH + warfarin

until when INR reaches 2  
then stop LMWH  
and continue warfarin alone  
maintaining INR 2-3

N.B

• In pregnancy → Use LMWH alone  
warfarin is teratogenic

• Maintain INR 2-3



# Tension Pneumothorax

- Common in young tall thin men

## Causes

- COPD
- rupture of large bullae and accumulation of air inside the pleural cavity

## Signs

- ↓ air entry and hyperresonance on one side
- Tracheal shift to the other side
- Engorged neck veins

## Ix

### Chest X-Ray

## Rx

- Needle decompression 2<sup>nd</sup> intercostal space mid <sup>clavicular</sup> line
- wide bore needle or cannula into the intercostal space
- If failed use chest tube placed between 4<sup>th</sup> to 6<sup>th</sup> intercostal space out to mid axillary line
- Just above the rib to avoid neurovascular bundle injury.

Monday

١١ هاتور ١٧٢٨

# Cystic Fibrosis

الاثنين

٢٥ ذو الحجة ١٤٣٢ هـ

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17 18 19 20 21 22 23 24 25 26 27 28 29 30

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- It is autosomal recessive disorder
- The risk of its transfer is 25% ( $\frac{1}{4}$ )
- It is a chloride channel defect

Signs

Symptoms

- Recurrent chest infection
- Meconium ileus
- Rectal prolapse
- pancreatic deficiency exocrine / endocrine / steatorrhea
- Loss of weight - failure to thrive

Ix Sweat test N.  $< 4 \text{ mmol/L}$   
diagnostic  $> 6 \text{ mmol/L}$

complication Bronchiectasis at adulthood (18-30 years)

Rx

Symptomatic

- Reassure - physiotherapy
- Antibiotics in case of recurrent inh.

Sunday

١٠ هاتور ١٧٢٨

COPD

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الأحد

٢٤ ذو الحجة ١٤٣٢ هـ

41>324

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Week 47

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Types

• Emphysema

• chronic Bronchitis

• SOB, chronic cough  
+ Specks of blood

mucoid

mucopurulent sputum

• Affects middle aged males (35-50 years)

+ long standing history of smoking

Chest X-Ray hyperinflated chest (>6 ribs above diaphragm)  
midclavicular line

Ix

Respiratory function tests

In CBC ↑ PCV (polycythemia) dt hypoxemia

Rx

• Steroid inhaler + Bronchodilator

• pt. usually develops type 2 respiratory Failure

• Don't give 100% oxygen

• Give 24% oxygen by venturi mask

Do ABG

IF  $CO_2 \uparrow$  on 28% oxygen  
reduce to 24%

N.B

Type 1 respiratory failure  $O_2 < 8$  /  $CO_2$  normal  
or Low  
الأسبوع ٤٧

Type 2 respiratory failure  $O_2 < 8$  /  $CO_2$  high  
(>6)

Saturday

٩ هاتور ١٧٢٨

Aspergillus

السبت

٢٣ ذو الحجة ١٤٣٢ هـ

42>323 Causative organism Aspergillus clavatus ٣٢٣<٤٢

SS . Intermittent shortness of breath  
 . Causes extrinsic allergic alveolitis  
 . Can cause asthma

Rx Antifungal e.g Amphotericin

Lung cancer

. Affects elderly patients with chronic history of smoking

Types

- 1) Bronchogenic carcinoma ✓
- 2) Squamous Cell carcinoma hypercalcaemia
- 3) Small Cell carcinoma → Cushing syndrome



SS . Anorexia . Anorexia . Fatigue  
 . Haemoptysis . Shortness of breath  
 . Weight loss  
 Rx . Bronchoscopy + biopsy → Bronchogenic carcinoma  
 . CT → Carcinoid

## Complication

18

NOVEMBER 2011

paraneoplastic syndrome → autonomic neuropathy

٢٠١١

نوفمبر

١٨

Friday

eg Urinary retention, postural hypotension

الجمعة

٨ هاتور ١٧٢٨

diminished reflexes, sluggish pupillary reaction

٢٢ ذو الحجة ١٤٣٢

17 18 19 20 21 22 23 24 25 26 27 28 29 30

Brachiectasis

٣٢٢ < ٤٣

• permanent dilatation of the bronchi

Causes • Cystic Fibrosis • Recurrent chest inf.

SS

- Chronic cough
- Chronic purulent sputum
- Intermittent haemoptysis

Ix

High resolution CT Scan

Rx

- postural drainage
- physiotherapy
- Antibiotics if chest infection

17

NOVEMBER 2011

Dyspnea (Shortness of breath)

نوفمبر ٢٠١١

١٧

Thursday

الخميس

١٧٢٨ هاتور

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٢١ ذو الحجة ١٤٣٢ هـ

Types

44&gt;321

1) Acute

08

• Anxiety

• Anaphylaxis

09

• Asthma

• CO poisoning

10

• Exacerbation of COPD

• Foreign body

11

• Myocardial infarction

• pneumonia

12

• pneumothorax

• Pulmonary oedema (Lt. ventricular failure)

13

• pulmonary embolism

2) Chronic

٣٢١&lt;٤٤

• Bronchogenic carcinoma

• COPD

• Cor pulmonale (Rt. ventricular failure)

• Chronic anaemia

• Chronic Lft. failure

• Mesothelioma

• Sarcoidosis

• TB

12

13

# 1) Anxiety panic attack

09

• Young female with history of previous panic attack

10

S.S

• Shortness of breath with difficulty to take deep breath

11

• palpitation and feeling to have heart attack and going to die

12

• periorbital paraesthesia

• Numbness and tingling in the hands

13

dt.  $\downarrow$  Ca dt. hyperventilation  
and  $\text{CO}_2$  wash out

Rx

Breathing into paper bag  
during the attack

10



46&gt;319

٣١٩&lt;٤٦

## 2) Anaphylaxis

- SS
- Facial flushing • Facial swelling
  - Swelling of the tongue and cheek
  - Stridor • Shortness of breath dt. laryngeal oedema
  - Hoarseness of voice • Shock → Low BP, tachycardia
  - Wheezes
  - + Urticaria (Allergic rash)

Rx IM Adrenaline 1:1000 concentration  
in anterolateral aspect of the thigh

## 3) CO poisoning

- After gas leak, house fires
- Multiple family members are affected.

S-S

- Black sputum • Black soot in the
- Singed nasal hair • hoarseness of voice
- Airway obstruction dt. laryngeal oedema

Rx General Anaesthesia  
Intubate

الأسبوع ٤٦

## ④ Foreign body

08

Presentation

09

• Well and healthy child playing with toys or coins unsupervised presents with Sudden SOB

10

• Adult while having meal

11

Rx

12

• If pt. present with SOB → Urgent Laryngoscopy

12

• No symptoms of obstruction → Chest X-Ray

Observe for it to pass ← Foreign body below diaphragm = in GIT

13

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## ⑤ Myocardial infarction

15

• middle aged or elderly patient

16

S.S

• Central crushing chest pain radiating to the neck or Lt arm ①

17

③ • Nausea and Vomiting

Week 46

② • Shortness of breath in case pulmonary oedema

④ • Sweating usually in the palms

Sunday

٣ هاتور ١٧٢٨

Enlarged neck  
veins

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17 18 19 20 21 22 23 24 25 26 27 28 29 30

الأحد  
١٧ ذو الحجة ١٤٣٢ هـ

48>317

08

09

• Young, thin and tall patient

S-S

- Sudden onset of chest pain
- Sudden onset of Shortness of breath
- No history of trauma
- Suddenly while exercising

It X-Ray

History of  
Tobacco  
Smoking

Chronic

① Cor pulmonale Rt. Ventricular Failure

Causes

Rt. Ventricular Failure dt.

COPD, pulmonary ~~embolism~~ <sup>oedema</sup>, pulmonary hypertension

S-S

- ① ↑ JVP
- ② Shortness of breath
- ③ Enlarged Liver
- ④ Ascites
- ⑤ peripheral oedema

Week 46

الأسبوع ٤٦

49&gt;316

٣١٦&lt;٤٩

## ② Chronic Anemia

Risk factors  
(History)

- Long term use of NSAID"  
e.g. ibuprofen
- Long term use of aspirin for  
Chronic Ht. disease and stroke
- History of perrectal bleeding
- History of heavy periods

S.S

- Weakness
- Fatigue
- Shortness of breath
- Palpitations
- Light headedness

Ix FBC

Rt. + Lt.  
ventricular failure

## ③ Chronic heart disease Congestive Heart Failure (CHF)

Lt. Ventricular  
failure

→ Pulmonary edema  
Shortness of breath

Rt. ventricular  
failure

- Engorged neck veins,  
• ↑ JVP • Shortness of breath
- Ascites • Enlarged liver <sup>الأسبوع ٤٦</sup>
- ① • peripheral edema

Week 46

50>315

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Week 45

(4) Mesothelioma Leads to bronchial carcinoma

Causes Asbestos exposure eg Shipyard workers  
builders

Findings • pleural effusion • pleural plaques

Ix ①. pleural Biopsy ②. CT

Blood stained

(5) Sarcoidosis Löfgren Syndrome  
• Bilat. hilar Lymphadenopathy

S.S • Chronic shortness of breath • ②. polyarthralgia  
③. Erythema Nodosum Lower limbs rash

Ix • ↑ Serum calcium and ACE  
• chest X-Ray Bilat. hilar Lymphadenopathy  
CT pleural effusion and thickening

(6) Aspergillus = extrinsic allergic alveolitis

Cause Aspergillus fungus (Farmers)

S.S • Intermittent shortness of breath • الأسبوع ٤٥  
• asthma - Extrinsic allergic reactions  
• Fever • malaise • Severe weight loss

Rx Amphotericin

N.B • common in immunocompromised patients • ↓ neutrophil count  
X-Ray Aspergilloma Fungal ball in cavitated space

51&gt;314

08

## ⑦ Cryptogenic Fibrosing alveolitis

٣١٤&lt;٥١

09

- Idiopathic (Cause unknown)
- Bilateral progressive Fibrosis of the Lungs.

10

- Usually affecting pt. on exercise hypoxic on exercise

11

2

I<sub>x</sub> X-Ray  
Chest

- reticular nodular shadowing
- Honey combing (Late stage)

12

3

R<sub>x</sub> Steroids

13

14

Chest  
infection

Pneumonia

LRTI

NOVEMBER 2011

نوفمبر ٢٠١١

Wednesday

الأربعاء

٢٩ بابه ١٧٢٨

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22 23 24 25 26 27 28 29 30

١٣ ذو الحجة ١٤٣٢ هـ

52>313

08

٣١٣<٥٢

٠٨

Symptoms Fever, <sup>عيد الأضحى المبارك</sup> cough, chest pain  
Sputum, Shortness of breath

09

Ix Chest X-Ray Consolidation  
Sputum culture

10

Rx Antibiotics (empirical Rx)

11

Specific pneumonias

12

① Aspiration pneumonia

14

- Alcoholic patient
- Dysphagia patient

15

- motor neuron disease
- Parkinsonism
- Stroke

16

17

- Aspiration pneumonia
- Atypical community
- Hemophilus
- Hospital
- Klebsiella
- pseudomonas
- Staph
- TB

٤٨ ٤٩ ٥٠ ٥١



Tuesday

الثلاثاء

٢٨ بابه ١٧٢٨

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22 23 24 25 26 27 28 29 30

١٢ ذو الحجة ١٤٣٢ هـ

53>312

08

② Atypical pneumonia

عبد الاضحى المبارك

Rx  
except  
②

Clarithromycin  
or erythromycin  
or tetracycline

a) Chlamydia psittaci

09

- people in contact with birds
- Dry cough

10

Ix Chest X-Ray

Rx Tetracycline or clarithromycin

11

b) Legionella

12

- History of travelling abroad or staying in a hotel

13

SS • Confusion • Dry Cough • Diarrhea  
(HYPONATREMIA)

14

Ix Chest X-Ray patchy consolidation  
Urine antigen

15

Rx • Clarithromycin or erythromycin

16

17

54>311 Mycoplasma pneumoniae

عبد الأضحى المبارك

Military

٢١١<٥٤

• Dry cough • Flu like symptoms

Ix Chest X-Ray patchy consolidation

// Cold agglutinin test positive (clotting of RBCs)

Rx Clarithromycin (erythromycin) or tetracycline

d) pneumocystosis

Carini, Jansen

• HIV patient •

S.S

• Dry cough • weight loss • lymphadenopathy  
• Low CD count

Ix

Chest X-Ray perihilar interstitial shadowing  
↓ CD4 count

Rx

Cotrimoxazole

N.B if ↓ CD4 count < 200 give prophylaxis

الأسبوع ٤٥

against  
pneumocystis  
Carini

e) Chlamydia

pneumophila

①

### ③ Community acquired pneumonia <sup>عبد الأضاحى المبارك</sup> Commonest

Causative organism Streptococcal pneumonia (Pneumococcal) G+ve Diplococci

N.B

pt. with pneumococci after recovery develop Herpes Labialis or sore throat

Ix

Chest X Ray Consolidation

Rx

Amoxicillin

@ Co-Amoxiclav @ Benzylpenicillin

④ Haemophilus influenza  
(Gram +ve bacilli)

On top of COPD and Bronchiectasis

Ix

Chest X Ray Consolidation

Rx

Clarithromycin

@ Erythromycin

@ Tetracycline

## 5 Hospital acquired pneumonia

وقفه عيد الأضحى المبارك

G-u-b-a-c-i-l-i E-coli, Klebsiella and proteus

@ pseudomonas @ staphylococcal

## 6 Klebsiella

• Alcoholic, diabetics and elderly

I Chest X Ray upper lobe cavitation

R Cefotaxime @ Imipenem

## 7 pseudomonas Aeruginosa

• On top of COPD and Bronchiectasis

I Sputum Culture

R Ciprofloxacin

Antipseudomonas

Meropenem

??

57>308 8) Staphylococcal pneumonia coagulase +ve

- On top of viral infection  
e.g. Influenza, URTI

Ix Chest X-Ray : Consolidation lobar  
Bilateral basal cavitation

Rx • Flucloxacillin  
• MRSA resistant Vancomycin

9) TB  
• HIV patient

S.S • Fever, night sweats  
• Haemoptysis • productive cough  
• Lymphadenopathy

Ix • Sputum culture and microscopy  
• Acid fast bacilli test  
• Ziehl-Neelsen stain

①  
9) Chlamydia pneumoniae

• person to person contact  
• Sore throat and conjunctivitis

الأسبوع ٤٤

✍

58 &gt; 307

٣٠٧ &lt; ٥٨

NB

- ① • Consolidation pneumonia
- ⑤ • Bilat. cavitation Staph. pneumonia
- ④ • Upper lobe cavitation TB

- ② • patchy consolidation mycoplasma or Legionella
- ③ • Upper lobe consolidation TB, Klebsiella (rarely)

- Bilat. interstitial shadowing pneumocystis jirovecii
- = Bilobar " "

- Bilateral fluffy opacities pulmonary edema
- + ↑ Ht. size

- Hyperinflated lungs Bronchiolitis
- child < 1 year

- CT pleural effusion Mesothelioma
- pleural plaques

Week 44

الأسبوع ٤٤

\* Ray Bilat. hilar lymphadenopathy

CT pleural effusion + thickening

+ Arthralgia + Erythema nodosum  
(perforal rash)

• Reticulohilar shadowing + honey combing on skin

Sarcoidosis

Cryptococcal fibrosis  
alveolitis

59 &gt; 306

08

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60&gt;305

P.O. 1

08

# Large Cell Carcinoma

poorly differentiated malignant  
epithelial tumor

09

Histology shows sheets of large polygonal  
or giant multinuclear cells

10

# Flail chest

11

Paradoxical chest wall movement  
= part of the chest moving  
independently

2

## **EXAMINATION IN RESPIRATORY MEDICINE**

- 1. INSPECTION**
- 2. PALPATION**
- 3. PERCUSSION**
- 4. AUSCULTATION**

### **INSPECTION:**

#### **1. Central cyanosis means hypoxia:**

- This can be in any condition like Pneumonia, COPD or Asthma.
- These patients are usually breathless and are using accessory muscle.
- There is intercostal recession and sternal tug.
- Investigations - Pulse oximetry and ABG.

#### **2. PALPATION - WHAT TO PALPATE FOR?**

- Trachea
- Chest tenderness
- Chest expansion

##### **1. TRACHEA**

- Central which is normal
- Deviated which is abnormal, but the question: Is the trachea being pushed or pulled?

##### **Trachea can be pushed by:**

- Tension pneumothorax
- Massive haemothorax
- Massive pleural effusion

##### **Trachea can be pulled by:**

- Lung collapse (Common)
- Pneumonectomy
- Lung fibrosis

### **TENSION PNEUMOTHORAX**

- Common in young, thin males
- This is usually due to rupture of the large bullae and accumulation of air into the pleural cavity.

## 5 8. Recurrent laryngeal nerve palsy.

- ① • Usually after thyroid surgery
- Thyroid carcinoma especially anaplastic carcinoma (rapidly enlarging mass in neck)
- Aneurysm —
- Enlarged Heart
- ① • After long-term intubation —

Treatment: usually resolves after some time, only needs reassurance

### APNOEA - cessation of breathing

#### 1. Opiate overdose:

- Small Pin-point pupils
- Puncture marks on the arm
- Slow respiratory rate <12 per minute.

Treatment: naloxone - short acting antagonist of opiates therefore may need to be repeated as the duration of action of opiates is longer than that of naloxone.

#### 2. Breath holding spells in children

- Usually when they are upset and can be precipitated by trauma or when separated from the parents. Basically anything which may upset a child including falling down
- Usually, these children stop breathing for some time, they may turn blue or have little jerks of the limbs. Then they spontaneously start breathing after a short period of time and within 1 hour usually they completely fine.
- Usually there is a previous history

Treatment: Reassure

### ORTHOPNOEA

This is shortness of breath when lying flat.

This is a sign of heart failure.

Patients usually use 3-4 pillows to help elevate the bedside and prevent shortness of breath.

Usually this is at night.

### CHEST PAIN

- A. RESPIRATORY
- B. CARDIOVASCULAR
- C. MISCELLANEOUS

#### RESPIRATORY CAUSES

1. Pleurisy - Chest pain on inspiration, usually after pneumonia or after upper respiratory tract infection.
2. Bronchogenic carcinoma
3. Tension pneumothorax
4. Pneumonia
5. Pulmonary Embolism

#### CARDIOVASCULAR CAUSES

- 2 1. Myocardial infarction
2. Acute coronary syndrome

- Another precipitating factor is COPD
- Usually, there is hyper-resonance and reduced air entry on one side and trachea shifted on the other side.
- Chest expansion reduced on the same side as hyper-resonant and reduced air entry

### **COLLAPSED LUNG**

- This will create an empty space
- There is reduced air entry on the same side where the trachea has been shifted.
- The trachea is being pulled by an empty space created by a collapsed lung
- Reduced Chest expansion on the same side, reduced air entry
- There is hyper-resonant on opposite to the side where there is reduced air entry, also reduced air entry on the same side.
- Could be due to foreign body, lung carcinoma, as a complication of major operation.

### **REDUCED CHEST EXPANSION**

1. Should be equal on both side which is normal
2. Reduced unilaterally
3. Reduced bilaterally

### **CAUSES OF REDUCED AIR ENTRY UNILATERALLY**

1. Pneumothorax
2. Pneumonia
3. Haemothorax
4. Pleural effusion

### **CAUSES OF REDUCED AIR ENTRY BILATERALLY**

1. Pulmonary oedema secondary left ventricular failure (common)
2. Lung fibrosis especially cryptogenic fibrosing alveolitis

### **CHEST PALPATION:**

Tenderness e.g.

- After trauma usually there is localized tenderness
- Shingles in which you will also find rash which run around the trunk following the nerves, usually shingles starts from back moving to the front of the trunk. Shingles is common in Immune-compromised patients like elderly, patient on steroid, diabetic patient, HIV patient.
- Musculoskeletal pain usually after strenuous exercise in gym, especially on muscles

### **PERCUSSION - can be any of the following:**

1. Resonant - which is normal
2. Hyper-resonant - which can be on one side or both side
3. Dullness either on one side or both side
4. Stony dull means pleural effusion.

### **CAUSES OF UNILATERAL HYPER-RESONANCE**

- Pneumothorax is the commonest
- Large bullae

### **CAUSES OF BILATERAL HYPER-RESONANT**

- COPD
- Bronchiolitis

### **CAUSES OF UNILATERAL DULLNESS**

- Pneumonia
- Haemothorax
- Unilateral pleural effusion
- Lung collapse
- Lung abscess

### **CAUSES OF BILATERAL DULLNESS**

- Left ventricular failure due to pulmonary edema

### **AUSCULTATION**

1. Vesicular: normal heart sounds
2. Crackles: which can be either on one side or on both sides
3. Reduced air entry (reduced breath sounds) which can be either one side or both sides

### **REDUCED OF BREATH SOUNDS UNILATERALLY**

1. Pneumonia
2. Lung abscess
3. Pneumothorax
4. Pleural effusion

### **REDUCED AIR ENTRY BILATERALLY**

1. Left ventricular failure due to pulmonary edema, usually on the lung bases.
2. Congestive heart failure again due to left ventricular failure

### **BILATERAL CREPITATIONS**

Pulmonary edema due to left ventricular failure especially at lung bases

### **UNILATERAL CREPITATION/ CRACKLES**

1. Pneumonia (Commonest)
2. Lung abscess

### **INVESTIGATIONS IN RESPIRATORY MEDICINE**

#### **CHEST X-RAY FINDINGS**

1. Consolidation means pneumonia. Consolidation could be different.
  - Patchy consolidation can be either in mycoplasma or legionella
  - Upper lobe consolidation usually in tuberculosis, rarely in klebsiella
  - Bilateral interstitial shadowing usually in pneumocystis jiroveci
  - Bilateral cavitation usually due staphylococcal pneumonia
  - Upper lobe cavitation usually tuberculosis

3. **Widened mediastinum means dissecting aortic aneurysm (Thoracic)**
4. **Free gas in the mediastinum means ruptured/ perforated esophagus**
5. **Surgical emphysema means perforation of an organ e.g. esophagus**
6. **Gas under the diaphragm means perforated gastrointestinal tract (perforated peptic ulcer, perforation secondary to diverticulitis)**
7. **Bilateral fluffy opacities means pulmonary edema due to left ventricular failure.**
8. **Bilateral hilar lymphadenopathy in Sarcoidosis**

### **ARTERIAL BLOOD GAS**

**pH.....7.35-7.45**

**PaO2..... >10**

**PaCO2.....4.5-6**

**HCO3.....22-28**

**CO2 is an acid and its controlled by the lungs therefore its respiratory problem**

**HCO3 is an alkali or base, its controlled by the kidneys its therefore metabolic problem**

**Low PH means acidosis caused by high CO2 and Low HCO3**

**High PH means alkalosis caused by high, HCO3 and Low CO2**

**If base excess is negative it means acidosis, if it is positive it means alkalosis.**

### **Please follow the following steps in the interpretation of blood results:**

1. **Look at the pH - if it is low it is acidosis and if it is high it is alkalosis. Therefore, this step is to decide either this is acidosis or alkalosis.**
2. **Look at the PaCO2 - if it can explain the pH then it is respiratory, if CO2 cannot explain it then it is metabolic. Therefore, this step is to decide if this is respiratory or metabolic.**
3. **Look at the HCO3 to confirm your findings to step 2 and also to check if there is compensation.**

### **COMMON ACID BASE BALANCE ABNORMALITIES**

1. **Vomiting - you lose HCl, so patient will have metabolic alkalosis and hypokalemia**
2. **Diarrhea e.g. gastroenteritis - loose salts, therefore patient will have metabolic acidosis. NB: diarrhea also results in hypokalemia and hyponatremia.**
3. **In Villous adenoma- you lose potassium, therefore patient will have hypokalemia**
4. **Diabetic acidosis cause metabolic acidosis**
5. **Metformin causes lactic acidosis**
6. **Salicylates overdose metabolic acidosis.**
7. **Alcohol causes metabolic acidosis**

### **From the arterial blood gas you can also work out the type of respiratory failure.**

**Respiratory failure is oxygen PaO2 <8.**

**Respiratory failure type 1 is oxygen less than 8 with normal or low PaCO2, this can be caused by PE, pneumonia.**

**Respiratory failure type 2 is oxygen < 8 with high CO2, this can be caused by COPD.**

**In type 1 respiratory failure give 100% oxygen or highest available % of oxygen or 15 L/min.**

**In type 2 give 24% oxygen via ventura mask. The commonest cause of type 2 respiratory failure is COPD.**

# Asthma

الجمعة

Friday  
10

١٨ رجب ١٤٣٠ هـ

الأسبوع ٢٦  
١٧٤ - ١٩١

٣ أيارب ١٧٢٥  
Week 26  
191-174

يوليو  
JULY

Def.

Allergic inflammatory airway reaction characterized by reversible airway obstruction and bronchoconstriction leading to dry cough, shortness of breath and wheezes.

Symptoms

- 1) Family history of asthma
- 2) history of atopy (Asthma, Eczema, Hay fever)
- 3) Dry cough 4) wheezes 5) Shortness of breath.

Precipitating factors

- |   |        |                                     |                 |   |
|---|--------|-------------------------------------|-----------------|---|
| 8 | • Dust | • Drugs <del>Aspirin</del> , NSAIDs | • Exercise      | ٨ |
| 9 | • pets | • Smoking                           | • Viral illness | ٩ |

prophylaxis

- |      |                  |                      |      |
|------|------------------|----------------------|------|
| 12   | • Avoid triggers |                      | ١٢/١ |
| 1/13 | • Preexercise    | Salbutamol           | ١٣/٢ |
| 2/14 |                  | Sodium Chromoglycate | ١٤/٣ |
| 3/15 |                  |                      | ١٥/٤ |
| 4/16 |                  |                      | ١٦/٥ |

Ix

- |      |               |                           |      |
|------|---------------|---------------------------|------|
| 5/17 | 1) Spirometry | 2) Peak Flow meter (PEFR) | ١٧/٥ |
| 6/18 |               |                           | ١٨/٦ |

Management

- |      |                    |             |                       |      |
|------|--------------------|-------------|-----------------------|------|
| 7/19 | 1) Low probability | • Dry cough | • Shortness of breath | ١٩/٧ |
| 8/20 |                    | • wheezes   |                       | ٢٠/٨ |

associated with

Need to be Ix



## 2) High probability

- Dry Cough • Shortness of breath
- Wheezes
- associated with
- past history of atopy
- Family history of asthma or atopy • exercise

Trial Rx without IxRx

1) Stable patient GP, outpatient (Salbutamol)

SABA inhaler e.g. Salbutamol  $\xrightarrow{\text{not improved}}$  Add inhaled steroids if  $\xrightarrow{\text{failed}}$  SABA inhaler + inhaled steroid

e.g. beclomethasone 200  $\mu$ g  $\xrightarrow{\text{failed}}$  beclomethasone 800  $\mu$ g

• > attacks > week  
• night symptoms  
• Exacerbation

If failed

< 2 years refer to paediatric if correct  
2.5 years Leukotriene antagonist e.g. montelukast  
Fametril

• check diagnosis if failed  
• check technique (use spacer with a mask)

Stop LABA

↑ inhaled steroid

dose

2000  $\mu$ g

If develops

oral corticosteroids

↓ dose

If failed  $\rightarrow$  Add oral prednisolone

18/2

19/2

17/2

17/0

18/3

19/4

20/8

٥ توت ١٧٢٦

٢٦ رمضان ١٤٣٠ هـ

Week 36  
258-107

الأسبوع ٣٦  
١٠٧ - ٢٥٨

Tuesday  
15

الثلاثاء

10

الستمبر

SEPTEMBER

2) Unstable patient

Acute exacerbation of asthma

Mild to moderate asthma

S.S ①. Able to talk.

②.  $O_2 > 92\%$ .

③.  $PEFR > 35\%$  of the predicted value.

④. Pulse rate  $< 125$

Rx . Oxygen . Nebulised Salbutamol 5mg every 15-30 minutes  
@ Terbutaline  
• prednisolone

Severe Asthma

S.S ①. Cannot speak in complete sentence in one breath

②. Child too breathless to speak.

③.  $PEFR 35-50\%$  ④. pulse  $> 110$

⑤.  $O_2$  saturation  $< 92\%$  ⑥.  $RR > 25/min$ .

Rx . Oxygen  
• Nebulized Salbutamol 5mg / 15-30 minutes ± IV Salbutamol  
• Oral prednisolone 40-50mg or hydrocortisone 100mg IV  
•  $MgSO_4$   
• Aminophylline

## Life threatening asthma

- S.S
- Agitated ①
  - Silent chest ③
  - Cyanosis ④
  - Hypotension ⑤
  - Bradycardia ⑥
  - Reduced consciousness ②
  - Silent chest
  - Saturation < 92% ⑦

- Rx
- Oxygen
  - Nebulised Salbutamol + IV Salbutamol
  - Prednisolone or hydrocortisone
  - MgSO<sub>4</sub>
  - Aminophylline

prevention of  
asthma

- ③ • Stop Smoking
- ① • Avoid Allergens (dust, pets)
- ② • Avoid infection
- ④ • Use sodium chromoglycate // or preexercise bronchodilator