

CLINICAL SKILLS



Subject : Cases Scenario-CVS

Lecture :

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الفريق العلمي - النادي الطبي





Clinical Skills

ركزوا بالمحاضرة لأنها مهمة وبيجي منها اسئلة كثير ♥
فرغت هاي المحاضرة وقت فاينل CVS ف ادعولي يكون
الرمز احسن من توقعاتي 🙏

Cardiology Case Scenarios

Consultation Skills to review:

- Introduction
- Opening question and active listening skills
- Open to closed questions

Specific history questions

شرح هاد وحكى الباقي ما بدو فيه تفاصيل

- Breathlessness (exercise tolerance – distance (NYHA classification – Class I – no limitation, Class II – slight limitation, Class III – marked limitation, Class IV – symptoms present at rest (severe heart failure)), orthopnoea, PND) → **اهم وحدة**
- Palpitations (mode of onset and termination, triggers – exercise, alcohol, caffeine, frequency, duration of attacks, rhythm – regular and fast or irregular (ask patient to tap it out), associated with syncope?)
- Syncope (loss of consciousness – on standing (postural hypotension), with palpitations (arrhythmias) or on exertion (left ventricular outflow obstruction - aortic valve stenosis or hypertrophic cardiomyopathy))
- Differentiate syncope from fainting – vasovagal – sudden bradycardia 2ry to stimuli

- Summarisation
- Signposting
- Differentiating between unstable angina and stable angina and MI
- Consider higher level consultation skills such as explanations to patients e.g. what is angina? What words would you use to describe it?
- Consider smoking cessation advice and motivating patients to change lifestyle choices
- Consider advising patients on low cholesterol diets

#بدنا نركز ع كم معلومة نظرية من **specific history questions**:

اول شغلة هي **Breathlessness (dyspnea)** بشوفها مع امراض القلب وتحديدًا مع **angina, ischemic heart disease** بتكون عبارة عن **exertional induced dyspnea**.

طبعا **dyspnea** هاي الها **grades**.. بس في **grade** مرتبطة ب **heart failure** وهي **NYHA Classification** ، بتقلق انو بناء ع **dyspnea** وكم عاملة **exercise limitation** اللي بتعملها خلال اليوم

بقسم **dyspnea** منها إلى **4 classes** (طبعا من ١ ل ٤ بتزيد عندي خطورة **dyspnea**) مهمين كثير ركزوا!!! : **مفظة**

بالتالي الشخص هاد ببذل جهد طبيعي وما بتأثر **limitation** مافي اي : **Class 1**

Class 2 : **slight limitation** بكون في

Class 3 : **marked limitation**

Class 4 : **at rest** بتصير ، HF + orthopnoea + PND هون بكون بأشد مراحل ،

يعني إذا حكالي انو في واحد بصحى بعد ساعة ساعتين من نومه مخنوق ومو قادر يتنفس بعرف انو عنده **class 4**

تاني شغلة مهم نسأل عنها هي **palpitations**، طبعا مهم تسأل **onset** ، كيف بلشت كيف انتهت ، وشو الشغلات اللي بتزيدها وبتقللها، وهل لها علاقة بالكافيين والكحول ، وينسأل كمان إذا هاي **palpitation associated with syncope** لانو **syncope** هي نفسها **loss of consciousness** ويمكن تكون **on standing** يعني الشخص اول ما يوقف بتيجي **syncope** وهون بدي افكر ب :

Postural hypotension .

لما يوقف الشخص بقل **systolic blood pressure** اكثر من ٢٠ وبقل **diastolic** اكثر من ١٠

لو يوقف الشخص بقل **syncope associated with palpitation** فهاد دليل ع انه **arrhythmia** هي اللي عاملة **syncope** و اشهر نوع بعملها هو **bradyarrhythmia** .

لو كانت **syncope associated with exertion** تدل على **decrease in cerebral blood flow** لانو القلب مو قادر يسخ

الدم ويطلع عن طريق **aorta** وهو **left ventricular outflow obstruction** بسبب:

aortic stenosis يعني عندي تضيق ب **aortic valve** وبالتالي الصمام مو قادر يفتح منيح ليضخ

الدم من **LV** ل **aorta** فبصير ضخ الدم بكميات اقل من الكميات المعتادة (بتيجي مع الناس الكبيرة

بالعمر بسبب التكلس و بكون في **slow rising pulse**) خلال **rest** بكون الوضع عادي

عندك كمان **hypertrophic cardiomyopathy** بتسبب **LV obstruction** لانو بقل قدرة القلب ع

تعبئة الدم ، ويضغط ع **leaflet** تبعت **aorta** ويضيق الصمام .

آخر شي بدي اميز بين **syncope + fainting** وال **fainting** بتيجي مع الناس اللي عندهم

vasovagal attack (بخافوا من الدم) ف لما يخاف **vasog stimulation** ف بأدي ل **bradycardia**





Clinical Skills

Clinical Areas

- Angina / Myocardial Infarction ✓
- Heart Failure ✓
- Endocarditis Information in endocardium + valves
- Arrhythmias (e.g. AF versus heart block versus SVT) ✓
- Cardiac valvular disease ✓
- Peripheral vascular disease ✓
- Aortic dissection ✓

Week 4 - Scenario 1 Student Doctor

You are a 4th year medical student at your medical emergency department. You are asked to see a 56 year old male patient named Mahmood who has just arrived in. Introduce yourself and begin taking your history as you normally would. At the end summarize back to the patient the history in their own words. Inform the patient of your action plan – what will you do next?

Week 4 – Scenario 1 Male Patient

Mahmood Abadi } اtherosclerosis heart disease risk ل بزيديا
56 years old
Zerka
Family of 6 – 4 children
Works as a Company Manager for a building company

Ischemic heart disease
لانو بزيد معهم الوجع مع
stressful + exercise
↑

PC: Chest pain سocrates بدنا نحلها ب

ممكن تستثني فكرة pericarditis ولكن aortic dissection, MI, angina موجودين

HPC: Sudden onset of chest pain 2 hours ago whilst sitting in a stressful meeting

الوجع اله اكثر من ١٠ د
فأكثر شي بفكر فيه هو

Central and radiating to both shoulders → angina + MI

Like heavy weight on chest Chest tightness + crushing chest pain

9/10 pain scale → MI

Associated with sweating and red face, vomited once

Feels like you are going to die (impending doom) ← كثير مميزة لـ MI

PMH: Previous episode of chest pain when walking up Jebel Weibdeh last month that disappeared when you stopped walking دليل ع انه كان عنده stable angina at rest بعدها انقلب ل MI

Risk factors for ischemic heart disease:

- 2014 Diabetes
- 2010 Hypertension
- 2011 High cholesterol

DH: Glibenclamide 5mg in morning للسكري

Lisinopril 5mg in morning ACE inhibitor

Simvastatin 40mg at night HMG-CoA reductase

SH: Smoker since age 20 years Strong risk factor related to IHD + hyperlipidemia

No alcohol intake





Clinical Skills

Scenario 1 Case Discussion – Potential Myocardial Infarction

- What went well? What did everyone else think went well? Anything you felt you could have done differently? What do you need to focus on for the future?
- Is there any more information you would like to know (or does anyone else want to know)?
- How do you distinguish between stable and unstable angina and MI? (Stable angina when you exert yourself e.g. up hill – pain goes away when you stop the activity, **unstable angina when occurs at rest or minimal exertion** – MI suspicious if pain lasts more than **20 minutes** and not relieved by GTN spray / tablets – emergency situation) ^{أو ١٥}

٢٥٠
MI فكر بـ
+ unstable

- What are the risk factors for IHD?

- Smoking
- High cholesterol
- Family History
- Excessive alcohol
- Obesity
- Age
- Sex (M>F)
- High BP
- Diabetes

premenopausal women are relatively protected against atherosclerosis in the absence of other risk factors due to estrogen. After menopause, incidence increases.

Postmenopausal are not protected against Atherosclerosis even with hormonal (estrogen) therapy .
وهيك بتصير ال incident انه يصير عند المرأة من IHD هي نفسها عند الرجل

very important *

What will you do next?

Examine them – Pulse, BP, listen to heart sounds and chest

Organise ECG quickly – discuss ECG changes looking for

Take bloods for cardiac enzymes and determine whether MI and need to thrombolyse (discuss criteria – ST elevation (2 small squares in 2 corresponding anterior leads or 1 small square in 2 corresponding inferior leads) + raised cardiac enzymes)

بهمني أميز بين **MI, stable, unstable** وحكيانا انو **stable** بتيجي ع شكل **episoding** ويتكون اقل من ١٠ د ومع **shortness of breath** والخطورة تبعتها **mild**، بتصير احسن مع الراحة او مع **nitroglycerin**، إذا بطلت تتحسن عليهم او زادت ال **severity** تبعتها بدي أفكر بـ **MI, unstable angina** وخاصة **MI** ويتطول اكثر من ٢٠ د .. ومهم نعرف انه **stable** اسمها **exertional angina**

ب **examination** بدي اركز ع **pulse** غالبا الناس اللي عندها **MI** بلاقي عندها **Tachycardia** وممكن الاقي عندهم ال **BP** كتيبير عالي (**hypertensive emergency**) اللي يكون عندهم **systolic** اكثر من ١٨٠ ، **diastolic** اكثر من ١٢٠) بالتالي لازم انزل **BP** بدي أسمع إذا في **abnormality** ب **heart sounds** ول **chest** ..

بعد **examination** بدي اعمل **ECG** عشان أشوف إذا في **ST segment elevation** اللي بتدل ع وجود **MI** او إذا في **ST depression** اللي بتدل ع وجود **ischemia** ولا نورمال ف بدي أفكر بـ **stable angina** .

بعد هيك بدي اعمل **blood test** لل **cardiac enzymes** .. لما اقل **blood supply** لل **cardiac myocyte** رح تموت ويطلع من داخل **cardiac enzymes** منهم : **CK-MB** ، **creatinine** ، **troponin** و **myoglobin** ووجودهم دليل ع **MI**

المعلومة المهمة إذا حصلت ع **ST elevation** وعشان ينطبق عليها الارتفاع لازم ترتفع اكثر من 2 small square in 2 corresponding anterior leads (V1-V4) او اكثر من 1 small square in 2 corresponding inferior leads (aVF, lead2+3)

raised cardiac enzymes +++ هاي مهمة عشان أميز إذا عندي **MI** مو **Unstable angina** وكمان غالبا ما يكون في تغيرات ب **ECG** لل **unstable** بس بحالة **MI** لا يكون في **ST elevation (STE-MI/ NSTMI)**

بعالج **MI** بـ **thrombolytics** او بـ **catheterisation**



جاووا سوال بالمد عن عوصن من اعراض

الادوية .

(الاضلاع ادرسو)

4.7 Symptoms related to medication	
Symptom	Medication
Angina	Aggravated by thyroxine or drug-induced anaemia, e.g. aspirin or NSAIDs
Dyspnoea	Beta-blockers in patients with asthma Exacerbation of heart failure by beta-blockers, some calcium channel antagonists (verapamil, diltiazem), NSAIDs
Palpitation	Tachycardia and/or arrhythmia from thyroxine, β_2 stimulants, e.g. salbutamol, digoxin toxicity, hypokalaemia from diuretics, tricyclic antidepressants
Syncope/presyncope	Vasodilators, e.g. nitrates, alpha-blockers, ACE inhibitors and angiotensin II receptor antagonists Bradycardia from rate-limiting agents, e.g. beta-blockers, some calcium channel antagonists (verapamil, diltiazem), digoxin, amiodarone
Oedema	Glucocorticoids, NSAIDs, some calcium channel antagonists, e.g. nifedipine, amlodipine

ACE, angiotensin-converting enzyme; NSAIDs, non-steroidal anti-inflammatory drugs.

* flex

4.5 New York Heart Association classification of heart failure symptom severity	
Class	Description
I	No limitations. Ordinary physical activity does not cause undue fatigue, dyspnoea or palpitation (asymptomatic left ventricular dysfunction)
II	Slight limitation of physical activity. Such patients are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnoea or angina pectoris (symptomatically 'mild' heart failure)
III	Marked limitation of physical activity. Less than ordinary physical activity will lead to symptoms (symptomatically 'moderate' heart failure)
IV	Symptoms of congestive heart failure are present, even at rest. With any physical activity, increased discomfort is experienced (symptomatically 'severe' heart failure)

Week 4 - Scenario 2 Student Doctor

You are a 4th year medical student in the cardiology outpatient clinic at Prince Hamza Hospital. You are asked to see a 75 year old male patient named Ibrahim who has new onset of breathlessness and leg swelling. Introduce yourself and begin taking your history as you normally would. At the end summarize back to the patient the history in their own words.

Week 4 – Scenario 2 Male Patient

Ibrahim Ben Hani
75 years
Mafrq
Iraqi descent
Large family – married twice and have 16 children

* هوه حكي انا هو Breathlessness ومن فترة طويلة، فسا ممكن
انكوما Respiratory لكن لما حكي انا هو انتفاخ برطو هوه نيت
انا Heart failure، وعشان نتأكد رج نلاقي انا JVP عالي.
↪ Jugular vein pressure

Cardiac Failure
↪ JVP

PC: Breathlessness over the last few months and both legs are swollen in the last few weeks

الشكوى

↪ This indicates worsening by time

HPC: 4 months breathless – especially climbing stairs and now when walking from bedroom to bathroom

At night you need 4 pillows to prop you up because if you slip down the pillows you feel breathless and even wake up on occasions breathless

Last 3 weeks have noticed swelling in both feet

Worse at end of day and better if prop your feet up

No recent chest pain or palpitations

Concern: You feel anxious and concerned about your breathlessness and 'you feel like you don't have long to live'

PMH:

Myocardial Infarction 2017

Hypertension 2006

Atrial Fibrillation 2012

Obesity

DH: Bisoprolol 5mg → β -blocker

Lisinopril 5mg → ACE inhibitor

Dabigatran → Anti-coagulant

Allergies: Digoxin

SH: Ex smoker

* This indicates it's a severe heart failure.
① Orthopnea هو مضاعفات، مضاعفات "4" مخدات، مضاعفات انا هو
Shortness of breath when lying down, to overcome it, he increases pillows number.

② "Paroxysmal nocturnal orthopnea" يعني "SOS" يعني
* حكي كمان انا بصوت بالليل هو "SOS" يعني

* Because of orthopnea ⇒ Class IV

indicates that edema increases at dependant area.

Heart failure risk factors

Scenario 2 Case Discussion – Heart Failure

What went well? What did everyone else think went well? Anything you felt you could have done differently? What do you need to focus on for the future?

Is there any more information you would like to know (or does anyone else want to know)?

What diagnosis do they think this history fits with?

Heart failure with symptoms of breathlessness on minimal exertion (class III to IV on NYHA – discuss (in introduction)), **orthopnoea** (propping themselves up with extra pillows at night) and **PND** (wakes up breathless if slips down the pillows) and peripheral oedema with leg swelling. **These are symptoms of left ventricular dysfunction** with significant **pulmonary oedema** and peripheral oedema.

Did they explore the cue about anxiety? How do they feel about this discussion with a patient? Do they know the prognosis of someone with severe heart failure? (If **have symptoms with HF average life expectancy 36 months** – worse if in class III and IV on NYHA)

V.I.P → What are his risk factors for heart failure (highlighted in bold)? What are his risk factors in general?

- **Coronary artery disease**
- **Age**
- **Hypertension**
- Alcohol abuse
- **Obesity**
- **Smoking**
- Mitral valve disease
- Previous myocarditis
- Inherited conditions (cardiomyopathy...)
- **Diabetes**
- Certain medications – nsaids, some diabetic medications...

V.I.P - What is the gold standard test to diagnose heart failure?

- **Echocardiogram** – looking for ejection fraction result **>35%**

heart ممكن يسالك كيف تثبت انو failure *

Echocardiogram لعل
ejection fraction اقل من
* EF > 50% normally

V.I.P - How do you manage heart failure?

- **Beta-blockers** – aim for pulse of 60 bpm (to reduce workload on heart) – **increases longevity of life**
- **ACEI** – titrate with BP but also associated with **improved mortality** (improves left ventricular function)
- **Diuretics** – **improve symptoms** breathless and leg swelling but don't improve **mortality**
↳ Use loop diuretics
- **Stop nsaid**s and other potential harmful drugs
- **Maximise BP** to target 130/80 mmHg
- If severe heart failure may need to do daily weights, restrict fluids and weigh regularly

* V.I.P
Potassium sparing diuretics
↳ Prevent cardiac remodeling

↳ if weight overtime

V.I.P ⇒ Water & sodium retention ⇒ Worsening of heart failure

1-1.5 L of water are allowed

Week 4 - Scenario 3 Student Doctor

You are a 4th year medical student in the cardiology outpatient clinic at Prince Hamza Hospital. You are asked to see a 70 year old female patient named Aya who has been referred for new onset of fainting episodes. Introduce yourself and begin taking your history as you normally would. At the end summarize back to the patient the history in their own words.

Week 4 – Scenario 3 Female Patient

Aya
70 years
Widow has 8 children
Lives alone

PC: New onset of fainting episodes

L.Vent outflow obstruction Causes
↳ Hypertrophic cardiomyopathies.
↳ Severe aortic stenosis. with old ages

HPC: Over the last month had fainting episodes after exertion – for example walking upstairs and collapsed on to the floor – lost consciousness but came around quickly

* V.I.P

Another episode when carrying shopping back home had chest pain, felt breathless and collapsed to floor. When you came round there was a crowd around you which was embarrassing and you were taken to hospital for some cuts and bruises.

Long standing breathlessness on exertion, no difficulty breathing when sleeping or lying flat

No leg swelling

exclude heart failure

Also noticed palpitations particularly when you exert yourself in the last 6 months and chest tightness like a heaviness on your chest, 7/10 pain scale.

Concern: Because you are a widow your main concern is collapsing whilst alone and no-one is able to help you

PMSH: Previous endocarditis as a child

Diabetes, Hypertension, Hypercholesterolaemia

DH: Metformin 850mg bd, Ramipril 5mg od, Simvastatin 40mg nocte

FH: Nil

SH: None smoker

* هوون مار عندي اكثر من اعتياد :-



1) Palpitation + fainting ⇒ Arrhythmia.

2) SOB on exertion ⇒ Lt. Ventricular outflow obstruction

3) Chest tightness ⇒ MI

Scenario 3 Case Discussion – Aortic Stenosis

What went well? What did everyone else think went well? Anything you felt you could have done differently? What do you need to focus on for the future?

Is there any more information you would like to know (or does anyone else want to know)?

What differential diagnoses would you consider in this patient?

- Angina with cardiac sounding chest pain with potential MI
- Arrhythmia – heart block can present with palpitations and fainting episodes
- This case though is actually severe aortic stenosis with exertional syncope

* V.I.P

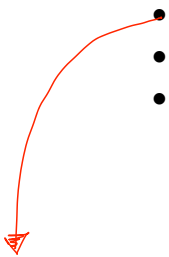
When somebody presents with syncope ask about when them when it happens?

لما يجيك واحد
syncope معو
ضروري تسالو
هاي الاسالة

- With palpitations (arrhythmia)
- On standing (postural hypotension) انو الضغط ينزل بين توقف
- On exertion (severe aortic stenosis, outflow obstruction, cardiomyopathy)

What are the risk factors for this woman's aortic stenosis?

- Age
- Endocarditis as a child
- Cardiovascular risk factors (hypertension, diabetes, hypercholesterolaemia)



High blood pressure with old ages effect valve → Healing by calcification

Week 4 - Scenario 4 Student Doctor

You are a 4th year medical student in the cardiology outpatient clinic at Prince Hamza Hospital. You are asked to see a 65 year old female patient named Rahaf who you are seeing in the diabetic clinic. Introduce yourself and begin taking your history as you normally would. At the end of the consultation summarize back to the patient the history in their own words.

Week 4 – Scenario 4 Female Patient

Rahaf
65 years
Married, housewife with 4 children
Lives with her retired husband

↗ Mainly due to poor perfusion to muscle
* Claudication ⇒ Crampy like pain on calf muscle just with exercise

* Claudication on peripheral artery ⇒ Due to peripheral vascular disease

PC: Noticed painful right calf when walking up hill the last 6 months

HPC: Last 6 months you have noticed that when you climb the stairs you get pain in your calf – like a throbbing pain that stops when you stop climbing and comes on again if you carry on climbing ⇒ Claudication ⇒ PVD

You can manage walking about 50 metres on flat ground before you get pain in your right calf

* V.I.P
You feel also coldness and numbness and tingling in your right foot PVD

* V.I.P ⇒ for PVD
In the last month you have noticed that your middle toe on your right foot has turned a black colour and when you walk in the neighbourhood you notice the dogs follow you around which is very distressing ⇒ Because of gangrene smell. *
indicates gangrene

You suffered with painful feet for many years after you were diagnosed with diabetes

* Severe PVD
You also get night leg cramps in bed and are having to get out of bed to relieve it
You have struggled to control your diabetes for several years- you admit you like Arabic sweets, chocolate and cake!

Concern disclosed (if asked): The dogs that follow you around which is very distressing

PMSH: Diabetes 2006, Myocardial Infarction 2009, CABG 2010, Diabetic retinopathy 2013

DH: Metformin 500mg tds, Gliclazide 80mg od, Rosiglitazone 5mg od, Aspirin 100mg, Atorvastatin 40mg nocte.

SH: Ex smoker

قلع مفتوح

↗ indicates uncontrolled diabetes

↓
for diabetes

↓
for diabetes

↖ for Hypertension

↖ Risk factor for PVD

Week 4 Scenario 4 - Peripheral vascular disease

What went well? What did everyone else think went well? Anything you felt you could have done differently? What consultation or communication skills do you need to focus on for the future?

Is there any more information you would like to know (or does anyone else want to know)?

What do you think is the diagnosis in this case?

PVD – leg pain on exertion (in this case calf but can be thigh or foot too), **coldness** and **numbness** are all symptoms associated with PVD

The **black toe** and the dogs following her around is due to **gangrene** and the smell

What are her risk factors?

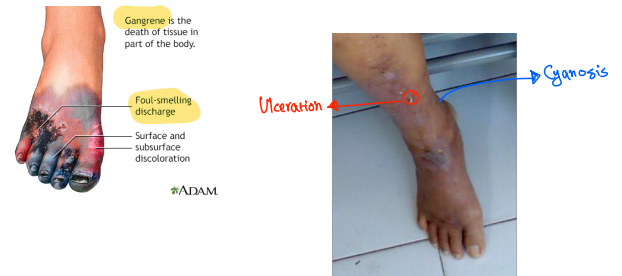
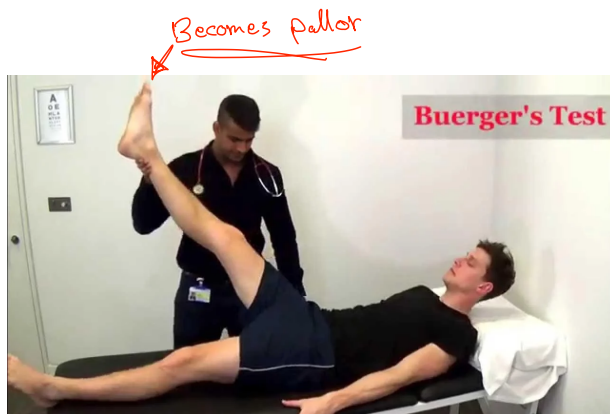
- Age
- Poorly controlled diabetes (she already has secondary complications with her retinopathy so it is likely she has peripheral neuropathy too)
- Cardiovascular factors (ex smoker, high cholesterol, high BP)

What examination would you make on this lady?

Do diabetic foot check – inspection – check for colour changes, hair loss, nail changes, gangrene, callus or ulceration (check all areas of the foot), palpate the pulses, check for peripheral sensation with monofilament and vibration sense → To check neuropathy

Do peripheral vascular disease check – all above but include **Berger's test** and **check all pulses** in leg from aorta, to right groin pulse, popliteal and compare to other side.

Check for bruits. audible vascular sound associated with turbulent blood flow.
because of obstruction.



4.24 Signs of acute limb ischaemia

- Pallor
- Pulselessness
- Perishing cold
- Paraesthesia
- Pain (worse when muscle squeezed)
- Paralysis

<https://youtu.be/FvA-2X28dnk?si=F0qw0t3xwd100CKn>

↳ Buerger's test explanation.

4.23 The clinical features of arterial, neurogenic and venous claudication → اصاب

	Arterial	Neurogenic	Venous
Pathology	Stenosis or occlusion of major lower limb arteries	Lumbar nerve root or cauda equina compression (spinal stenosis)	Obstruction to the venous outflow of the leg due to iliofemoral venous occlusion
Site of pain	Muscles, usually the calf but may involve thigh and buttocks	Ill-defined Whole leg May be associated with numbness and tingling	Whole leg 'Bursting' in nature
Laterality	Unilateral or bilateral	Often bilateral	Nearly always unilateral
Onset	Gradual after walking the 'claudication distance'	Often immediate on walking or standing up	Gradual, from the moment walking starts
Relieving features	On stopping walking, the pain disappears completely in 1-2 minutes	Bending forwards and stopping walking Patient may sit down for full relief	Leg elevation
Colour	Normal or pale	Normal	Cyanosed Often visible varicose veins
Temperature	Normal or cool	Normal	Normal or increased
Oedema	Absent	Absent	Always present
Pulses	Reduced or absent	Normal	Present but may be difficult to feel owing to oedema
Straight-leg raising	Normal	May be limited	Normal