MED439
KING SAUD UNIVERSITY

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All Years OSLER

(3rd year version + 5th year notes)

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COLOR INDEX:

Black → From the Case

Grey → Extra (essential to the case)

Cardiology

Pulmonary

Nephrology

GIT & Hepatobiliary

بسم الله الرحمن الرحيم

نود لفت الانتباه أن العمل هو عمل طلّابي بحت، مقدم من مجموعة
من طلّاب وطالبات (439) ويحتمل الخطأ على الرغم من أننا بذلنا
جُهدنا من أجل إخراجه بأفضَل صورة.
تمَّ التعديل على بعض الكيسات وذلك بإضافة
الناقص منها وحذف بعض الملاحظات الإضافية والأسئلة
القديمة من أعمال السنوات السابقة، كما تم فرز الكيسات تبعًا للمادة التي تنتمي لها.

(ختامًا، عليكم بالاجْتِهاد وإخلاص النيَّة في طلب العلم. ولا نريد منكم إلا خالص الدعاء لنا).

ـ تحيَّاتنا

Important Notes

- One examiner kept opening the door to violate privacy, make sure to close the door and be aware of any other potential maneuvers

- We added questions examinees were asked on repeated cases, i.e not all questions are from the same examiner.

General History Taking

1- Biodata
Name:..... Age:..... Gender:..... Nationality:..... Marital Status:..... Occupation:..... Residency:.....
Route and date of admission:.....

2- Chief complaint:.....

3- History of Presenting illness
Site:..... Onset:..... Character:..... Radiation:..... Alleviating Factor:..... Timing: (1- Course:..... 2- Pattern:.....)
Exacerbating factors:.....
Severity:..... Special Questions:

4- Associated Symptoms:

5- Risk Factors:

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)

7- Systematic review: Remarkable: Unremarkable:

8- Past medical Any similar Attacks:..... Any chronic diseases:..... Any other diseases:..... History of Hospitalization:..... History of Vaccine:..... History of trauma:.....

9: Past surgical history: History of surgery:.....

10- Drug history: Any drugs:..... Name and dose:.....

11- Allergy: History of allergy:....

12- Blood transfusion: Any history of blood transfusion:.....

13- Menstrual history: Regular or irregular ? When is menopause and menarche ?

14- Family History: same disease in Family?:..... parents alive?..... inherited diseases?:.....

15: Social History: Smoking or alcohol abuse?:..... Illegal sexual contact: ?.....

16- Travel History:.....

17- Physical findings: Remarkable: General: …….. Specific:..... Unremarkable:

18- Differential diagnosis

19- Investigation:

20: Treatment and management
Pharmacological:
Non-Pharmacological
Surgical:

Cardiology:- Case 1:Heart Failure

Case: A 60-year-old female presented to the clinic with shortness of breath for two weeks.

1- Biodata: Age: 60, Gender: female, Nationality:Saudi, Marital Status: two kids, Occupation: no, Residency: Riyadh Route and date of admission: Clinic, today

2- Chief complaint: Chest pain, having this pain a month ago

3- History of Presenting illness: Site: diffused central chest, Onset: Gradual, Character: heaviness, Radiation: no, Alleviating Factor: rest, Timing: 1- Course: continues 2- Pattern: Progressive, Exacerbating factors: activities or exercise, Severity: 7, and affect daily activity, Special Questions: N/A

4- Associated Symptoms: Chest pain (previous episodes),- dry cough (orthopnea, paroxysmal nocturnal, dyspnea), NYHA class: 3, Pulmonary edema

5- Risk Factors: HTN, DM type 2

6- Constitutional symptoms: Unremarkable

7- Systematic review: Unremarkable

8- Past medical: Any similar Attacks: no, Any chronic diseases: yes, HTN, DM type 2, Any other diseases: no, History of Hospitalization: no, History of Vaccine: yes covid, History of trauma: no

9: Past surgical history: History of surgery: no

10- Drug history: Any drugs: yes, Name and dose: metaformin, lisinopril

11- Allergy: History of allergy: no

12- Blood transfusion: Any history of blood transfusion: no

13- Menstrual history: unremarkable

14- Family History: The same disease in the Family: no, Are parents alive? Mother alive, father died, At what age and why: 71, due to MI, Any inherited diseases: no

15: Social History: Smoking or alcohol abuse: smoker, for 20 years, one pack/day, Illegal sexual contact: no

16- Travel History: makkah

17- Physical findings: General: normal, Specific: Soft s2, crescendo-decresendo systolic ejection murmur (Aortic stenosis) heard best at 2nd intercostal space, radiating to carotid

18- Differential diagnosis: Valvular Heart disease(Aortic stenosis), HF (Secondary to VHD), ACS, Pneumothorax

19- Investigation: CBC, X-RAY, **Transthoracic Echo (best initial),** ECG, cardiac enzymes, **cardiac cath (Most accurate)**

20: Treatment and management: Treat symptoms, **Surgical: valve replacement (Best)**

21: Questions from examiner:

- What maneuvers do we use in the physical examination?
- Describe the murmur you heard in detail?

Soft s2, crescendo-decrescendo systolic ejection murmur (Aortic stenosis) heard best at 2nd intercostal space, radiating to carotid

- investigations of MI and AS and why for each?
- Why did you order cardiac enzymes? what are they? their levels? which is better?
- What would you do to an unstable patient?
- What are the extra heart sounds and bowel sounds?
- what causes Cardiac displacement? /

Case 2: ACS

Case: 60 yo male came to the clinic complaining of chest pain 2 weeks ago

1- Biodata: Age: 60, **Gender**: male, Nationality: Saudi, Martial Status: unmarried, occupation: no, Residency: Riyadh, Route and date of admission: emergency, today

2- Chief complaint: Shortness of breath

3- History of Presenting illness: Site: central, Onset: gradual, Character: increasing in nature, Radiation: right shoulder, Alleviating Factor: change in position, Timing: 1- Course: intermittent 2- Pattern: occurs at night, Exacerbating factors: laying flat, Severity: 7, Special Questions: None

4- Associated Symptoms: Cardiogenic Causes : ACS: SOB , Orthopnea , PND, Palpation , Ankle swelling , Intermittent Claudication , Syncope , Fatigue, Nausea, Anxiety **Respiratory Causes**: Pneumonia : Cough , hemoptysis , wheezing fever , PE: SOB , hemoptysis , Tender leg swelling , cyanosis ,
GIT causes : Esophageal spasm or GERD : Heartburn , Dysphagia , SOB, Sweating.

5- Risk Factors: Aging, Gender , High blood pressure, High blood cholesterol. , Cigarette smoking. , Lack of physical activity, Unhealthy diet, Obesity or overweight., Diabetes.

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) Positives : Fever And fatigue

7- Systematic review: Unremarkable:

8- Past medical: Any similar Attacks: Has CAD, Any chronic diseases: HTN, Hyperlipidemia, Any other diseases: no, History of Hospitalization: No, History of Vaccine: Covid, History of trauma: No

9: Past surgical history: Unremarkable

10- Drug history: Any drugs: For HTN and hyperlipidemia, Name and dose: Atrovatatin, Lisinopril.

11- Allergy: History of allergy: no

12- Blood transfusion: Any history of blood transfusion: no

13- Menstrual history: **Male patient**

14- Family History: same disease in the Family:? no, Are parents alive? Mother alive, father died, At what age and why:? 78, due to MI, Any inherited diseases: no

15: Social History: Smoking or alcohol abuse: smoker, for 20 years, one pack/day, Illegal sexual contact: no

16- Travel History: Unremarkable

17- Physical findings: on mannequin

18- Investigation:
1- ECG: -NSTMI: ST depression -STMI ST: elevation Antiplatelets are also given before and after PCI
2- Cardiac markers: CK-MB (used for reinfarction due to its short half life). and Troponin
3- BNP: rule in/out HF

19- Differential diagnosis: ACS, Arrhythmia (if palpitation), PE, Pneumothorax, Thyrotoxicosis, Esophageal spasm

20: Treatment and management:

- Pharmacological: Morphine, Oxygen: >90%, Nitroglycerin: symptomatic relief, **Aspirin (Best initial),** Beta blockers: Reduces mortality, ACEI (most imp side effect is cough): reduces heart load reduces possibility of HF, Statins: reduces cholesterol, and improves lipid profile reduce mortality, Heparin
- Interventional: Within 90 mins: **PCI (Best treatment if available),** more than 90 mins: fibrinolytics (only with STEMI) given within 12 hours of admission

21: Quastions from examiner:

- Causes of flapping tremors?: Hypomagnesemia, hypokalemia, cardiac failure, hepatic failure, renal failure, and intoxications e.g. barbiturates)
- Describe the character and possible abnormalities of the radial pulse ?: (in character, rhythm, and volume),
- Characterization of JVP? (report the actual length of JVP from the right atrium, meaning one had to add 5 to the distance measured from the sternal angle).
- what are the Accentuation maneuvers for the apex beat? as well as its abnormalities with examples? heaving, thrusting, double impulse, dyskinetic, tapping, etc...

Case 3: MR secondary to rheumatic fever (VHD)

Case: 46 years old female presented to ER with 3 weeks of fever and palpitations

1- Biodata
Age: 46 Gender: female Nationality: Varies Marital Status: Varies Occupation: Varies Residency: Riyadh
Route and date of admission: Emergency,Today

2- Chief complaint: Fever for 3 weeks associated with palpitation

3- History of Presenting illness
Site:..... Onset: 3 weeks. Character: Radiation:..... Alleviating Factor: Exacerbating factors:.....
Severity:..... Special Questions: is the fever worse at night ? No , did you measure it ? yes is it high grade fever (>38.3) , or low grade fever (37.2-37.8) ? high grade How does ends or reversed ? Paracetamol or NSAIDS , Is it documented or not (Documented in a hospital by the nurse) ? No it was not
Does the Fever change according time of the day ? No it is the same .

4- Associated Symptoms: left sided weakness in her arm, problem with speech , shortness of breath, dizziness or weakness, pain in your chest, palpitations, abdomen/feet/ankle swelling and unexplained weight gain (Due to edema) . rigors , sweating , chills , neck stiffness, dysuria, diarrhea , vomiting, joint pain or swelling

5- Risk Factors: Recent respiratory tract infection , History of Heart infections (IE or RHD) . History of heart attack. diabetes , congenital heart disease

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) Fever And fatigue

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks:No. Any chronic diseases: No Any other diseases: Yes : Rheumatic Heart Disease, 1 year ago History of Hospitalization: No History of Vaccine: No History of trauma: No

9: Past surgical history: History of surgery: No

10- Drug history: Any drugs: yes Name and dose: penicillin
11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No.

13- Menstrual history: unremarkable

14- Family History: same disease in Family? No parents alive? unspecified inherited diseases? No
15: Social History: Smoking or alcohol abuse?: No Illegal sexual contact: ? No

16- Travel History: india , few months ago.

17- Physical findings: General: normal Specific: Apex beat displaced, while auscultation MR at apex of the heart, radiating to the axilla.

18- Differential diagnosis: MR, IE, Pneumonia

19- Investigation: cbc, blood culture (3), ECG, Echo, x-ray

20: Treatment and management
Prevention : RHD :
Primary intervention Treating GAS infection as soon as feasibly possible
Pharmacological: Secondary intervention : Antibiotic prophylaxis :Intramuscular penicillin G benzathine in high risk situation (low risk we use oral penicillin as it is sufficient) if the patient is allergic to penicillin we use Sulfasalazine
Mitral valve regurgitation treatment :
Medical : in acute phase of the disease treatment is Temporarily , in Chronic phase we treat the cause , overall for HF : Treated with diuretics , Hypotension : inotropes , Atrial fibrillation : Digoxen and anticoagulant
Surgical :
Acute mitral regurgitation : Mitral valve repair is the treatment of choice
Chronic MR : Repair or replacement ,
Surgery is **indicated** in patients with symptomatic severe mitral regurgitation, left ventricular ejection fraction >30% and end-diastolic dimension of <55 mm, and in asymptomatic patients with left ventricular dysfunction (end-systolic dimension >45mm and/or ejection fraction of <60%).
Surgery should also be considered in patients with asymptomatic severe mitral regurgitation with preserved left ventricular function and atrial fibrillation and/or pulmonary hypertension.

Case 4: MR secondary to IE

Case: 60 year old male came to the hospital with a chest pain that persist for a month and increased in the last 2 weeks

1- Biodata
Name:..... Age: 60 years Gender: Male Nationality:..... Marital Status:..... Occupation:..... Residency:..... Route and date of admission:.....
sad
2- Chief complaint: Chest pain

3- History of Presenting illness
Site: Chest Onset gradually : Character: it is a pressure squeezing pain Radiation: No radiation Alleviating Factor: if i rest Timing: (1- Course: intermittent 2- Pattern: variable Exacerbating factors: movement or activity Severity: 9 Special Questions:

4- Associated Symptoms: vomiting , peripheral weakness, speech disorders , shortness of breath, dizziness or weakness, pain in your chest, palpitations, abdomen/feet/ankle swelling and unexplained weight gain (Due to edema) . vomiting, PND , orthopnea, dyspnea.

5- Risk Factors: Older age. History of Heart infections (IE or RHD) . History of heart attack. , High blood pressure, cholesterol, or diabetes , congenital heart disease, IV drug abuser (IVDU), Poor dentition or dental procedure /infection, Valvular heart disease (VHD), Congenital heart disease
sad
6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)

7- Systematic review: Unremarkable.

8- Past medical Any similar Attacks: No Any chronic diseases: Diabetes, hypertension Any other diseases: no History of Hospitalization: no History of Vaccine: no History of trauma: no

9: Past surgical history: History of surgery: no

10- Drug history: Any drugs: yes Name and dose: Insulin

11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Male patient

14- Family History: same disease in Family? No parents alive? No inherited diseases? father had diabetes

15: Social History: Smoking or alcohol abuse? NO Illegal sexual contact: ? NO

16- Travel History: NO

17- Physical findings: Performed on mannequin

18- Differential diagnosis: MR, ACS, PE

19- Investigation: Echo, ECG, x-ray, cbc, Thyroid function test

20: Treatment and management
Pharmacological:
IE : acute phase: Vancomycin and Gentamicin , **subacute phase** : Amoxicillin with/without gentamicin , **prosthetic valve** : Vancomycin, ,gentamicin and rifampicin
Mitral valve regurgitation treatment :
Medical : in acute phase of the disease treatment is Temporarily , in Chronic phase we treat the cause , overall for HF : Treated with diuretics , Hypotension : inotropes , Atrial fibrillation : Digoxen and anticoagulant
Surgical :
Acute mitral regurgitation : Mitral valve repair is the treatment of choice
Chronic MR : Repair or replacement ,
Surgery is **indicated** in patients with symptomatic severe mitral regurgitation, left ventricular ejection fraction >30% and end-diastolic dimension of <55 mm, and in asymptomatic patients with left ventricular dysfunction (end-systolic dimension >45mm and/or ejection fraction of <60%).
Surgery should also be considered in patients with asymptomatic severe mitral regurgitation with preserved left ventricular function and atrial fibrillation and/or pulmonary hypertension.

Questions from examiner:

Case 5: Stroke secondary to IE

Case:Patient presented to the clinic with 3 weeks history of fever

1- Biodata

Name: - Age- Gender: male Nationality- Marital Status- Occupation- Residency- Route and date of admission: today, clinic

2- Chief complaint: fever for 3 weeks

3- History of Presenting illness

Onset: 3 weeks Alleviating Factor: Paracetamol Timing: Continues Exacerbating factors: -

4- Associated Symptoms: **Sweating , Chills and shivering , Headache. Muscle aches, Loss of appetite, Irritability. , Dehydration.**

5- Risk Factors: Older age. History of Heart infections (IE or RHD) . History of heart attack. , High blood pressure, cholesterol, or diabetes , congenital heart disease

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) : **Only fever**

7- Systematic review: Remarkable: Left sided Hemiplegia (arm and leg) + slurred speech., everything else is unremarkable.

8- Past medical Any similar Attacks: no Any chronic diseases: no Any other diseases: VHD for 1 year History of Hospitalization: while examining my heart condition History of Vaccine: no History of trauma: no

9: Past surgical history: History of surgery: no, based on the case presented the patient might have done a prosthetic valve surgery since strep. viridans is caused by either a prosthetic valve or by a subacute infection caused by a dental procedure

10- Drug history: Any drugs: yes Name and dose: penicillin, lasix.

11- Allergy: History of allergy: no

12- Blood transfusion: Any history of blood transfusion: no

13- Menstrual history: Male Patient

14- Family History: same disease in Family? no parents alive? no inherited diseases? no

15: Social History: Smoking or alcohol abuse? no Illegal sexual contact: ? no

16- Travel History: no

17- Physical findings:General: normal check for Janeway lesions, Osler nodes, splinter hemorrhage, clubbing, and Jaundice Specific: on auscultation a 3/6 Pansystolic murmur was heard over the mitral area radiating to the axilla with soft S1(indicating mitral valve regurgitation)

18- Differential diagnosis: stroke due to septic emboli from IE, RHD, VHD, Pericarditis, rheumatoid arthritis, SLE, TB, HF

19- Investigation: Blood culture (3 cultures), echo, ESR, CRP
20: Treatment and management
IE : acute phase: Vancomycin and Gentamicin , **subacute phase** : Amoxicillin with/without gentamicin , **prosthetic valve** : Vancomycin, ,gentamicin and rifampicin

Management indications:

- High risk population who needs prophylaxis:

Prosthetic cardiac valves (highest risk), Cardiac transplant with valve regurgitation Previous endocarditis, Congenital heart defect.

- Abx for Dental procedures that involve manipulation of gingival or periapical region of the teeth, or perforation of oral mucosa in pts with conditions mentioned above:

Start 30-60 min before the procedure
○ Amoxicillin or Ampicillin
○ Clindamycin, azithromycin if allergic to penicillin or ampicillin

- Immediately plan and start empiric antibiotic therapy after obtain blood culture.
- Empirical therapy:
○ Gentamicin (best initial) and amoxicillin or ampicillin
○ Ceftriaxone is given as the initial empirical therapy, vancomycin is added in severe cases.

- After identification of the organism: Native valve → 2-4wks. Prosthetic valve → 6-8wks

- HACEK: ceftriaxone

Staphylococci	Streptococci
Native valve	**Penicillin susceptible**
• MSSA: **Flucloxacillin or nafcillin or oxacillin** (4-6wks) • MRSA & b-lactam allergic pts (6wks): **Vancomycin**	• **IV Ceftriaxone or** IV penicillin **or** IV amoxicillin (ALL given **for 4 wks)** • **Or** oral ceftriaxone for 2 weeks followed by oral amoxicillin for 2 wks • B-lactam allergy: vancomycin

Staphylococci	Streptococci
Prosthetic valve	**Penicillin resistant**
• MSSA: Flucloxacillin **with** gentamicin & rifampin • MRSA or staph. epidermis: Vancomycin **with** gentamicin & rifampin	• Ceftriaxone **with** gentamicin **or** penicillin G **or** amoxicillin • B-lactam allergy: vancomycin **with** gentamicin

- Cardiac surgery indications: CHF from ruptured valve, Failure of abx therapy, Large vegetations with high risk of recurrent emboli, Fungal endocarditis.

Questions from examiner:
What is this specific stroke called ? Mycotic aneurysm
- Where else can septic emboli go and what happens:
● Liver —> Jaundice
● Kidneys —> Hematuria
● Spleen —> Splenomegaly
● Mesentery —> Mesenteric ischemia
● Lungs —> lung abscess
-What antibiotic to use? Vanco + Genta (+/- Rifampicin)
- most likely Organism? Strep. Viridans

Case 6: Aortic Stenosis

Case: Female patient presented with shortness of breath for 3 weeks

1- Biodata
Name:..... Age: 41 Gender: female Nationality:..... Marital Status:..... Occupation:..... Residency:.....
Route and date of admission: Today, Clinic

2- Chief complaint: Shortness of breath for 3 months

3- History of Presenting illness
Onset: 3 months Character: continuous Radiation: no Alleviating Factor: rest Timing: (1- Course: progressive 2- Pattern: gradual) Exacerbating factors exercise
Severity: affects daily life)

4- Associated Symptoms: central chest pain and dizziness (might present with angina, dyspnea on exertion Hypertrophic cardiomyopathy:family + young age + hx of sudden cardiac death + syncope after exertion)

5- Risk Factors: Older age. History of Heart infections (IE or RHD) . History of heart attack. , High blood pressure, cholesterol, or diabetes , congenital heart disease

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) : none

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: no Any chronic diseases: HTN, Diabetes (both 5 years ago) Any other diseases: no History of Hospitalization: no History of Vaccine: no History of trauma: no

9: Past surgical history: History of surgery:no

10- Drug history: Any drugs: yes Name and dose: lisinopril and metformin

11- Allergy: History of allergy:no

12- Blood transfusion: Any history of blood transfusion: no

13- Menstrual history: unremarkable

14- Family History: same disease in Family? no parents alive? Father died of MI a71 inherited diseases? NO

15: Social History: Smoking or alcohol abuse? smoking for 20 years Illegal sexual contact: ? no

16- Travel History: no

17- Physical findings: General: unremarkable Specific: in auscultation AS is heard Soft S2, ejection systolic crescendo-decrescendo murmur, auscultate for radiation to the carotids

18- Differential diagnosis: AS secondary to RHD, AS secondary to congenital bicuspid or unicuspid valve, AS secondary to calcification (wear and tear) less likely due to young age

19- Investigation: ECG, Echo, X- Ray, cardiac catheterization

20: Treatment and management

Pharmacological: ACEi for hypertension, Diuretics for edema
Non-Pharmacological
Surgical: Aortic valve replacement

Questions from examiners:

- Why do you perform cardio exams at a 45 degree angle? because **this angle directly influences the height of the JVP for any given CVP**.
- What are your differential diagnosis? 1- AS 2- Stable angina 3- pneumonia 4- esophageal spasm
- The patient has been having this chest pain for 2 months. How can it be pneumonia? Reflux
- What investigations would you like to order? ECG - CXR - Echo -Cardiac enzymes
- What is the definitive management? Aortic valve replacement.
- What would you do before? Send the patient to the cath lab
- What is the most specific sign of left sided heart failure? S3 gallop
- summarise the case (history + examination).
- Based on the results what is the most likely dx? Aortic stenosis
- What was the name of the patient, and whether asked about the number of children she had, & he repeated the patient's medications
- How to treat hypertension coexisting with aortic stenosis, (If we can give ACE or diuretic)
- The sites of swelling in cardiac failure (lower limb edema, basal lung crackle, raised JVP, sacral edema)
- The difference between JVP and carotid artery

Carotid Artery Pulsation vs Jugular Vein Pulsation	
Carotid pulsation is an arterial pulse.	Jugular vein pulsation is a venous pulse.
Number of Peaks	
There is only one peak per cardiac cycle.	There are two peaks per cardiac cycle.
Palpability	
Carotid pulse is palpable.	JVP is impalpable.
Impact of the Pressure	
Pulsation is not affected by the pressure at the root of the neck.	Pulse is reduced by an increase in the pressure at the root of the neck.
Respiration	
Carotid pulse does not depend on respiration.	JVP varies with respiration.
Impact of Position	
Pulse does not change the position of the patient	Pulse changes with the position of the patient.
Abdominal Pressure	
Pulse is independent of the abdominal pressure.	Pulse increases with an increase in the abdominal pressure.

Physical examination:

1- WIPPPER: Wash hand, Introduce yourself, Insure patient Privacy, Position: 45 and Permission, Exposure: Full trunk

2- ABCCDE: Appearance (young/middle aged/old, looks well or ill) Body built (overweight, thin or normal) Color (pale, cyanosis, jaundice) Connections (IV cannula, oxygen mask, nasal cannula, holter monitor, nasogastric tube) Distress (in pain, using accessory muscles in breathing, abnormal movements) Else (Consciousness, Alertness and orientation to person, place and time)

3- Vital Signs: BP, RR, HR, O2 saturation.

4- Inspection:

A- Nails & Fingers:

Splinter Hemorrhage → Infective endocarditis, Koilonychia → Anemia , Clubbing → congenital cyanotic heart disease, infective endocarditis. Capillary refill time

B- Hands

Palm → Osler node and janeway lesion, Pallor → Anemia, poor peripheral perfusion

Dorsum → Tendon xanthoma (indicating Hyperlipidemia) and temperature

C- Elevating the tongue → Central cyanosis, Dental hygiene, we auscultate the back of patient → Basal crackles, we touch lower back → Sacral edema

D-Abdomen and LL: Peripheral pulses in lower limbs, and LL edema, Abdomen → Hepatosplenomegaly and Ascites

E- Pericardium:

I. Deformity: ○ Pectus excavatum/Pectus carinatum

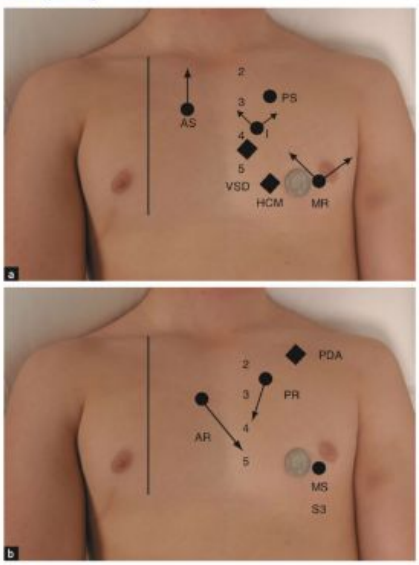
II. Scars & Devices: ○ Sternotomy ○ Thoracotomy ○ Pacemaker

III. Visible pulsation: ○ Apex beat with torch

5- Palpation: JVP, Carotid artery, Apex beat, Thrills, and parasternal heave

6- Auscultation: The heart (: Mitral → Tricuspid → Aortic → Pulmonary) and the lungs

Sites of maximum intensity and radiation of murmurs and heart sounds (2–5 refer to intercostal spaces).



(a) Systolic murmurs:
AS=aortic stenosis
MR=mitral regurgitation
HCM=hypertrophic cardiomyopathy
PS=pulmonary stenosis
VSD=ventricular septal defect
I=innocent.

(b) Diastolic murmurs and sounds:
AR=aortic regurgitation
MS=mitral stenosis
S3=third heart sound
PR=pulmonary regurgitation
PDA=patent ductus arteriosus (continuous murmur).

Respiratory Case 8: COPD

Case: Ali, 65 years old complaining of productive Cough and SOB

two cases : One case for **8 months** , Another case for **2 years**

1- Biodata

Name:..... Age:..... Gender:..... Nationality:..... Martial Status:..... Occupation:..... Residency:.....
Route and date of admission:.....

2- Chief complaint: Cough

3- History of Presenting illness

A- Cough

Site:..... Onset: gradual Character: whooping Radiation:…….Alleviating Factor: rest , bronchodilator , oxygen supplements Timing: (1- Course: continuous or **intermittent**? If intermittent ask about how many time ? How much the time between ratchet one ? How much the time of each one ? When the last one is happened?) 2- Pattern: is it progressive , constant , or regressive ? Does it increase or decrease at specific time throughout the day ? Worse at the night (Asthma) exacerbating factors:dust , perfumes , cold weather , exercise, **smokes** , after meals
Severity:by scoring from 1-10 , does it interfere with your daily activity ? Does it wake up you from sleep ?
Special Questions: if productive ask about ACCO
Amount : spoon like less or more **C**olor : green , yellow , white , pink **C**ontent : blood , mucus **O**dor or not

B- SOB (awareness of breathing)

Site:..... Onset: , gradual Character:..... Radiation:..... Alleviating Factor: Rest , Bronchodilator ? Never tried them
Timing: **intermittent**? If intermittent how many time ? throughout the day How much the time between ratchet one ? It differs How much the time of each one ? Few moments When the last one is happened? today in the morning 2- Pattern: progressive , Exacerbating factors: lies down (orthopnea) , exertion , emotions, smoking
Severity: i think 8 as it affects my daily activity , Special Questions: what was doing before the attack is happening ? walking with friends Is it awake you from sleep ? (PND) does it exacerbating by lies down (orthopnea) , orthopnea and PND usually indicating cardiological causes

4- Associated Symptoms:

Cough

-Respiratory associated symptoms
PE , Asthma , pneumonia , COPD , bronchiectasis (very productive)
-CVS associated symptoms
Heart Failure
- GI associated symptoms
GERD > associated with burning chest pain , increase when lying down

SOB
-CVS associated symptoms
Heart Failure >chest pain , Orthoptera , palpitation, intermittent claudication
Anemia > pallor , fatigue, palpitation
-Respiratory associated symptoms:
pneumonia > 3-4 day of cough , fever , hemoptysis
Bronchial asthma > wheeze , cough
PE > tender leg swelling , imp risk factor (mobilization , pregnancy, ..)
COPD > elderly, chronic cough and history of smoking
Asthma > young ,acute cough and history of previous episodes with specific trigger , improve with bronchodilator

-SOB + chest pain and edema > think more about cardiac disease
-SOB + cough > think more about respiratory disease
-SOB + hemoptysis > PE , TB , pneumonia

5- Risk Factors: similar previous attack , smoking if yes ask about (when , type , packet per day) he is smoker for 20 years , any respiratory disease (asthma) , **contact with febrile Tb patient , COVID patient , or animals (imp)**

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) if all positive think about malignancy, TB

7- Systematic review: Remarkable: Unremarkable:

8- Past medical Any similar Attacks: if yes ask about how many times ? (frequency) , how much the time between each one ? , how much the time of each one , when the last one is happen? , same severity or not? Any chronic diseases:HTN,DM Any other diseases:if yes ask him about what is it ? , when does it start, is it under control or not? History of Hospitalization:if yes (why, duration ,complications) history of Vaccine:..... History of trauma:.....

9: Past surgical history: did you have any History of surgery? If yes (type of surgery , why , when , where , any complications) Or related procedures?(eg bronchoscopy, Lung biopsy)

10- Drug history: Any drugs:(eg beta blocker , ACEI will cause dry cough) if yes ask about (Name , dose , route , frequency , duration, and side effects)

11- Allergy: History of allergy: (drugs , food , environment, others..) , what is the symptoms of reaction? How does it relive?

12- Blood transfusion: Any history of blood transfusion:if yes ask about (when , why , how many units , any complications)

13- Menstrual history: Regular or irregular ? When is menopause and menarche ?

14- Family History: same disease in Family?:..... parents alive?..... inherited diseases?:.....

15: Social History: Smoking or alcohol abuse?:..... Illegal sexual contact: ?.....

16- Travel History: travel to endemic area (imp)

17- Physical findings: Remarkable: General: …….. Specific:..... Unremarkable: Hyperresonant, Early inspiratory crackles, Increased AP diameter, Rhonchi, Peripheral Cyanosis, Tracheal tug, Flattened diaphragm

18- Differential diagnosis : COPD, Asthma, Heart Failure, Bronchiectasis ,TB, COVID-19

19- Investigation:
Blood:CBC, **ABG, Spirometry (diagnostic test)**
Serology:Covid swab, PCR
Imaging:**CXR**
Special:**PFT** Reduced FEV1:FVC with no reversibility (reversibility is improved FEV1>12% AND >200mL) , ECG: may show signs of right ventricular hypertrophy

20: Treatment and management

non-Pharmacological > (lifestyle Modifications) : Smoking cessation (Don't forget)

Pharmacological >

-Long-term O2 therapy: only given in certain cases, improves mortality.

-Bronchodilators and ICS

-LABA never given alone. Always with ICS

Surgery >

-may be beneficial in severe cases (Lung resection for giant bullae in emphysema and lung transplantation for nonrepairable damage

Management of COPD exacerbations:

-Mild cases: SABDs

-Moderate cases: SABDs + antibiotics and/or oral corticosteroids

-Severe cases: Hospitalization + assess for respiratory failure

Questions from examiner:

-Asked about investigations and why for each?

- Management?

Criteria for hospital admission

-what is Treatment if it was a hospital acquired Pneumonia ?

-what is the Treatment if he was unstable ?

-In case of emergency what are the emergency investigations? , how to manage if COPD pt came to ER (تسلسل الادوية)?, at what O2 sat a COPD pt should be on?

- Didn't do physical examination, just asked what are the positives in COPD patients.

- Why do we use ECG? Because it may show signs of right ventricular hypertrophy e.g. P pulmonale (Right atrial enlargement)

- where could be the edema in other places? feet and sacral

-Why did you ask about his job? Is it relevant?

-COPD which one was pink puffers and blue bloaters(emphysema, chronic bronchitis)

Case 9: COPD with pleural effusion

Case: Annalynne 65 years old lady

two Cases : 1- came to the clinic complaint of SOB , 2- Productive cough for 2 years

1- Biodata

Name:..... Age:..... Gender:..... Nationality:..... Martial Status:..... **Occupation**:(imp to ask specifically in respiratory symptoms) Residency:..... Route and date of admission:.....

2- Chief complaint: SOB or Productive cough

3- History of Presenting illness

Cough

Site:..... Onset: gradual Character: …..Radiation:…….Alleviating Factor: rest Timing: (1- Course: continuous or **intermittent**? If intermittent ask about how many time ? How much the time between ratchet one ? How much the time of each one ? When the last one is happened?) 2- Pattern: is it progressive , constant , or regressive ? Does it increase or decrease at specific time throughout the day ? increase in the morning , worse at the night (Asthma) exacerbating factors: exercise, **smokes** Severity:by scoring from 1-10 , does it interfere with your daily activity ? Does it wake up you from sleep ?

Special Questions: if productive ask about ACCO

Amount : little in amount **C**olor : yellowish and whitish in colour **C**ontent : no blood or mucus **O**dor or not

SOB (awareness of breathing)

Site:..... Onset: sudden , gradual? Character:..... Radiation:..... Alleviating Factor: rest , Bronchodilator ? Timing: (1- Course:..... 2- Pattern:.....) Exacerbating factors: lies down (orthopnea) , exertion , emotions, smoking ? Severity: by scoring from 1-10 , ask the patient if interfering with daily activities, by using NYHA classification

Special Questions: what was doing before the attack is happening ? Is it awake you from sleep ? (PND) does it exacerbating by lies down (orthopnea) , orthopnea and PND usually indicating cardiological causes

4- Associated Symptoms:

Cough

-<u>Respiratory associated symptoms</u>

PE , Asthma , pneumonia , COPD , bronchiectasis (very productive)

-<u>CVS associated symptoms</u>

Heart Failure

- <u>GI associated symptoms</u>

GERD > associated with burning chest pain , increase when lying down

SOB

-<u>CVS associated symptoms</u>

Heart Failure >chest pain , Orthoptera , palpitation, intermittent claudication

Anemia > pallor , fatigue, palpitation

-<u>Respiratory associated symptoms:</u>

pneumonia > 3-4 day of cough , fever , hemoptysis

Bronchial asthma > wheeze , cough

PE > tender leg swelling , imp risk factor (mobilization , pregnancy, ..)

COPD > elderly, chronic cough and history of smoking

Asthma > young ,acute cough and history of previous episodes with specific trigger , improve with bronchodilator

-SOB + chest pain and edema > think more about cardiac disease
-SOB + cough > think more about respiratory disease
-SOB + hemoptysis > PE , TB , pneumonia

5- Risk Factors: similar previous attack , smoking if yes ask about (when , type , packet per day) he is smoker for 20 year 1.5 packets per day , any respiratory disease (asthma) , **contact with febrile Tb patient , COVID patient , or animals (imp)**

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) if all positive think about malignancy, TB

7- Systematic review: Remarkable: Unremarkable:

8- Past medical : Any similar Attacks: if yes ask about how many times ? (frequency) , how much the time between each one ? , how much the time of each one , when the last one is happen? , same severity or not? Any chronic diseases:HTN,DM Any other diseases:if yes ask him about what is it ? , when does it start, is it under control or not? History of Hospitalization:if yes (why, duration ,complications) history of Vaccine:..... History of trauma:.....

10- Drug history: Any drugs:(eg beta blocker , ACEI will cause dry cough) if yes ask about (Name , dose , route , frequency , duration, and side effects)

11- Allergy: History of allergy:.... if yes ask about what is the symptom of reaction ? How does it relive

12- Blood transfusion: Any history of blood transfusion:.....

13- Menstrual history: Regular or irregular ? When is menopause and menarche ?

14- Family History: same disease in Family?:..... parents alive?..... inherited diseases?:.....

15: Social History: Smoking or alcohol abuse?:..... If yes ask about (type , daily amount, duration)Illegal sexual contact: ?.....

16- Travel History: travel to endemic area (imp)

17- Physical findings: Remarkable: General: …….. Specific:..... Unremarkable:
COPD findings > Hyperresonant, Early inspiratory crackles, Increased AP diameter, Rhonchi, Peripheral Cyanosis, Tracheal tug, Flattened diaphragm
Pleural effusion findings >
- Inspection & Palpation:
Asymmetric expansion and unilateral lagging on the affected side, Reduced tactile fremitus.
- Auscultation:
Faint or absent breath sounds over the area of effusion, Pleural friction rub
- Percussion:
Stony dullness over the area of effusion

18- Differential diagnosis : CVS causes (LVF , RVF , anemia) | **respiratory causes (** asthma COPD , pneumonia)

19- Investigation:
COPD
Blood:CBC, **ABG, Spirometry (diagnostic test)**
Serology:Covid swab, PCR
Imaging:**CXR**
Special:**PFT**
Pleural effusions
Light criteria, CXR , US

20: Treatment and management

COPD :

non-Pharmacological (lifestyle Modifications) : Smoking cessation (imp)

Pharmacological:

-Long-term O2 therapy: only given in certain cases, improves mortality.

○ Pharmacological :

-Bronchodilators and ICS

-LABA never given alone. Always with ICS

Pleural effusion :

- Stabilize patients with respiratory distress, HOW? Provide supplemental oxygen, Consider urgent therapeutic thoracentesis - Identify and treat the underlying condition

- Therapeutic thoracentesis to relieve the symptoms like dyspnea

Questions from examiner:

- Which system are you going to examine? Respiratory. - Back or front? Which is better?

- What is horner syndrome ? a condition that **affects the face and eye on one side of the body**. It is caused by the disruption of a nerve pathway from the brain to the head and neck

- What disease decreases tactile and vocal fremitus

- What disease has positive egophony? commonly seen in **pneumonia (consolidation) and pleural effusion**

- Why is pulmonary fibrosis not the diagnosis?

- Showed me an x-ray image for Pleural Effusion and asked me to identify - Asked for 3 causes of Exudative and Transudative , and i explained the difference according to the Light's criteria

- When to give oxygen? provide supplemental oxygen urgently

What are the Criteria for hospital admission ? The Global Initiative for Chronic Obstructive Lung Disease diagnostic criterion for chronic obstructive pulmonary disease is **a forced expiratory volume in one second/forced vital capacity ratio of less than 70 percent of the predicted value**

-what is Treatment if it was a hospital acquired Pneumonia ? if the patient had severe COPD we give the patient Steroids + Antibiotics + Oxygen therapy + Ventilators while also checking O2 levels

-what is the Treatment if he was unstable ? already answered

- Why do we use ECG? Because it may show signs of right ventricular hypertrophy e.g. Cor pulmonale (Right atrial enlargement)

- where could be the edema in other places? feet and sacral

-Why did you ask about his job? Is it relevant? yes the patient might have other respiratory disorders caused by substance exposure

-COPD which one was pink puffers and blue bloaters(emphysema, chronic bronchitis)

Case 10: Chronic Bronchitis

Case: 65 y/o coming to the clinic with productive cough and sob for 2 years.

1- Biodata

Name:..... Age:..... Gender:..... Nationality:..... Martial Status:..... Occupation:..... Residency:..... Route and date of admission:.....

2- Chief complaint: Productive Cough and SOB

3- History of Presenting illness

Cough

Site:..... Onset: **gradual** Character: Radiation:…….Alleviating Factor: **rest or nothing** , bronchodilator , oxygen supplements Timing: (1- Course: continuous or **intermittent**? Intermittent If intermittent ask about how many time ? How much the time between ratchet one ? How much the time of each one ? When the last one is happened?) 2- Pattern: is it progressive , constant , or regressive ? Does it increase or decrease at specific time throughout the day ? Happen more in the morning exacerbating factors: triggered by cold weather Severity:by scoring from 1-10 , does it interfere with your daily activity ? Does it wake up you from sleep ?

Special Questions: if productive ask about ACCO

Amount : spoon like less or more small in amount **C**olor : yellow/white sputum **C**ontent : no blood , **O**dor : no foul smell

SOB (awareness of breathing)

Site:..... Onset: sudden , **gradual**? Character:..... Radiation:..... Alleviating Factor: rest , Bronchodilator ? Timing: (1- Course: continuous or **intermittent**? If intermittent ask about how many time ? How much the time between ratchet one ? How much the time of each one ? When the last one is happened?) 2- Pattern: is it progressive , constant , or regressive ? Exacerbating factors: **lies down (no orthopnea or PND)** , exertion , emotions, smoking ? Severity: by scoring from 1-10 , ask the patient if interfering with daily activities, by using NYHA classification Special Questions: what was doing before the attack is happening ? Is it awake you from sleep ? (PND) does it exacerbating by lies down (orthopnea) ,

4- Associated Symptoms: Pneumonia: Sputum , Hemoptysis, SOB, Fever, Wheezing , PE : SOB , Tender leg , Bronchogenic carcinoma : Hoarseness, Night sweat, Weight loss, Hemoptysis, Esophageal atresia : Cough after food , GERD : SOB , Heartburn, Sweating.

5- Risk Factors: smoking 1.5packs/day for 20 years ,Smoker or Ex Smoker , Asthma.

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)

7- Systematic review: Unremarkable:

8- Past medical Any similar Attacks: No Any chronic diseases: NO Any other diseases: NO, History of Hospitalization: 6 months ago he was hospitalized for an infection (not ICU), stayed for 7 days and was given antibiotics and inhalers (doesn't remember them) History of Vaccine: Covid vaccine History of trauma:No

9: Past surgical history: History of surgery: No other hospitalizations except for an appendectomy 19 years ago (uncomplicated)

10- Drug history: Any drugs: Doesn't take any medications

11- Allergy: History of allergy: no allergy

12- Blood transfusion: Any history of blood transfusion: No transfusions

13- Menstrual history: Regular or irregular ? When is menopause and menarche ?

14- Family History: same disease in Family? NO parents alive? NO inherited diseases?:NO

15: Social History: Smoking or alcohol abuse? **1.5packs/day for 20 year** Illegal sexual contact: ? NO.

16- Travel History:.....

17- Physical findings:
-The SP (female) sat on the bedside and they asked me general questions when examining the hands and nails (what do u see if +ve flapping tremor? What signs related to the case do u see in hands? Etc)
-When I reached the neck in general inspection (btw they skipped jvp but only after i mentioned it) they told me to directly go to the patient's back (Don't forget folding the arms on percussion)
-On auscultation they told me to examine the mannequin. Afterwards they said anything else u wanna auscultate that u cant do on a mannequin? (Vocal fremitus + Egophony, i didn't do them just mentioned them).
For me: I heard diminished breath sounds (mainly expiratory) + crackles (they didn't specify what type) in expiration bilaterally in the lower lobes. (They asked me what are your findings and on which side).

18- Differential diagnosis : COPD , asthma

19- Investigation:
Blood:CBC, **ABG, Spirometry (diagnostic test)**
Serology:Covid swab, PCR
Imaging:**CXR**
Special:**PFT** , PEFR

20: Treatment and management
-In acute phase : First stabilize the patient and start them on a short acting bronchodilator. If on exacerbation give antibiotics, steroids if necessary, etc. if very severe maybe intubate
-Non-Pharmacological (long term) : Lifestyle modification (smoking cessation), avoid triggers

Questions from examiner:
- What do you think is the diagnosis ?
COPD , Which type? Chronic Bronchitis , Why do you think that?
Because of The smoking history AND productive cough for 2 years
- If blood was in the cough what other differentials? Bronchiectasis, TB, Lung cancer

Case 11: Asthma

Case: 33 y/o came to clinic with cough & dyspnea (not ER)

1- Biodata

Name: Age: 33 Gender: male Nationality: …. Martial Status: Not Occupation:teacher Residency:Riyadh Route and date of admission: presented to the clinic

2- Chief complaint: Cough + SOB (+4 months)

3- History of Presenting illness

Onset: 4 months ago Character: dry cough + SOB Radiation: No Alleviating Factor: rest Timing: (symptoms are present all day long no pattern) Exacerbating factors: exertion, cold weather, dust
Severity: 8/10, affected her daily activity, not going to work anymore, and disturbed her sleep
Special Questions:

4- Associated Symptoms: wheezing
Chest pain? Palpitation? Syncope? Swelling? Pain while walking? > Cardio , Wheezing? Sore throat? Hoarseness? Rhinitis? Eczema? > Respa, Burning sensation? N/V? Difficulty swallowing? > gasto

5- Risk Factors: No **(possible risk factors: family history, viral respiratory infections, allergies, air pollution, occupational exposure, smoking, obesity)**

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) > None

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: yes (ask how many ? How where they managed ?) Any chronic diseases: No (If already diagnosed with asthma then this is exacerbation) Any other diseases: no History of Hospitalization: no History of Vaccination: does not recall
History of trauma: no

9: Past surgical history: History of surgery: no

10- Drug history: Any drugs: inhaler Name and dose: does not recall

11- Allergy: History of allergy: dust, pet hair

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Sp is female pretending to be MALE

14- Family History: same disease in Family? Yes parents alive?.Yes inherited diseases? No

15: Social History: Smoking or alcohol abuse?: No Illegal sexual contact: ? No

16- Travel History: insignificant

17- Physical findings: Remarkable: Specific: expiratory wheezing

18- Differential diagnosis:

Asthma Exacerbation > COPD > Atypical pneumonia (add to your investigation sputum culture) > Interstitial Lung Disease > Bronchiectasis

19- Investigation:

Blood:

- Complete blood count(Eosinophils), arterial blood gases, TFT

Imaging:

- Chest Xray

Special:

PFT(Spirometry) initial diagnostic test:

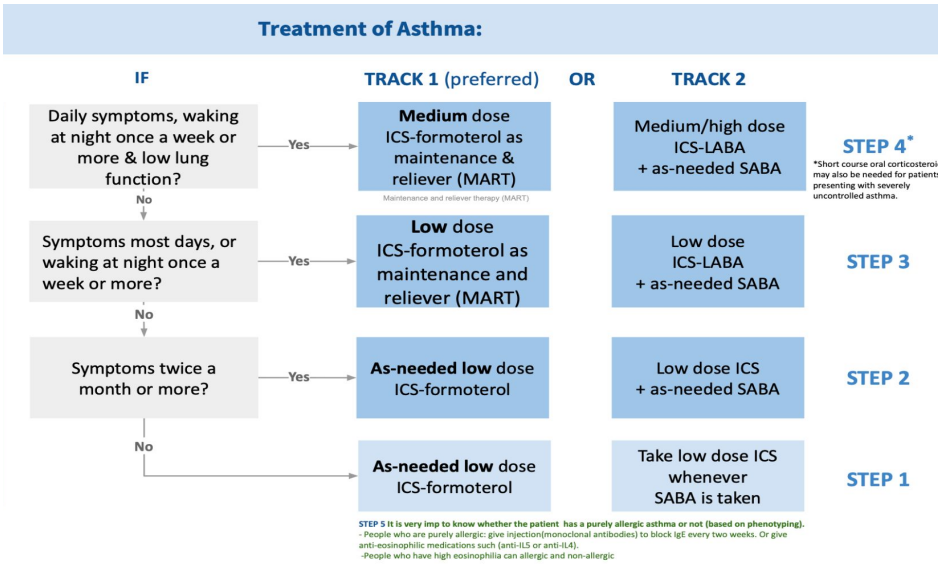
1/ Reduced FEV1/FVC (< 70% airway obstruction) > Bronchodilator PET > with reversibility (reversibility is improved FEV1>12% AND >200mL) > asthma

2/ Normal FEV1/FVC >Bronchoprovocation or Methacholine challenge > Inducible > Asthma

20: Treatment and management

Pharmacological:

Stabilize, SABA + ICS + O2 to maintain saturation 93-95%, LABA (never given alone always with ICS)



Non-Pharmacological:

Avoid triggers (pets, cold weather, smoking, dust…etc)

Education (about asthma,inhaler technique & adherence..etc)

Questions from examiner:

- If pneumonia is one of your DXX you might be asked about its management
  (management of pneumonia = antibiotics = use (curb-65))
- What would you see in the chest Xray you ordered ? Hyperinflation.
- Why asthma is the most likely diagnosis? justify your answer by excluding other DDX, why not COPD? young + non smoker
- What are you looking for in Tactile vocal fremitus? deacresed or increased, and when will it increase? consolidation
- What is the normal site for the apex beat? 5th intercostal space mid-clavicular line
- Normally when you'll start to feel dullness in percussion of the liver? 5th intercostal space
- What type of wheezing did you hear? expiratory wheezing (this is because the airways normally dilate during inspiration and are narrower during expiration).
- What you want to hear when percussing the lung? Normally it is resonant and symmetrical in both sides (dull = pleural effusion, collapse, consolidation / hyper resonant = emphysema, pneumothorax)
- What is the normal expansion of the lungs? A separation of 3-5 cm is considered a good expansion.

Case 12: bronchiectasis

Case: 20 y/o came to the clinic complaining of productive cough for 2 years

1- Biodata
Name:..... Age: 20 years old Gender: female Nationality:..... Martial Status:..... Occupation:.....
Residency:..... Route and date of admission:.....

2- Chief complaint: complaining of cough accompanied by white/yellow large amounts of sputum
3- History of Presenting illness
Cough :
Site:..... Onset: **gradual** Character: Radiation:…….Alleviating Factor: **rest or nothing** , bronchodilator , oxygen supplements Timing: (1- Course: continuous or **intermittent**? Intermittent If intermittent ask about how many time ? How much the time between ratchet one ? How much the time of each one ? When the last one is happened?) 2- Pattern: is it progressive , constant , or regressive ? Does it increase or decrease at specific time throughout the day ? Happen more in the morning exacerbating factors: triggered by cold weather Severity:by scoring from 1-10 , does it interfere with your daily activity ? Does it wake up you from sleep ?
Special Questions: if productive ask about ACCO
Amount : Large amount of phlegm **C**olor :clear, pale yellow or yellow-greenish in colour. **C**ontent : no blood , **O**dor : foul smell

4- Associated Symptoms: dyspnea along with wheezing but there was no fever, chest pain, night sweats, loss of weight or appetite, no hemoptysis.

5- Risk Factors: Cystic fibrosis. Chronic and inflammatory lung disease., Chronic or severe lung infections
6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)

7- Systematic review: Unremarkable:

8- Past medical Any similar Attacks: Any chronic diseases: diabetes mellitus type 1 Any other diseases: had several repeated chest infections recently History of Hospitalization: NO History of Vaccine: Covid History of trauma:No
9: Past surgical history: History of surgery: No

10- Drug history: Any drugs: on insulin and compliant

11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular , When is menarche ? 12

14- Family History: Her mother has a chronic cough of unknown cause

15: Social History: Not smoker alcohol abuse? No Illegal sexual contact: ? NO

16- Travel History: No recent travel
17- Physical findings: Remarkable: coarse inspiratory crackles

18- Differential diagnosis : bronchiectasis, TB, COPD, asthma

19- Investigation: High resolution - CT (HR-CT) scan, sputum culture , chest Xray , spirometry

20: Treatment and management

Pharmacological: Inhaled bronchodilators & Anti inflammatory , Immunization you might be asked to specify or mention names (ex: pneumococcal, influenza, and covid vaccines) , Nebulized saline , mucolytics, antibiotics.
Non-Pharmacological : Chest physiotherapy , Postural drainage
Surgical:

Questions from examiner:

- ➢ Why do you think it's bronchiectasis?
  she is young and nonsmoker and it increases in the morning with a large amount of sputum.
- ➢ What causes bronchiectasis?
  Recurrent pulmonary infection (TB, Severe pneumonia, MAC) , Childhood infection (e.g. measles, pertussis), cystic fibrosis, immotile cilia syndrome.
- ➢ She has diabetes, how is that related to bronchiectasis?
  DM patients are immunocompromised so she is more prone to have chest infections
- ➢ Why not COPD?
  Young and non smoker.
- ➢ Why not asthma?
  No sputum with asthma.
- ➢ Why not pneumonia?
  Pneumonia can not be for 2 years.
- ➢ Why did you measure the radial pulse for respiration?
  What can you find in the pulse? Doc answered "pounding pulse"
- ➢ What causes chest expansion?
  COPD, severe asthma.
- ➢ What are you inspecting in the neck other than JVP?
  Use of accessory muscles.
- ➢ What kind of crackles?
  Course
- ➢ Since her mother has a chronic cough, what clue could this give you?
  genetic causes of bronchiectasis like Cystic fibrosis or immotile cilia syndrome, or TB and she infected her daughter.

Case 13: Pleural effusion secondary to TB

Case:A 63 years old retired building engineer came to the hospital with sob and cough (written in the paper)

1- Biodata
Name: - Age: 63 Gender: - Nationality: - Marital Status: Married Occupation: Retired building engineer. Residency: - Route and date of admission: Admitted through the hospital (date of admission wasn't mentioned)

2- Chief complaint: SOB and cough

3- History of Presenting illness
SOB: Site: - Onset: 8 months ago Character: don't remember if it's constant or intermittent Radiation: - Alleviating Factor: Rest Timing: (Course: Gradual and progressive - Pattern: Doesn't change during the day Exacerbating factors: Normal daily activity such as cleaning Severity: 8/10 affects his life, doesn't wake him up from sleep Special Questions: -

Cough: Site: - Onset: - Character: Productive cough (Fluid description ABCDEFS) Amount: spoon, Blood: no, Colour: clear, Discharge: no, Event: no trigger only exercise, Frequency: each episode lasts for one hour 5 per week, Smell: no, Radiation: - Alleviating Factor: - Timing: intermittent each episode lasts for one hour 5 per week Exacerbating factors: exercise Severity: - Special Questions: -

4- Associated Symptoms: fever, weight loss , loss of appetite, night sweats, Chest Pain (PE , pneumonia, bronchiectasis , TB , malignancy) Chills (infection) , Swelling in the neck (lymphadenopathy) (Tb, metastatic tumor) Mucopurulent/foul smelling sputum(Bronchiectasis), Pain while breathing (Tb , pleuritis) Neck stiffness , photophobia , nausea & vomiting (Tuberculous meningitis) , Signs of shock, Tachycardia, tachypnea, palpitations (PE) , Hematuria, frothy urine Wegener's , Goodpasture's syndrom

5- Risk Factors: Past smoking history

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)
Insignificant except for weight loss (lost 8 kilograms in 8 months unintentionally)

7- Systematic review: -

8- Past medical Any similar Attacks: No previous episodes Any chronic diseases: No Any other diseases: No History of Hospitalization: No History of trauma: No

9: Past surgical history: History of surgery: Yes, hernia surgery 8 years ago

10- Drug history: Any drugs: - Name and dose: - Immunization: 3 doses COVID-19

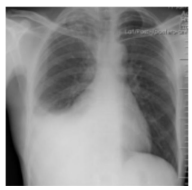
11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular or irregular ? - When is menopause and menarche ? -

14- Family History: Unremarkable same disease in family?: - parents alive? - inherited diseases?: -

15: Social History: Married with 2 children Smoking or alcohol abuse?: Ex smoker (quit smoking 5 years ago) was a smoker for 35 years and used to smoke one pack daily Illegal sexual contact: ? -



16- Travel History: -

17- Physical findings: Respiratory examination: all were unremarkable except for auscultation there was decreased air entry in the right side

18- Differential diagnosis Pleural effusion secondary to TB, Lung cancer or COPD

19- Investigation:

- **X-ray:** What type ? Chest x ray then he told me what do you see on the following image?
  Bilateral hilar lymphadenopathy, consolidation, pleural effusion, cavitation and ghon complex.
- **Sputum culture**
- **Thoracocentesis:** What would you do with it? Culture and cytology for malignancy and chemistry for protein
- What do we call pleural fluid with high protein? Exudative causes TB, malignancy
- What do we call pleural fluid with low protein? Transudative causes? Heart failure
- How to differentiate between exudative and transudative? through light criteria and he asked me how?

Pleural effusion is exudative if one of the following is present and transudative if all three were absent:

- Ratio of pleural fluid protein level to serum protein level > 0.5
- Ratio of pleural fluid LDH level to serum LDH level > 0.6
- Pleural fluid LDH level > ⅔ the upper limit of normal serum LDH level

20- Treatment and management:

Pharmacological: (RIPE) Rifampicin, Isoniazid, Ethambutol, Pyrazinamide for 6 months

Questions from examiner:

- If he presents with night sweat what's you differential? TB
- Whats the use of thoracocentesis? Cytology (cell type growth) etc
- Mention three examples of:
  - Exudative: TB (infection), lung malignancy, PE
  - Transudative : HF, liver cirrhosis, nephrotic syndrome
- What absent breathing sounds indicate?
  - Air or fluid in or around the lungs (such as pneumonia, heart failure and pleural effusion)
  - Increased thickness of the chest wall
  - Over-inflation of a part of the lung (emphysema can cause this)
- What do you look for in the chemistry of the fluid?
  LDH and protein levels

TB

Investigations

- **Pleural biopsy to determine if TB or Malignancy**

Active TB:

- **Culture:** Gold standard diagnostic test
- **Acid-fast bacilli smear microscopy:** Ziehl Neelsen stain and auramine rhodamine stain are used
- **PCR**: Used as an adjunct along with acid-fast staining and culture
- **CXR:** Primary TB (middle/lower lobes): Hilar lymphadenopathy (can be unilateral or bilateral), Ghon complex, Consolidation, Pleural effusion, Cavitation (primary progressive TB)

Reactivation TB: fibrocaseous cavitary lesions in upper lobes

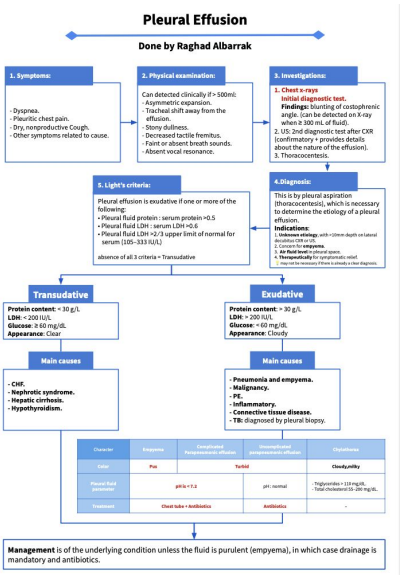
Latent TB:

- Tuberculin skin test
- **Interferon-γ release assay (IGRA):** Preferred test in individuals with prior BCG vaccination

Management

- **All TB patients**
  - Mandatory reporting to local health department
- **Active TB:**
  - Infection control: airborne precautions
  - Laboratory tests: obtained before starting treatment: Liver function test (LFT), Creatinine, Platelet count, HIV testing , Hepatitis B and hepatitis C , FBS or HbA1c
  - **First-line drugs: 2 months of rifampin PLUS isoniazid, pyrazinamide, and ethambutol Then continue 4 months of rifampin PLUS isoniazid**
  - **Second-line drugs These drugs are typically indicated in drug-resistant TB:** Aminoglycosides, Fluoroquinolones, Ethionamide, Cycloserine, Para-aminosalicylic acid
- **Latent TB:**

Treatment of latent TB		
Drug(s)	Frequency	Duration of therapy
Preferred regimens		
Isoniazid PLUS rifapentine	• Once weekly	• 3 months
Rifampin (OR rifabutin)	• Daily	• 4 months
Isoniazid PLUS rifampin	• Daily	• 3 months
Alternative regimen		
Isoniazid	• Daily or twice weekly	• 6 months • 9 months



Case 15: Lung Cancer / TB

Case: 60 y/o came to clinic with SOB and cough for 8 months

1- Biodata

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: SOB and cough for 8 months

3- History of Presenting illness

Site: - Onset: 8 months ago Character: Productive cough with white sputum (sometimes yellow) and there is no blood with it Radiation: - Alleviating Factor: - Timing: (1- Course: - . 2- Pattern: -) Exacerbating factors: - . Severity: - Special Questions: -

4- Associated Symptoms: fever, weight loss , loss of appetite, night sweats, Chest Pain (PE , pneumonia, bronchiectasis , TB , malignancy) Chills (infection) , Swelling in the neck (lymphadenopathy) (Tb, metastatic tumor) Mucopurulent/foul smelling sputum(Bronchiectasis), Pain while breathing (Tb , pleuritis) Neck stiffness , photophobia , nausea & vomiting (Tuberculous meningitis) , Signs of shock, Tachycardia, tachypnea, palpitations (PE) , Hematuria, frothy urine Wegener's , Goodpasture's syndrom

5- Risk Factors: -

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)
Only weight loss (8 kg in 8 months)

7- Systematic review: All negative

8- Past medical Any similar Attacks: No Any chronic diseases: - Any other diseases: - . History of Hospitalization: - History of trauma: -

9: Past surgical history: History of surgery: Yes, surgery for inguinal hernia 10 years ago

10- Drug history: Any drugs: No. Name and dose: - History of Vaccine: -

11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: -

13- Menstrual history: Regular or irregular - When is menopause and menarche -

14- Family History: same disease in Family?: - parents alive? No. inherited diseases?: -

15: Social History: Smoking or alcohol abuse?: Quit smoking 5 years ago but he had been smoking for 30 years (1 pack daily) . Illegal sexual contact: ? -

16- Travel History: No

17- Physical findings:

- Dullness on percussion in left lower 2/3
- Reduced breath sound in left lower area

18- Differential diagnosis

- Lung cancer
- TB

19- Investigation:

- CBC
- CXR showed pleural effusion
- Thoracocentesis (What will you do with the fluid? Check for cytology, color, predominant cell type, PH and Glucose)

20- Treatment and management:

TB management: RIPE for 6 months

Lung cancer management:

- Chemotherapy
- Targeted therapy
- Immunotherapy
- Radiation
- Surgery

Pleural effusion was exudative so what's the next step?

- Therapeutic Thoracentesis (why? To relieve pressure on the lungs)
- CT to identify cancer (Dr did not accept pleural biopsy)

Questions from examiner:

- What is light's criteria? Is used to determine whether a pleural effusion is exudative or transudative.
- What are the causes of edema? Congestive heart failure, Cirrhosis, Kidney disease, Inadequate lymphatic system, Severe long term protein deficiency and Weakness or damage to the vessels.
- Who do you expect to find sacral edema in? In patients with fluid overload, lying down for an extended period, fluid may migrate from the legs to the sacral region - therefore it is important to assess this area for edema.
- Where would you see the smoking stains in the hand? On the fingertips
- How to measure the jvp?
  1. Position the patient in a semi-recumbent position (at 45°).
  2. Ask the patient to turn their head slightly to the left.
  3. Inspect for evidence of the IJV, running between the medial end of the clavicle and the ear lobe, under the medial aspect of the sternocleidomastoid (it may be visible just above the clavicle between the sternal and clavicular heads of the sternocleidomastoid). The IJV has a double waveform pulsation, which helps to differentiate it from the pulsation of the external carotid artery.
  4. Measure the JVP by assessing the vertical distance between the sternal angle and the top of the pulsation point of the IJV (in healthy individuals, this should be no greater than 3cm and some resources says 4cm).
- Why would you feel the temperature in the arms (During the general examination)? To check the peripheral perfusion and detect signs of inflammation.
- What would you comment on when you feel the radial artery? Rate, Rhythm and character
- Which diseases will cause tracheal shifting?
  Deviated **towards** diseased side: Atelectasis, Agenesis of lung, Pneumonectomy, Pleural fibrosis.
  Deviated **away** from diseased side: Pneumothorax, Pleural effusion, Large mass.
- What disease will cause dullness on percussion? Pleural effusion, Pneumonia, Pulmonary oedema, Lung cancer.
- If there was dullness what does that means? Dullness replaces resonance when fluid or solid tissue replaces air-containing lung tissues.
- What is the normal sound heard during percussion? Dullness is the normal sound heard when percussing tissues that are dense in consistency, such as the liver. Dullness is typically considered an abnormal sound if elicited with percussion over the lungs or the intestines, stomach, or bladder.
- What occupations are most at risk for asbestos exposure? Engineers and construction workers.
- What type of cancer do they develop? Mesothelioma
- What are the physical findings that you would find in pleural effusion? reduced tactile vocal fremitus, dullness on percussion, shifting dullness, and diminished or absent breath sounds

Case 16: Pneumonia (CAP)

Case: 20 Year Old female came to the ER complaining of Cough and fever for the past 5 days.

1- Biodata

Name: - Age: 20 Gender: Female. Nationality: - Marital Status: - . Occupation: Law Student Residency: - Route and date of admission: Through the ER

2- Chief complaint: Cough accompanied by 39° fever both for 5 days.

3- History of Presenting illness

Site: - . Onset: 5 days ago Character: Productive cough with greenish/whitish sputum with some streaks of blood Radiation: - . Alleviating Factor: Nothing Timing: Cough is worse in the morning Exacerbating factors: Nothing . Severity: The cough if affecting her life

4- Associated Symptoms: **Pneumonia: Sputum , Hemoptysis, SOB, Fever, Wheezing , PE : SOB , Tender leg , Bronchogenic carcinoma : Hoarseness, Night sweat, Weight loss, Hemoptysis, Esophageal atresia : Cough after food , GERD : SOB , Heartburn, Sweating.**

5- Risk Factors: She had a chest infection 7 days ago

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue) Nothing except fever

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: No Any chronic diseases: No Any other diseases: Chest infection (other than pneumonia) History of Hospitalization: No History of Vaccine: Fully vaccinated History of trauma: No

9: Past surgical history: History of surgery: No

10- Drug history: Any drugs: Yes Name and dose: Paracetamol for the fever and Keppra 500 mg tablet once daily for seizure

11- Allergy: History of allergy: Unremarkable

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular or irregular - When is menopause and menarche -

14- Family History: same disease in Family?: No parents alive? - inherited diseases? -

15: Social History: Smoking or alcohol abuse?: No Illegal sexual contact: ? -

16- Travel History: No

17- Physical findings:

- General: Vitals: BP (110/60). RR (30). HR (110). Temperature (39). O2 sat (98%).
- Specific: Coarse crackles heard in the upper back

18- Differential diagnosis

- Pneumonia , Pulmonary edema , Bronchiectasis , TB, Lung cancer

19- Investigation:

- **Basic:** CBC, RFT, LFT
- **Specific:** CXR, CT, Sputum culture and staining , Blood culture, PCR (Specifically for COVID-19 & MERS), ABG and Urine antigen

20: Treatment and management

Depends on **CURB-65**

CURB-65	
Symptom	**Points**
Confusion	1
B**U**N>7 mmol/l	1
Respiratory rate≥30	1
S**B**P<90mmHg, D**B**P≤60mmHg	1
Age≥**65**	1

- **Score 0 or 1:** send home with azithromycin for 3-5 days.
- **Score 2:** admit to hospital and treat with ceftriaxone + azithromycin.
- **Score 3 or more:** ICU and treat with Tazocin (Piperacillin/tazobactam) also called piptaz.

Questions from examiner:

- What are you gonna see on CXR? consolidation and pleural effusion if complicated.
- If it was a PE are you gonna use HRCT? No, I would use narrow window IV contrast CT in addition to D-Dimer
- What is CURB-65 and apply it to our patient? Confusion, blood Urea nitrogen, RR, BP, Age 65. Our patient has at least 2 points (BP & RR) so I will admit her.

Case 17: Hospital acquired pneumonia 438

Case: Female patient presented to the ER with SOB and cough for 5 days

1- Biodata

Name: - Age: 20 years old Gender: Female . Nationality: - Marital Status: - Occupation: - Residency: - Route and date of admission: through ER

2- Chief complaint: SOB and Cough for 5 days

3- History of Presenting illness

Site: - Onset: 5 days ago Character: Productive cough with greenish sputum and blood Radiation: - . Alleviating Factor: - Timing: - Exacerbating factors: -
Severity: -

A- **Cough :** Onset: **gradual** Character:.Alleviating Factor: **rest or nothing** , bronchodilator , oxygen supplements Timing: (1- Course: continuous or **intermittent**? Intermittent If intermittent ask about how many time ? How much the time between ratchet one ? How much the time of each one ? When the last one is happened?) 2- Pattern: is it progressive , constant , or regressive ? Does it increase or decrease at specific time throughout the day ? Happen more in the morning exacerbating factors: triggered by cold weather Severity:by scoring from 1-10 , does it interfere with your daily activity ? Does it wake up you from sleep ?
Special Questions: if productive ask about ACCO
Amount : spoon like less or more small in amount **C**olor : yellow/white sputum **C**ontent : no blood , **O**dor : no foul smell

B- SOB (awareness of breathing) : Onset: sudden , **gradual**? Alleviating Factor: rest , Bronchodilator ? Timing: (1- Course: continuous or **intermittent**? If intermittent ask about how many time ? How much the time between ratchet one ? How much the time of each one ? When the last one is happened?) 2- Pattern: is it progressive , constant , or regressive ? Exacerbating factors: **lies down (no orthopnea or PND)** , exertion , emotions, smoking ?
Severity: by scoring from 1-10 , ask the patient if interfering with daily activities, by using NYHA classification
Special Questions: what was doing before the attack is happening ? Is it awake you from sleep ? (PND) does it exacerbating by lies down (orthopnea) ,

4- Associated Symptoms: Fever

Pneumonia: Sputum , Hemoptysis, SOB, Fever, Wheezing , PE : SOB , Tender leg , Bronchogenic carcinoma : Hoarseness, Night sweat, Weight loss, Hemoptysis, Esophageal atresia : Cough after food , GERD : SOB , Heartburn, Sweating.

5- Risk Factors: Hospital admission 7 days ago (2 days before her symptoms)

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)
Only fever

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: Yes 5 years ago Any chronic diseases: - Any other diseases: Yes, another respiratory disease History of Hospitalization: Yes, 7 days ago History of Vaccine: - History of trauma: -

9: Past surgical history: History of surgery: -

10- Drug history: Any drugs: - Name and dose: -

11- Allergy: History of allergy: -

12- Blood transfusion: Any history of blood transfusion: -

13- Menstrual history: Regular or irregular - When is menopause and menarche -

14- Family History: same disease in Family? - parents alive? - inherited diseases?: -

15: Social History: Smoking or alcohol abuse?: - . Illegal sexual contact: ? -

16- Travel History: -

17- Physical findings: Increase in tactile fremitus (Decreased in pleural effusion)

18- Differential diagnosis

- Hospital acquired pneumonia , Asthma , COPD , Congestive heart failure , Interstitial lung disease , Pulmonary embolism , Atelectasis

19- Investigation:

- CBC
- Chest X-ray (Looking for consolidation)
- Chest CT
- Sputum culture
- PFT (Not important just to exclude other DDx)

20: Treatment and management

Depends on **CURB-65**

CURB-65	
Symptom	**Points**
Confusion	1
B**U**N>7 mmol/l	1
Respiratory rate≥30	1
S**B**P<90mmHg, D**B**P≤60mmHg	1
Age≥**65**	1

- **Score 0 or 1:** send home with azithromycin for 3-5 days.
- **Score 2:** admit to hospital and treat with ceftriaxone + azithromycin.
- **Score 3 or more:** ICU and treat with Tazocin (Piperacillin/tazobactam) also called piptaz.

Questions from examiner:

- What will happen to tactile and vocal fremitus when there is consolidation or pleural effusion? **Increase** in pneumonia and **decrease** in pleural effusion.
- What is the most likely organism of hospital acquired pneumonia? Pseudomonas aeruginosa
- If CURB-65 score is 0/1 what should you do? Send home with azithromycin for 3-5 days
- Why azithromycin? Because it is effective in eradicating atypical organisms (Pseudomonas aeruginosa)
- If CXR and CBC is normal with slightly elevated CRP what does that mean? CRP is a marker of inflammation so it might indicate an ongoing inflammation.

Physical examination (Respiratory): CLICK HERE!

Talley's order for local chest examination:
1) Finish inspection for both front and back chest then
2) Finish palpation for both front and back chet then
3) Finish percussion for both back and chest then
4) Finish Auscultation for both back and chest pain But for exam purpose, mostly you will examine one side

1- WIPPPER: Wash hand, Introduce yourself, Insure patient Privacy, Position: 45 and Permission, Exposure: Full trunk

2- ABCCDE: Appearance (young/middle aged/old, looks well or ill) Body built (overweight, thin or normal) Color (pale, cyanosis, jaundice) Connections (IV cannula, oxygen mask, nasal cannula, holter monitor, nasogastric tube) Distress (in pain, using accessory muscles in breathing, abnormal movements) Else (Consciousness, Alertness and orientation to person, place and time)

3- Vital Signs: BP, RR, HR, O2 saturation.

4- Inspection" Don't forget to compare!

- Hand (Dorsum):
a. Tendon xanthoma → Hyperlipidemia
b. Muscle wasting → e.g. Cancer
c. Any skin pigmentation
d. Any scars
e. Tar staining → Smoking
f. Check the temperature → Peripheral perfusion

- Hand (Nail):
a. Check capillary refill → Perfusion
b. Clubbing → bronchiectasis, pulmonary fibrosis and lung cancer
c. Koilonychia → Anemia
d. Leukonychia

- Hand (Palm)
a. Palmar erythema → High estrogen level
b. Palmar xanthoma → Hyperlipidemia
c. Flapping tremor → CO2 retention/uremia
d. Peripheral Cyanosis → Low O2 saturation
e. Pallor → Anemia

- Arms:
a. Eczema → Asthma
b. Rash
c. Any scar that indicate IV drug abuse
d. Bruising and Petechiae → Uremia
e. Radial Pulse "Comment on Rate, Rhythm and character"
f. Respiratory rate "If not given in the vital signs, do it while palpating the radial pulse to avoid making the patient aware you are observing his/her breathing"

Physical examination (Respiratory):

General "Inspection"

- Face:

a. Cyanosis → Low O2 in the blood
b. Signs of horner's syndrome (ptosis, miosis and anhidrosis)
c. Eye Allergic conjunctivitis → Asthma
d. Pallor → Anemia
e. Xanthelasma → Hyperlipidemia
f. Ideally l should do fundoscopy to look if there are any diabtic changes "NOT sure"
g. Nasal Septal deviation
h. Nasal Polyps/ Discharge

- Mouth:

a. Oral hygiene → IE
b. Central cyanosis → Poor circulation

- Neck

a. JVP: not greater than 4 cm → Cor pulmonale (patient at 45°)

Frontal Chest Examination "Inspection"

- Shape and symmetry:

a. Any asymmetry → Associated with Pneumonectomy and Thoracoplasty
b. Pectus excavatum
c. Pectus Carinatum
d. Barrel shaped → Emphysema

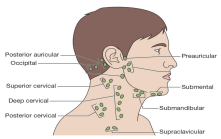
E- Scars (indicate previous surgeries like lateral Thoracotomy) or Skin changes (erythema)
- Devices like pacemaker
- Visible Pulsation:

Apex beat: Ideally we should point the torch to see if the apex beat visible
- Breathing type: Abdominothoracic or Thoracoabdominal

Frontal Chest Examination "Palpation" ask the patient if he has any pain before starting

- **Lymph nodes**: 8 lymph nodes (Submental, Submandibular, Per-auricular, Posterior auricular, Occipital, Superior cervical,Deep cervical, Posterior cervical and Supraclavicular)
- **Trachea**:

a. Tracheal deviation
b. Tracheal tug → Severe airway obstruction



- Chest expansion:

1) Symmetrical → normal or pulmonary fibrosis , 2) Asymmetrical → Pneumothorax, pneumonia or pleural effusion
- Apex beat

Local Anterior (Front) Chest Examination "Percussion" Don't forget to compare!

- Areas to percuss:

a. Supraclavicular b. Infraclavicular c. Chest wall (3-4 locations bilaterally) d. Axilla

Physical examination (Respiratory):

Local Front Chest Examination "Auscultation"
- Breathing (ask the patient to breath):
a. Areas to Auscultate:
- Egophony: ideally we should ask the patient to say "E" above normal tissue it will be "E"if we hear "A" then the lung tissue is consolidated

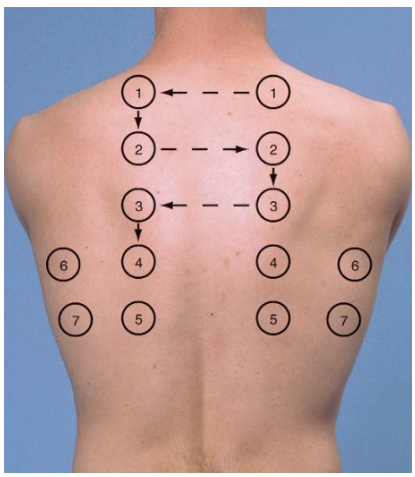
Local Back Chest Examination "Inspection"
- Shape and symmetry:
a. Look for Kyphoscoliosis "Talley's inspection"
b. Any asymmetry → Associated with Ankylosing spondylitis "Talley's inspection"
- Any scars that indicate previous surgeries like Thoracotomy
- Any skin erythema or thickening → Chemotherapy" to treat lung cancer or lymphoma"
- Any prominent veins

Local Posterior (Back)
a. Areas to Auscultate:
- Vocal fremitus (99)

Local Back Chest Examination "Percussion"
- Areas to percuss: ASK the patient to fold his/her arms to percuss

Local Back Chest Examination "Palpation"
- Chest expansion:
Symmetrical → normal or pulmonary fibrosis OR Asymmetrical → Pneumothorax, pneumonia or pleural effusion
- Tactile fremitus (99)

Other Associated Examinations "According to Talley's order, it's at the end "
- Back: looking for sacral edema and basal crackles
- Breasts: Ideally we should examine it "Talley"
- Abdomen: Ideally we should examine it "Talley"
- Lower limb:
a. Swelling leg and erythema→ DVT
b. Lower limb edema → Cor pulmonale
c. Ideally we should check peripheral pulses



Nephrology Case 18: Nephritic syndrome (PSGN)

Case: 40 y/o came to ER with dark urine for 4 days

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: Blood in urine , dark urine

3- History of Presenting illness: history of URTI sore throat and runny nose 2 weeks ago + history of gout attack one year ago

Site: - Onset: suddenly Character: Fresh blood ? no clusters ? NO droplets ? no mixed with urine ? Yes , Painful or painless ? Painless , Radiation: (stones , UTI , Trauma) - . Alleviating Factor: no Timing: comes and goes Exacerbating factors: does it increase with eating some food ? (some foods changes the color of urine) Special Questions : ACCO :
Amount : More than 3/Liters a day ? Color: Colorless ? Normal ?Pall ? Dark ? Content ? Oder or not ?

4- Associated Symptoms: Kidney stone : Severe loin pain , UTI : Fever , dysuria , Frequency , Suprapubic pain , Nephritic syndrome : Oliguria , Early morning swelling around the eyes , Goodpasture syndrome : SOB , Cough , Hemoptysis , SLE : Skin malar rash, Joint pain , Photosensitivity

5- Risk Factors: Female Sexual contact , Indwelling urine cath.

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue):

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: No Any chronic diseases: No Any other diseases: Chest infection (other than pneumonia) History of Hospitalization: No History of Vaccine: Fully vaccinated History of trauma: No

9: Past surgical history: No
10- Drug history: Do you take medication ? Yes , What are they ? Paracetamol for migraine and ibuprofen for gout
11- Allergy: Do you have any allergies for drugs , food . environment ? No
12- Blood transfusion: No
13- Menstrual history: Male patient
14- Family History: Same disease in Family?: No parents alive? - inherited diseases? Asthma

15: Social History: Smoking or alcohol abuse? Yes pack/ year for 10 years : Illegal sexual contact: ? No

16- Travel History: No
17- Physical findings: Some doctors asked to do abdominal while others asked for respiratory examinations , anyhow both where Unremarkable
18- Differential diagnosis: PSGN , IgA nephropathy, renal stone (patient has history of gout)

19- Investigation: Urinalysis,CBC, electrolytes, US , immunology serology of GAS Anti-DNase B and Streptolysin O

20: Treatment and management

Supportive:

- ACEi for high BP
- Diuretics for Edema
- If severe, give IV steroids

Management for gout:

- Acute attack - pain killers
- Recurrent attacks - Urate lowering medications

Questions from examiner:

- Why US? To rule out obstruction
- Should we give the patient antibiotics?
- What are you gonna see in general inspection or appearance ? any signs of distress or autoimmune disorders
- What do you see in the vital signs? any signs of distress
- What is the normal chest expansion ? A Normal adult chest should expand about **2 to 5 inches**
- The patient has gout and he takes **ibuprofen** for it, do you think this is the reason for his symptoms?
- Is renal ischemia painful or painless? **Painful**
- How can trauma cause reduced urine output?
- What can paracetamol and ibuprofen do? **AKI**
- Do you give ACEi in AKI? **NO**
- What do you look for in serology?

Gastrointestinal Case 19: Hepatitis

Case: 30 y/o female came to the clinic with abdominal distention and jaundice

1- Biodata

1- Biodata: - Name , Age 30 , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: Yellow discoloration of the skin , Abdominal distention

3- History of Presenting illness

Site : Eyes , Hands , (Palm) Face (Skin) Onset: Gradual Character: - Radiation: - Alleviating Factor: Fasting ? No
Timing: (1- Course: Continues 2- Pattern: progressive) Exacerbating factors: Food ? No Severity: 7
Special Questions:
When did you notice it ? and who noticed it ? Few weeks ago by my mother
Do you have skin itchiness ? No Have you had any fever (Cholangitis) ? NO
Have you had a change in your appetite or weight loss (Malignancies)? NO
Have you started any new medication recently ? NO

4- Associated Symptoms:

Prehepatic causes : Fatigue , chillies , Tea colored urine , Exertional dyspnea , Palpitation , fever.
Hepatic causes : Bleeding tendency , Ascites , Lower limb swelling.
Posthepatic causes : RUQ pain, Clay stool , Dark urine, Pruritus.
Malaria : Fever , rigors , Cold , Sweating

5- Risk Factors: Liver disease , Hyperlipidemia , contact with Jaundice (Hepatitis) , Hx of Gallstone , Traveling to endemic area.

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue): No

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: No Any chronic diseases: NO Any other diseases: No History of Hospitalization: No History of Vaccine: Yes Covid History of trauma: No

9: Past surgical history: History of surgery: Dental extraction

10- Drug history: Any drugs: No
11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular or irregular ? Regular When is menarche ? 12

14- Family History: Same disease in family?: Husband has Hepatitis C , parents alive? Yes inherited diseases?: No

15: Social History: Smoking or alcohol abuse? No Illegal sexual contact: ? No

16- Travel History: India (20 years ago)

17- Physical findings: Remarkable: Abdominal destination (The student was asked to perform shifting dullness and to say the rest of the examination verbally) and jaundice (Rest of the examination was unremarkable).

18- Differential diagnosis: viral hepatitis, autoimmune hepatitis, NASH, Liver cirrhosis

19- Investigation:

Test		Interpretation
HAV RNA IgM	**positive** **positive**	Acute infection
HAV RNA IgG	**negative** **positive**	postexposure or immunized

Test		interpretation
Anti-HCV HCV RNA	**negative** **negative**	Non-reactive
Anti-HCV HCV RNA	**positive** **positive**	current infection
Anti-HCV HCV RNA	**positive** **negative**	past infection

Test		interpretation
HBsAg Anti-HBc Anti-HBs	**negative** **negative** **negative**	Susceptible
HBsAg Anti-HBc Anti-HBs	**negative** **positive** **positive**	Immune due to natural infection
HBsAg Anti-HBc Anti-HBs	**negative** **negative** **positive**	Immune due to hepatitis B vaccine
HBsAg Anti-HBc IgM anti-HBc Anti-HBs	**positive** **positive** **positive** **negative**	acutely infected
HBsAg Anti-HBc IgM anti-HBc Anti-HBs	**positive** **positive** **Negative** **negative**	chronically infected
HBsAg anti-HBc anti-HBs	**negative** **positive** **negative**	Interpretation unclear; four possibilities: 1. Resolved infection (most common). 2. False-positive anti-HBc, thus susceptible. 3. "Low level" chronic infection. 4. Resolving acute infection.

20- Treatment and management:

- HAV: is generally self-limited. Offer supportive care: recommend rest as needed, consider symptomatic treatment, e.g., antiemetics and recommend alcohol avoidance

- HBV:
  - Lifestyle modification (Weight loss and Cessation of alcohol)
  - Antiviral treatment
    - Acute hepatitis: Pharmacological treatment is generally not indicated, and supportive care suffices.
    - Chronic hepatitis: **Nucleoside/nucleotide analogs (NAs):** Indicated in patients with both decompensated and compensated liver disease and patients who do not respond to interferon treatment. **Pegylated interferon alfa (PEG-IFN-α)**
  - Liver transplantation: End-stage liver disease due to HBV

- HCV: HCV infection is always treated with a multidrug approach (no antivirals are approved as monotherapy). **Direct-acting antivirals (DAAs):** Ledipasvir PLUS sofosbuvir or Sofosbuvir PLUS velpatasvir

Questions from examiner:

- What is the cause of ascites? Portal hypertension
- How to treat portal hypertension? Fix the liver problem then the portal hypertension will resolve

Case 20: Celiac disease

Case: 25 years old male had abdominal pain with diarrhea and scratching in his elbow for 6 months

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: Abdominal pain with diarrhea and scratching in his elbow for 6 months.

3- History of Presenting illness
Site: Central abdominal pain, Onset: Sudden, Character: clicky-crampy abdominal pain., Radiation: No, Alleviating Factor: Rest, Timing: Both abdominal pain and diarrhea increased over time but no factors behind
- Diarrhea is yellow and green in color and goes 3 times to the toilet for it and it comes with pain
Special Questions: Its important ask about the diet

4- Associated Symptoms: Nausea , Bony pain all over his body , Skin rash in his forearm, Fatigue.

5- Risk Factors: ◄ Anemia ◄ Type 1 DM ◄ Down's syndrome. ◄ Autoimmune thyroid disease ◄ IgA deficiency

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)
The patient is Afebrile , Lost 4kg , No night sweat, No loss of appetite .

7- Systematic review: Unremarkable
8- Past medical: -
9: Past surgical history: -
10- Drug history: -
11- Allergy: -
12- Blood transfusion: -
13- Menstrual history: -
14- Family History: Same disease in family? yes , brother has same symptoms parents alive? Yes inherited diseases?: No
15: Social History: Smoking or alcohol abuse? No.
16- Travel History: -
17- Physical findings: Exaggerated bowel sounds based on mannequin

18- Differential diagnosis : Celiac disease , IBD , IBS , lactose intolerance , gastroenteritis.

19- Investigation:
-Initial: Serology (Anti-transglutaminase antibodies (IgA) and IgG antigliadin antibodies)
-CBC: Anemia
-Gold standard: Endoscopy (villous atrophy and scalloping mucosa) with duodenal biopsy for confirmation
-Histopathology: flattening, villous atrophy and increased cellularity of lamina propria (plasma cells and lymphocytes)
-Gluten challenge
20: Treatment and management
Non-Pharmacological : Educate the patient , Gluten-free diet
Pharmacological: Painkillers for pain and fibers for diarrhea, Iron supplements, and Assess the risk of malignancy.

Questions from examiner:
- How to confirm the diagnosis? Biopsy -What would you see in the biopsy?
- Why does the patient have anemia? The main cause of iron deficiency anemia is impaired iron absorption. Consumption of gluten (found in the grains wheat, rye and barley) triggers an immune reaction that damages the intestinal villi. As a result, individuals are unable to adequately absorb enough iron from their diet and/or supplements.
- What gets absorbed in the duodenum? Iron ,Fat Soluble Vitamins(A, D, E, K), Calcium, Minerals, Carbohydrates /simple sugars, Fats, Amino Acids.
- What's positive when palpating the aorta? If hands move outwards, it suggests the presence of an expansile mass (e.g. abdominal aortic aneurysm).
- What cancers are associated with celiac? T cell lymphoma, Small bowel adenocarcinoma
-Your approach to diarrhea? And examples of each and how to differentiate between them
- What are the borders of Traube's triangle?

Case 21: IBD (Crohn's Disease)

Case: 52 years old female came to Clinic with fatigue, diarrhea and abdominal pain for six month

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: Abdominal pain , fatigue and diarrhea for six month

3- History of Presenting illness
Site: Central abdominal pain, Onset: Gradual, intermittent, progressive (both abdomen pain & diarrhea), Character: Colicky crampy abdominal pain , Alleviating Factor: partially improved with defecation,
Exacerbating factors: worse at night / when she eat pizza
Severity: Wakes her up from sleep
Diarrhea is Yellow in color, and watery , No mucus, No blood.

4- Associated Symptoms: Nausea and vomiting and bloating (2-3 times in the past 4 months), arthralgia, Extra intestinal symptoms for crohn's (uveitis, pyoderma gangrenosum…. etc) are NOT present

5- Risk Factors: Genetic (HLA-B27 and NOD2) , Smoking

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue)
Weight loss (9 Kg over 6 months), loss of appetite, the patient denied fatigue despite it being written in the case on the table

7- Systematic review: Unremarkable
8- Past medical: -
9: Past surgical history: -
10- Drug history: -
11- Allergy: -
12- Blood transfusion: -
13- Menstrual history: -

14- Family History: her sister has the same symptoms but don't take medications for it

15: Social History: Smoking or alcohol abuse? No.
16- Travel History: -
17- Physical findings: Unremarkable

18- Differential diagnosis : inflammatory bowel disease (ulcerative colitis/crohn's) and irritable bowel syndrome, celiac disease and lactose intolerance.

19- Investigation:
-Gold Standard: Endoscopy (cobblestone skip lesions sparing the rectum with ulcerated mucosa) + mucosal biopsy
-To monitor the disease activity:
Fecal Calprotectin: Indicates endoscopy (distinguish between IBS and IBD)
Inflammatory markers: CRP and ESR
-Imagining: Cross section enterography (preferred), small bowel follow through, US (initial), x-ray (complications)
-Serology: +ve Anti-Saccharomyces cerevisiae antibodies (ASCA) (Higher in crohn's than ulcerative colitis)
-To identify complications:
CMP: to monitor if there was malnutrition (low protein), end organ damage (high creatinine) and dehydration
CBC: to monitor iron and B12
What will you order if the patient is in the ER : barium follow through, anti-TTG, lactose enzyme test

20: Treatment and management
- First step: Rule out infection
-Anti TNF(infliximab)
- Immunomodulators (methotrexate and azathioprine)
-Corticosteroids: Systemic: Prednisolone Local: Budesonide

Questions from examiner:
-When will we have absent bowel sounds ? absence of sound indicate paralytic ileus
-For how long will you listen to the bowel sounds ? 30 sec to 2 mins
- will you palpate the liver on inspiration or expiration? expiration
- What is the exam for ascites? Shifting dullness and asked me to demonstrate it.
-What other exam? Fluid thrill and asked for demonstration
-where you percuss exactly to assess the liver span from the top ? 2nd intercostal space

Case 23: Achalasia

Case: Lana 30 years old came to Clinic with Difficulty swallowing for 3 years

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: Difficulty swallowing for 3 years

3- History of Presenting illness

Onset: 3 years, Alleviating Factor: eating slowly Special Questions: no pain, felt with solid & liquid (especially spicy food), no more heartburn

4- Associated Symptoms: Painful swallowing? GERD, DES, Esophagitis **Chest pain?** Spasm (relieved by nitrates but unlike ischemic heart disease it's unrelated to exertion). **Long-standing heartburn/regurge?** GERD stricture (ring) **Bad breath? Gurgling noise when you swallow?** Zenkers's diverticulum **Oral thrush? Oral ulcers?** esophagitis (candida, HSV)Inability to swallow (dysphagia), which may feel like food or drink is stuck in your throat

Achalasia symptoms: Regurgitating food or saliva, Heartburn, Belching, Chest pain that comes and goes, Coughing at night, Pneumonia (from aspiration of food into the lungs), Weight loss, Vomiting

5- Risk Factors: GERD? MS? Myasthenia gravis? Any NM disorder?

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue): NO

7- Systematic review: Unremarkable

8- Past medical Had GERD 10 years ago, experienced heartburn then

9: Past surgical history: -

10- Drug history: -

11- Allergy: -

12- Blood transfusion: -

13- Menstrual history: -

14- Family History: -

15: Social History: Smoking or alcohol abuse? No.

16- Travel History: -

17- Physical findings: Unremarkable: mentioning lymph nodes verbally

18- Differential diagnosis: Achalasia, Esophageal cancer, Stricture (Didn't accept GERD, esophageal spasm or esophagitis because they come with pain)

19- Investigation:

- Barium swallow (initial): dilated esophagus and tight LES → bird beak appearance
- Manometry (confirmatory): failure of LES to relax, Aperistalsis of esophagus, LES incomplete/absent relaxation
- Endoscopy: Retained liquid and food in the esophagus without mechanical obstruction, Rule out adenocarcinoma (achalasia carries a higher risk for squamous cell cancer of esophagus)

20: Treatment and management

1. Surgical: Heller's myotomy, (or pneumatic dilation which is less invasive but risk of perforation)
2. Endoscopic therapy: Pneumatic dilatation, Botox injection at LES, Peroral endoscopic myotomy
3. Pharmacological: CCB, Nitrate, Antimuscarinic agents.

Questions from examiner:

"What are you looking for in deep palpation?" "Organomegaly" "For what organs?" "Liver, spleen.."

"Explain what you are doing in shifting dullness? When will you stop percussing?"

How would you differentiate between a splenomegaly and renal mass? spleen enlarges diagonally, towards the umbilicus and the RLQ, whereas the kidney enlarges inferiorly, to the ipsilateral pelvis.

How would you know if a mass is attached to the kidney vs attached to the spleen?

How do you figure out if a mass is attached to the liver?

Case 24: PUD

Case: 71 yo male came to the ER complaining of intermittent melena 2 months ago. With weight loss.

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: dark stool, abdominal pain, palpitation, weight loss.

3- History of Presenting illness

A- Abdominal pain :

Site: Generalized or localized ? in which quadrant ? Epigastric region , Onset: Gradual, intermittent, progressive (both abdomen pain & diarrhea), Character: Colicky ? (IBS) Heartburn ? (GERD) Burning ? (PUD), Steady ? Sharp ? dull ? Radiation : To the Back : Pancreatic disease, Penetrating peptic ulcer, To the Shoulder : Diaphragmatic irritation , To the Neck : GERD, Shifting from Umbilical to RLQ : Appendicitis , Alleviating Factor: Eating foods ? (PU -> Duodenal) Antacid drugs ? (GERD) Exacerbating factors: Eating ? (PU -> Gastric), After fatty meal ? (GB disease)
Special Questions : Did you change your diet recently ? Is it related to any type of food ? IF` yes : Can you tell which time you feel the pain after eating ?

B- Dark stool:

Site: Onset: Sudden, Character: Is it Fresh (Hemorrhoids or high Upper gi bleeding but rare) ? Mixed with stool ? Streaked on the stool surface ? or clotting blood (Upper gi bleeding) ? Radiation , Alleviating Factor Exacerbating factors: Special Questions : ACCO ? Amount ? Color ? Frank, Bright or Dark tarry (Melena) , Content : Mucus ? Oder or not ? Is defecation painful or painless (Anal fissure) ? Did you feel any mass of prolapse from anus (Hemorrhoids) ? Is bleeding related to defecation ? is it appear after or before defecation ? Did you have any itching at the anal area ? Recent history of Epistaxis or hemoptysis (Bleeding disorders) ? IS there any spontaneous bruins or bleeding from other sites (Bleeding disorders) ?

4- Associated Symptoms: Jaundice , Hematemesis, Dysphagia, Odynophagia, Heartburn, and acid regurgitation, Nausea/ Vomiting, Abdominal distention, Constipation, Diarrhea, Melena and rectal bleeding, Anal prolapse, pain, Perianal, itching, Bleeding Discharge.
Internal Hemorrhoids : Bright red Painless bleeding, Prolapse, Itching External hemorrhoids : Bright red painful Bleeding, Prolapse, Itching, Anal FIssure : Continous pain start with defecation, and relived with time, Blood is streaks on stool, Puritic ani, Colon cancer : Changes in bowel habits (Diarrhea/Constipation), Persistent abdominal discomfort NNWAFF, Ulcerative colitis : Blood mixed with mucus, Intermitent diarrhea.

5- Risk Factors: HTN , Portal HTN, Liver disease , Smoking , Alcohol, Excess Coffees, stress in PU, any condition that causes immune suppression (DM, SCD, AIDS, Chemotherapy)

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue):
Positives : Nausea , Weight loss, loss of appetite (Pancreatitis) , Fatigue, Fever (IBD, or Cholangitis)

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: No Any chronic diseases: NO Any other diseases: No History of Hospitalization: No History of Vaccine: Yes Covid History of trauma: No

9: Past surgical history: History of surgery: Dental extraction

10- Drug history: Any drugs: No Nsaids

11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular or irregular ? Regular When is menarche ? 12

14- Family History: Same disease in family?: no, parents alive? no inherited diseases?: No

15: Social History: Smoking or alcohol abuse? Yes , smoke 2 packs a year with occisional alcohol Illegal sexual contact: ? No

16- Travel History: Moroco 3 years ago
17- Physical findings: Unremarkable

18- Differential diagnosis: PUD, Gastric Cancer, Esophageal cancer

19- Investigation (for cancer & ulcer):
Invasive:

- Endoscopy with biopsy (gold standard):
- Rapid urease test: If tissue changes color → test is +ve
- Histology: confirms diagnosis.
- Culture: in refractory cases for antibiotic susceptibility.

Non invasive: (for H. pylori. used to measure the effect of treatment)

- Urea breath test: best to confirm diagnosis BUT, patient has to be off PPIs.
- Stool antigen: best to confirm eradication.
- CBC, Electrolytes (bleeding)

CXR: If perforation is suspected (air under the diaphragm)
Barium meal
Serum gastrin levels (screen for Zollinger-Ellison syndrome)
LFT to rule out liver disease

20: Treatment and management

- Pt was tachycardic and hypotensive so first stabilize
- Endoscopic treatment if there is GI bleeding
- PPI
- Triple / Quadruple therapy if H. Pylori is positive

Questions from examiner:
- If the patient has a huge ascites what maneuver to use? Thrill
- What treatments can you give while performing the endoscopy? Epinephrine and PPI

Case 25: UGI Cancer

Case: 71 yo male came to the ER complaining of intermittent melena 2 months (or weeks not sure) ago. With weight loss.

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: Melena with blood, abdominal pain, palpitation, weight lost.

3- History of Presenting illness

A- Abdominal pain :

Site: Generalized or localized ? in which quadrant ? Epigastric region , Onset: Gradual, intermittent, progressive (both abdomen pain & diarrhea), Character: Colicky ? (IBS) Heartburn ? (GERD) Burning ? (PUD), Steady ? Sharp ? dull ? Radiation : To the Back : Pancreatic disease, Penetrating peptic ulcer, To the Shoulder : Diaphragmatic irritation , To the Neck : GERD, Shifting from Umbilical to RLQ : Appendicitis , Alleviating Factor: Eating foods ? (PU -> Duodenal) Antacid drugs ? (GERD) Exacerbating factors: Eating ? (PU -> Gastric), After fatty meal ? (GB disease)
Special Questions : Did you change your diet recently ? Is it related to any type of food ? IF` yes : Can you tell which time you feel the pain after eating ?

B- Melen + Hematocezia :

Site: Onset: Sudden, Character: Is it Fresh (Hemorrhoids or high Upper gi bleeding but rare) ? Mixed with stool ? Streaked on the stool surface ? or clotting blood (Upper gi bleeding) ? Radiation , Alleviating Factor Exacerbating factors: Special Questions : ACCO ? Amount ? Color ? Frank, Bright or Dark tarry (Melena) , Content : Mucus ? Oder or not ? Is defecation painful or painless (Anal fissure) ? Did you feel any mass of prolapse from anus (Hemorrhoids) ? Is bleeding related to defecation ? is it appear after or before defecation ? Did you have any itching at the anal area ? Recent history of Epistaxis or hemoptysis (Bleeding disorders) ? IS there any spontaneous bruins or bleeding from other sites (Bleeding disorders) ?

C- Weight loss :

Special questions : Onset : When did you notice it ? Did you notice it or someone else did ? Character : Was is sudden or gradual Have you being losing more weight or is it fixed now ? Was intentional or not ? : was it associated with certain diet ? did your food intake change ? Have you lost your appetite ? Special questions : How much weight have you Lost ? Have your spouse lost weight too ?

4- Associated Symptoms: Jaundice , Hematemesis, Dysphagia, Odynophagia, Heartburn, and acid regurgitation, Nausea/ Vomiting, Abdominal distention, Constipation, Diarrhea, Melena and rectal bleeding, Anal prolapse, pain, Perianal, itching, Bleeding Discharge.
Internal Hemorrhoids : Bright red Painless bleeding, Prolapse, Itching External hemorrhoids : Bright red painful Bleeding, Prolapse, Itching, Anal FIssure : Continous pain start with defecation, and relived with time, Blood is streaks on stool, Puritic ani, Colon cancer : Changes in bowel habits (Diarrhea/Constipation), Persistent abdominal discomfort NNWAFF, Ulcerative colitis : Blood mixed with mucus, Intermitent diarrhea.

5- Risk Factors: HTN , Portal HTN, Liver disease , Smoking , Alcohol, Excess Coffees, stress in PU, any condition that causes immune suppression (DM, SCD, AIDS, Chemotherapy)

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue):
Positives : Nausea , Weight loss, loss of appetite (Pancreatitis) , Fatigue, Fever (IBD, or Cholangitis)

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: No Any chronic diseases: NO Any other diseases: No History of Hospitalization: No History of Vaccine: Yes Covid History of trauma: No

9: Past surgical history: History of surgery: Dental extraction

10- Drug history: Any drugs: No Nsaids

11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular or irregular ? Regular When is menarche ? 12

14- Family History: Same disease in family?: no, parents alive? no inherited diseases?: No

15: Social History: Smoking or alcohol abuse? Yes , smoke 2 packs a year with occisional alcohol Illegal sexual contact: ? No

16- Travel History: No

17- Physical findings: Unremarkable

18- Differential diagnosis: UGI cancer , GI ulcer,

19- Investigation:
CBC
LFT to rule out liver disease
Endoscopy (best initial and confirmatory test)
Radiological:
Barium swallow
- Proximal dilatation (apple core lesion)
- Irregular borders of the esophagus
- Stenosis

Chest and abdominal CT: used for staging only
Other PUD investigations

20: Treatment and management
ABC (important)
Dr: If we did an endoscopy and there was cancer (not sure where's the location but I think he said esophagus) how would you manage the patient?
Answer: Neoadjuvant chemotherapy followed by resection, but if there's metastasis chemo only.
Ulcer management? PPI. (Don't say triple or quadruple therapy unless H.pylori is confirmed)

Questions from examiner:
- PPI route? IV since it's in the ER
- CBC looking for what? Anemia

Case 26: Liver cirrhosis

Case: Lana 71 came to ER complaining of Swelling And Jaundice for 7 months

1- Biodata: - Name , Age , Gender, Occupation , Residency , Route and date of admission.

2- Chief complaint: Jaundice and Edema

3- History of Presenting illness:

A- Jaundice :
Site : Eyes , Hands , (Palm) Face (Skin) Onset: Gradual Character: - Radiation: - Alleviating Factor: Fasting ? No
Timing: (1- Course: Continues 2- Pattern: progressive) Exacerbating factors: Food ? No Severity: 7
Special Questions:
When did you notice it ? and who noticed it ? Few weeks ago by my mother
Do you have skin itchiness ? No Have you had any fever (Cholangitis) ? NO
Have you had a change in your appetite or weight loss (Malignancies)? NO
Have you started any new medication recently ? NO

B- Edema :
Site : Generalized or localized ? one side or both (if the peripherals were involved or specified there) ? if so are the on the same level ? Onset : Sudden or gradual ? Character : Pitting or non pitting ? Alleviating factors : bed rest ? Elevation of leg ? Walking (Due to muscle action), Medication (Diuretics) ? , Exacerbating factors : Standing ? ,
Special Questions :
Does it disappear after night sleep ? Is it associated with pain or ulcer ? Are there any part of the body swelling ?

4- Associated Symptoms:
a- Jaundice :
Prehepatic causes : Fatigue , chillies , Tea colored urine , Exertional dyspnea , Palpitation , fever.
Hepatic causes : Bleeding tendency , Ascites , Lower limb swelling.
Posthepatic causes : RUQ pain, Clay stool , Dark urine, Pruritus.
Malaria : Fever , rigors , Cold , Sweating

B- Edema :
Endocrine : (Hypothyroidism) Constipation , Cold intolerance, Weight gain, Sleepy , Infectious : Fever , Rigor
Renal : (Nephrotic syndrome) Oliguria , Frothy urine , CVS : (HF) : Orthopnea, PND , Dyspnea, Fatigue, Weight gain , Intermittent claudication, (DVT) : Tender leg swelling GIT : Jaundice, Purities, Ecchymosis

5- Risk Factors: Liver disease , Hyperlipidemia , contact with Jaundice (Hepatitis) , Hx of Gallstone , Traveling to endemic area., HTN, DVT, history of immobilization

6- Constitutional symptoms: NNWAFF (Nausea, Night sweat, Weight loss, Loss of appetite, Fever and Fatigue): No

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: No Any chronic diseases: NO Any other diseases: No History of Hospitalization: No History of Vaccine: Yes Covid History of trauma: No

9: Past surgical history: History of surgery: Dental extraction

10- Drug history: Any drugs: No
11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular or irregular ? Regular When is menarche ? 12

14- Family History: Same disease in family?: Husband has Hepatitis C , parents alive? Yes inherited diseases?: No

15: Social History: Smoking or alcohol abuse? No Illegal sexual contact: ? No

16- Travel History: No

17- Physical findings: Unremarkable

18- Differential diagnosis
Liver cirrhosis due to viral hepatitis. Autoimmune hepatitis. NASH

19- Investigation:
CBC LFT US Anti Hep b&c

20: Treatment and management
For portal hypertension: BB and Octreotide. For increased ammonia: lactulose
For the viral hepatitis: antiviral
Diuretics. Salt restriction.
Ascites Aspiration(Paracentesis).

Questions from examiner:
- Asked about Investigation for autoimmune ANA & ASMA
- He told me explain the shifting dullness and fluid thrill
- Why do you palpate the abdomen: to check for any masses or pulses

Case 27: Acute Bacterial Peritonitis secondary to liver cirrhosis

Case: A 46 years old female came to the ER (vitals: all normal except fever)

1- Biodata

Age: 46 yo Gender: Female Route and date of admission: Emergency

2- Chief complaint: Abdominal pain and fever for 3 days

3- History of Presenting illness

Site: All over her abdomen Onset: 3 days ago. Character: Progressive and constant. Exacerbating factors: Physical activity. :

A- Jaundice :

Site : Eyes , Hands , (Palm) Face (Skin) Onset: Gradual Character: - Radiation: - Alleviating Factor: Fasting ? No
Timing: (1- Course: Continues 2- Pattern: progressive) Exacerbating factors: Food ? No Severity: 7
Special Questions:
When did you notice it ? and who noticed it ? Few weeks ago by my mother
Do you have skin itchiness ? No Have you had any fever (Cholangitis) ? NO
Have you had a change in your appetite or weight loss (Malignancies)? NO
Have you started any new medication recently ? NO

B- Edema :

Site : Generalized or localized ? one side or both (if the peripherals were involved or specified there) ? if so are the on the same level ? Onset : Sudden or gradual ? Character : Pitting or non pitting ? Alleviating factors : bed rest ? Elevation of leg ? Walking (Due to muscle action), Medication (Diuretics) ? , Exacerbating factors : Standing ? ,
Special Questions :
Does it disappear after night sleep ? Is it associated with pain or ulcer ? Are there any part of the body swelling ?

C- Abdominal pain :

Site: Generalized or localized ? in which quadrant ? Epigastric region , Onset: Gradual, intermittent, progressive (both abdomen pain & diarrhea), Character: Colicky ? (IBS) Heartburn ? (GERD) Burning ? (PUD), Steady ? Sharp ? dull ? Radiation : To the Back : Pancreatic disease, Penetrating peptic ulcer, To the Shoulder : Diaphragmatic irritation , To the Neck : GERD, Shifting from Umbilical to RLQ : Appendicitis , Alleviating Factor: Eating foods ? (PU -> Duodenal) Antacid drugs ? (GERD) Exacerbating factors: Eating ? (PU -> Gastric), After fatty meal ? (GB disease)
Special Questions : Did you change your diet recently ? Is it related to any type of food ? IF` yes : Can you tell which time you feel the pain after eating ?

4- Associated Symptoms:

a- Jaundice :

Prehepatic causes : Fatigue , chillies , Tea colored urine , Exertional dyspnea , Palpitation , fever.
Hepatic causes : Bleeding tendency , Ascites , Lower limb swelling.
Posthepatic causes : RUQ pain, Clay stool , Dark urine, Pruritus.
Malaria : Fever , rigors , Cold , Sweating

B- Edema :

Endocrine : (Hypothyroidism) Constipation , Cold intolerance, Weight gain, Sleepy , Infectious : Fever , Rigor
Renal : (Nephrotic syndrome) Oliguria , Frothy urine , CVS : (HF) : Orthopnea, PND , Dyspnea, Fatigue, Weight gain , Intermittent claudication, (DVT) : Tender leg swelling GIT : Jaundice, Purities, Ecchymosis

5- Risk Factors: Liver disease , Hyperlipidemia , contact with Jaundice (Hepatitis) , Hx of Gallstone , Traveling to endemic area., HTN, DVT, history of immobilization

6- Constitutional symptoms: NNWAFF : Fever and Fatigue

7- Systematic review: Unremarkable

8- Past medical Any similar Attacks: No Any chronic diseases: NO Any other diseases: No History of Hospitalization: No History of Vaccine: Yes Covid History of trauma: No

9: Past surgical history: History of surgery: Dental extraction

10- Drug history: Any drugs: No

11- Allergy: History of allergy: No

12- Blood transfusion: Any history of blood transfusion: No

13- Menstrual history: Regular or irregular ? Regular When is menarche ?

14- Family History: Same disease in family?: Husband has Hepatitis C , parents alive? Yes inherited diseases?: No

15: Social History: Smoking or alcohol abuse? No Illegal sexual contact: ? No

16- Travel History: No

17- Physical findings: : After stabilizing the patient -> JVP high = caput medusa, spider nevi and ascites were positive

18- Differential diagnosis Acute bacterial peritonitis, liver cirrhosis, hepatitis.

19- Investigation:
Ascites tapping (paracentesis) and send the fluid for culture, chemistry (protein), ultrasound, CBC, blood chemistry, blood culture, LFT, fibroscan, Triphasic CT to rule out HCC.

20: Treatment and management
-Ensure ABCs first, Abx
-octreotide for PHTN
-lactolouse for encephalopathy
-paracentesis for symptomatic relief
-Diuretics and salt restriction
-Pneumococcal/influenza/HepA&B vaccines

Questions from examiner:
What are the borders of traube's triangle?
how to determine if the patient stable or not? (chest pain, SOB, hypotension, confusion)
-he asked me how will i (paplate) the spleen? and if there was a special test for its palpation. i said the **bimanual maneuver**. but he said cant u think of something else? …
-he asked me about the borders of Traub's triangle?
- What do we call the cyanosis under the tongue? **Centeral cyanosis**
- What are you looking for in **superficial palpation**? Tenderness, Guarding.
- What will you do after the **GI examination**? DRE (Digital rectal examination) The **MOST important** one, Genitourinary examination, and other systems like CVS.

Physical examination (Abdominal Examination): CLICK HERE!

1- WIPPPER: Wash hand, Introduce yourself, Insure patient Privacy, Position: Laying flat and Permission, Exposure: Nipple to mid-thigh

2- ABCCDE: Appearance (young/middle aged/old, looks well or ill) Body built (overweight, thin or normal) Color (pale, cyanosis, jaundice) Connections (IV cannula, oxygen mask, nasal cannula, holter monitor, nasogastric tube) Distress (in pain, using accessory muscles in breathing, abnormal movements) Else (Consciousness, Alertness and orientation to person, place and time)

3- Vital Signs: BP, RR, HR, O2 saturation.

4- Inspection **compare!**

A- Hands :

- Dorsum: Tendon xanthoma → Hyperlipidemia , Muscle wasting → e.g. Cancer , Any skin pigmentation or scars Tar staining → Smoking , and Check the temperature → Peripheral perfusion
- Palm: Palmar erythema → High estrogen level > liver diseases , Palmar xanthoma → Hyperlipidemia Flapping tremor → Ammonia , Dupuytren's contracture → Alcoholic , Peripheral Cyanosis → Low O2 saturation
  Pallor → Anemia

B- Nails

- Clubbing → IBD, Cirrhosis , Koilonychia → Anemia , Leukonychia → Hypoalbuminemia,
- Half and half sign → CKD

C- Arms :

- Rash , Any scar that indicate IV drug abuse , Bruising and Petechiae → Uremia , Eczema , Scratch mark (uremic pruritus) , Acanthosis Nigricans , Spider naevi , Subcutaneous nodules, Radial Pulse "Comment on Rate, Rhythm and character", AV fistula → Dialysis

D-Face :

- Cyanosis → Low O2 in the blood
- Eyes:: Pallor → Anemia, Xanthelasma → Hyperlipidemia, Ideally l should do fundoscopy to look if there are any diabtic or hypertensive changes, Jaundice, Kayser-Fleisher Ring

E- Mouth :

- Oral hygiene → IE , Central cyanosis → Poor circulation, Angular Stomatitis → Anemia Uremic Fetor , Gum Hypertrophy → Drugs ADR, Glossitis , if. Mouth Ulcer → IBD Fetor hepaticus

F- Neck :

- Carotid artery (character,volume,bruit) , JVP , Lymph nodes

G- Chest :

Spider naevi and Gynecomastia

H- Abdomen

- Abdomen Contour, Distension, Umbilicus: (Inverted or everted), Visible mass:
- 3Ps: Prominent veins . Peristalsis . Visible pulses
- 5Ss: Scars Skin lesions . Skin discoloration Striae Stoma bag
- Hernia: Ask the patient to cough

5- Palpation:

ask if the patient in pain or not before the palpation"

A- Superficial palpation:

- Superficial masses , Tenderness , Guarding or rigidity , Rebound tenderness → Acute appendicitis
- Hernia: ask the patient to cough (palpate the umbilicus, right groin and left groin when you asking the patient to cough)

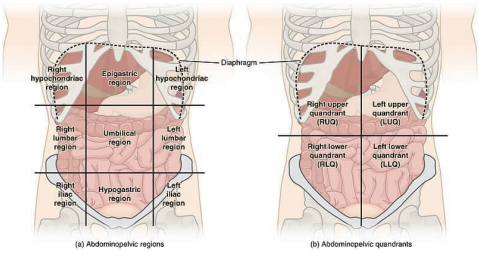
B- Deep palpation:

a. Deep masses , Tumors or organomegaly

C- Organ palpation:

- Liver , Spleen , Gallbladder , Kidneys , Urinary bladder , Abdominal Aortic aneurysm

6- Percussion:



- Liver , Urinary bladder ,and Spleen
- Ascites: , Shifting dullness and Fluid thrill

7- Auscultation:

- Bowel Sounds
- Friction rub: Auscultation over the liver and spleen → Peritoneal abnormality
- Bruits:, Aortic bruits: Auscultation above the umbilicus , Renal bruits: Auscultation 2.5 cm above and lateral to the umbilicus

8- Associated Examinations:

- Ideally I should check Murphy punch → Costovertebral angle tenderness: pyelonephritis
- Chest: check if there are any

a. Signs of HF
b. Signs of pleural effusion and pulmonary edema

- Back:

a. Basal Crackles
b. Sacral edema

- Lower limb:

a. Livedo reticularis
b. Lower limb edema " pitting edema"
c. Peripheral pulses

- Ideally I should end the examination with per rectal and external genitalia examination

في الختام نود شكر كل من قام بهذا العمل أو ساعد على تطويره

لا تنسونا من دعائكم