OSCE – Surgery
Dossier

New – 2016/2017

#	Title	Done by
1	OSCE stations (past years)	
2	General history	Yasmin Khundakji
3	General: cancer staging	
4	Lump history & examination	
5	The neck & cervical lymph nodes	
6	Neck swellings	
7	Thyroid – history	
8	Thyroid - physical	
9	Salivary glands – history & physical exam	
10	Breast – history & physical exam	
11	GI – history taking	
12	Abdomen physical examination	
13	Biliary disease – history & examination	
14	Acute appendicitis – history & examination	
15	Pancreatitis – history & examination	
16	Diverticulitis – history	
17	Intestinal obstruction history & examination	
18	Dysphagia – history	
19	History of fresh blood per rectum	***
20	Colon cancer history & examination	
21	Inguinal hernia examination	
22	Jaundice	Old dossier
23	Peripheral arterial disease – Hx & P/E	Yasmin Khundakji
24	Peripheral venous disease – Hx & P/E	
25	Ulcer	
26	Ulcer exam	***
27	Varicose veins	
28	Diabetic foot exam	
29	Pediatric history	Old dossier

*** المحاضرات التي وضعت بجانبها هذه الإشارة كتبها الطلاب التالية أسماؤهم : ميرة يونس/شذى الرخامين/محمود منصور/عبد الله المصري/إبراهيم صبري/خالد الحمد/مهند أبو حمد

The following topics have been omitted from the dossier since they rarely come in OSCE stations as history taking and physical examination. But it is important to study them for Mini-OSCE.

Mini-OSCE files cover most of these topics with pictures and common questions. For further reading, you can read from old OSCE dossier, surgical recall or any other source.

- Gastric cancer history
- PUD
- Tumor of esophagus
- Hydatid cyst
- IBD
- Lung cancer and pneumothorax
- Amputation
- Stoma/ tracheostomy/ tubes & drains
- Aneurysm / AV fistulas/ wound healing/ scars
- Skin tumors/ melanoma/ moles/ hemangioma/ BCC/ SCC
- PNS
- Soft tissue sarcoma

If you have any prepared material that would make this dossier much better please send to this email: juclinical@gmail.com

OSCE stations

2016 1st semester

- take a hx from a patient complaining of tenesmus (on taking the history the patient also complained of rectal bleeding and weight loss) at the end the dr asks for a diagnosis (rectal ca) and what the next step is (PR).

- A patient had sigmoid ca and a sigmoidectomy was performed, examine the patient for signs of distant metastasis: GI exam focusing on liver, lymph nodes, sister Mary joseph.. Etc

- take a focused history from a patient distinguishing whether they have hypo or hyperthyroidism.

- Peripheral vascular examinations for arterial disease of the lower limbs

2016 2nd semester

1- Examine neck mass.

2- History breast mass.

3- History jaundice in elderly and what is the diagnosis "cancer".

4- Abdominal examination for a patient presented with right iliac pain and what is the diagnosis.

2015 1st semester

-P/E for Patient diagnosed to have Acute appendicitis.

-History for patient with thyroid mass with manifestations of hypothyroid.

-Hx for a patient with Lt lower abdominal pain … Diverticuliti.

-P/E for patient with peripheral arterial disease.

2015 2nd semester

1. This patient is a 55 year old male who came to the ER complaining of RUQ pain of 4 hours duration. Take relevant history in 5 minutes then give the provisional diagnosis and the diagnostic test. -Acute cholecystitis vs. biliary colic. Abdominal ultrasound.

2. This female patient came to the clinic saying she found a mass in her right breast incidentally in the shower, take a proper history then give your initial diagnosis and your recommended investigations. -Breast ca, U/S, mammography, FNA and core needle biopsy. 3. This patient has intermittent right parotid gland swelling, perform full examination of head and neck and comment.

4. This patient came to the ER with abdominal pain, your fellow resident says he has small bowel obstruction but you completely disagree with him. Perform a physical examination mentioning all important negative findings to rule out intestinal obstruction.

2014

1- a patient came to the ER with all the symptoms of appendicitis right iliac fossa pain that has started in the para umbulical region vomiting, fever , ... do a proper focused physical examination for him

2- take a history from a patient with inguinal hernia.

3- take a proper focused history from a patient who's 57 yrs old came to the ER by a severe chest pain , in the hospital they did cath for him , after 6 hrs he had a pain on his ankle

4- Take a proper focused history from a patient who came to the ER with direct flame burn involving both arms and face .. It's suspected to be from the 2nd & 3rd degree ..

5- take a history from a patient coming to the clinic complaining of neck swelling , & do a proper physical examination for him

OSCE exam (2006)

1- pt with RUQ pain, take a hx from this pt.

2- pt with abdominal pain, examine his abdomen.
o/e: they found Rt LQ mass..> suspected to have a colon CA.

3- pt with neck mass, examin his neck
o/e: they suspected this pt to have a lymphadenopathy.

4- examine this pt for a parotid mass.

5- Pt have an ulcer in his forehead, examine him>
o/e: they suspected to have a sq cell CA.

6- take a hx from the mother of the child.
- 1st gr'p ..> from the hx the dx was intussussption.
- 2nd gr'p ..> from the hx the dx was pyloric stenosis.

7- what you see in this mammogram? & what you suspect the dx is?

8- Breast examination on a model.

9- Take a hx from a women, with breast problem.
By hx: they suspected to have a breast CA.

10- examine the peripheral vascular system for this pt.
o/e: they found the pt have an ulcer with varicose vein.

11- examine this pt with Rt iliac fossa pain.
o/e: they suspected to have an appendicitis.

12- case scenario, accompanied with chest x-ray, take a hx.
By hx: they suspected to have a pneumothorax.

13- case scenario, accompanied with chest x-ray, take a hx.
By hx: they suspected to have a lung CA.

14- take a hx from this pt complaining og dysphagia.

OSCE exam (2007)

1- Examine this pt for spleenomegaly.

2- Examine this pt with groin swelling.
o/e: they suspected to have a hernia.

3- 5 pictures: 1st> breast ...tell the examiner the stage.
2nd> needle containing pus ...it's a breast abcess
3rd> wire containing from a hole a exiting from another hole ...it's a fistula
4th> mass in a breast ...it's not pathological mass, it's axillary breast.
5th> true cut biopsy ...comment.

4- 2 pictures for a pt pre-op. & post-op.
5 quistions:
1st> what's the differential dx.
2nd> how to confirm the dx.
3rd> radiological investigations.
4th> follow up.
5th> what's this ...flap or graft.

5- pt complaining of heamoptysis, take a hx from this pt & tell what's your differential dx.
By hx: they suspected to have a lung CA.

6- diabetic pt, examine the peripheral vascular system.
7- Pt have a neck mass, examine him.

8- Take a hx from from the mother of the child.
By hx: they suspected hirschbrung's dis.

9- examine this pt with hepatomegally, pancrititis.

10-Take a hx from this pt.
By hx: they suspected to have a tracheoesophageal fistula.

11-take a hx from the mother of the child.
By hx: they suspected to have intussusseption.

12-examine this pt for thyroid.
13-Take a hx from this pt complaining of dysphagia.

\2nd semester (2008-2009)

1- female patient with Graves disease take hx concerning Graves
2- 46 years old male patient presented with heart burn, take hx and give 2 investigations (answer: GERD >> endoscopy & 24 hours PH monitoring, Ba swallow, manometry)
3- 1 monthe old patient presented with vomiting, take hx (dx: pyloric stenosis)
4- Breast examination (on a male!!)
5- Diabetic foot examination
6- 55 years old patient presented with L.L. pain. Take a hx. (dx: L.L. ischemia)
7- Examine abdomin for hepatomegally, and look for signs of liver diseas in abdomin
8- Plastic (pictures about):
- basal cell CA
- squamus cell CA
- malignant melanoma
- subangular melanoma
- for each picture give 2 DDx, what's the most likely dx, and give the reasons behind your dx
9- chest X-rays concerning:
- forign body
- pneumothorax with chest tube and collapsed lung
- emoyema
- air under diaghragm

OSCE exam (2008)

1) a 45 year old patient comes to your clinic complaining of lower abdominal pain, take history from the patient and tell the examiner about the possible diagnosis?
>>The answer was above sigmoid cancer from the history.

2)a lady with his child cames to the ER becoz of a history of 12 hours crying, take history and tell the examiner about 2 investigations you want to do to make sure of your diagnosis.
>>intussusseption.

3)peripheral arterial disease examination (lower limb examination)

4)examine for hepatomegaly.

5)examine for swelling in the inguinoscrotal area?
>>The answer was bilateral recurrent indirect inguinal hernia.

6)take history from a lady with a breast lump and tell the investigations you need.
>>the diagnosis was a breast CA.

7)plastic surgery: cleft lip and palate, syndactyly, third degree burn, hairy navus, basal cell carcinoma.

8)take history and chest X ray.
>>the diagnosis was a pneumothorax.

9)take history and examine for malignant changes of thyroid.

General: Synopsis of a History (Browse)

- **Patient's Profile:**
  Name; age; sex; marital status; occupation; ethnic group; admission.
- **Chief Complaint:**
  Preferably in the patient's own words.
- **History Of Present Complaint**:

▪ **Alimentary system and abdomen (AS)** Appetite. Diet. Weight. Nausea. Dysphagia. Regurgitation. Flatulence. Heartburn. Vomiting. Haematemesis. Indigestion pain. Abdominal pain. Abdominal distension. Bowel habit. Nature of stool. Rectal bleeding. Mucus. Slime. Prolapse. Incontinence. Tenesmus. Jaundice. ▪ **Respiratory system (RS)** Cough. Sputum. Haemoptysis. Dyspnoea. Hoarseness. Wheezing. Chest pain. Exercise tolerance. ▪ **Cardiovascular system (CVS)** Dyspnoea. Paroxysmal nocturnal dyspnoea. Orthopnoea. Chest pain. Palpitations. Dizziness. Ankle swelling. Limb pain. Walking distance. Colour changes in hands and feet. ▪ **Musculoskeletal system (MSS)** Aches or pains in muscles, bones or joints. Swelling joints. Limitation of joint movements. Locking. Weakness. Disturbances of gait.	▪ **Urogenital system (UGS)** Loin pain. Frequency of micturition including nocturnal frequency. Poor stream. Dribbling. Hesitancy. Dysuria. Urgency. Precipitancy. Painful micturition. Polyuria. Thirst. Haematuria. Incontinence. ***Men***: Problems with sexual intercourse and impotence. ***Women***: Date of menarche or menopause. Frequency. Duration of menstruation. Vaginal discharge. Dysmenorrhoea. Dyspareunia. Previous pregnancies and their complications. Prolapse. Urinary incontinence. Breast pain. Nipple discharge. Lumps. Skin changes. ▪ **Nervous system (CNS)** Changes of behaviour or psyche. Depression. Memory loss. Delusions. Anxiety. Tremor. Syncopal attacks. Loss of consciousness. Fits. Muscle weakness. Paralysis. Sensory disturbances. Paraesthesiae. Dizziness. Changes of smell, vision or hearing. Tinnitus. Headaches.

- **Previous History:**

Previous illnesses. Previous Surgeries or accidents. Diabetes. HTN. Rheumatic fever. Immune Diseases. Bleeding tendencies. Asthma. Allergies. TB… etc.

- **Drug History and Immunizations**:

Insulin. Steroids. Anti-depressants and the contraceptive pill. Drug abuse.

- **Family History:**

Causes of death of close relatives. Familial illnesses in siblings and offspring.

- **Social History and Habits:**

Marital status. Sexual habits. Living accommodation. Occupation. Exposure to industrial hazards. Travel abroad. Leisure activities.

Smoking. Drinking. Number of cigarettes smoked per day. Units of alcohol drunk per week.

General: Cancer Staging (NMS)

Cancer is a group of diseases caused by unregulated growth and spread of neoplastic cells. Neoplasias may be either benign (noninvasive growth, no metastases) or malignant (invasive growth, metastases).

- **Types**

a. Carcinomas are malignancies that arise from epithelium.
b. Adenocarcinomas are malignancies that arise from epithelium and have a glandular component.
c. Sarcomas are malignancies that arise from mesodermal tissues.

• **Clinical manifestations of cancer** - Seven classic symptoms of cancer spell out the mnemonic "CAUTION:" o Change in bowel or bladder habits o A sore that does not heal o Unusual bleeding or discharge o Thickening or lump in the breast or elsewhere o Indigestion or difficulty swallowing o Obvious change in a wart or mole o Nagging cough or hoarseness.	• **Other manifestations** o Growth, causing a mass, obstruction, or neurologic deficit o Growth into neighboring tissues causing pain, paralysis, fixation, or immobility of a palpable mass o Tumor necrosis causing bleeding or fever o Systemic manifestations such as thrombophlebitis, endocrine symptoms due to hormones secreted by the tumor, and cachexia o Extreme weight loss over a short period of time o Metastatic spread as the first symptom such as enlarged lymph nodes, neurologic symptoms, o or pathologic bone fractures.

- The standard staging of most cancers is based on the tumor, nodes, and metastasis (TNM) system:
  - T describes the primary tumor.
  - N describes the involvement of lymph nodes with metastatic spread.
  - M describes distant metastases.
  - Stage grouping. Staging is necessary to choose the appropriate therapy and to assess the prognosis.

Example: TNM Classification System and Stage Grouping fur Gastric Adenocarcinoma	
Tumor (T)	
T0	No evidence of primary tumor
Tis (in situ)	Tumor limited to mucosa
T1	Tumor limited to mucosa or submucosa
T2	Tumor to but not through the serosa
T3	Tumor through the serosa but not into adjacent organs
T4	Tumor into adjacent organs (direct extension)
Nodes (N)	
N0	No metastases to lymph nodes
N1	Only perigastric lymph nodes within 3 cm of the primary tumor
N2	Only regional lymph nodes more than 3 cm from tumor but removable at operation
N3	Other intra-abdominal lymph nodes involved
Metastases (M)	
M0	No distant metastases
M1	Distant metastases
Stage grouping	
Stage 0	Tis
Stage 1	T1
Stage 2	T2 or T3
Stage 3	T1-3, N1 or N2, M0
Stage 4	Any T4, any T3, any N3, any M1

General: History And Examination Of A Lump

❖ *History Taking:*

- **Duration**

When was it first noticed?

- **First symptom**

What brought it to the patient's notice? (pain, its appearance, was it felt or had someone else noticed it?)

- **Other symptoms**

What symptoms does it cause? (usually related to the site of the lump.)

- **Progression**

How has it changed since it was first noticed? (any change in size or tenderness)

- **Persistence**

Has it ever disappeared or healed? (a lump may disappear on lying down, or during exercise, and yet be irreducible at the time of your examination.)

- **Multiplicity**

Has (or had) the patient any other lumps or ulcers?

- **Cause**

What does the patient think caused it? (follow injuries or systemic illnesses known only to the patient)

❖ *The Examination*:

1. **Site**

Describe in exact anatomical terms.

2. **Skin**

May be discolored and become smooth and shiny or thick and rough.

3. **Shape**

Should be described in 3D: Hemispherical or dome shaped. If asymmetrical, you may use terms such as 'pear shaped' or 'kidney shaped'.

4. **Size**

Width, length and height or depth.

5. **Surface**

It may be smooth or irregular. An irregular surface may be covered with smooth bumps: bosselated; or be irregular or rough.

6. **Temperature**

Assess the skin temperature with the dorsal surfaces of your fingers.

7. **Tenderness**

Feel the non-tender part before the tender area, and watch the patient's face for signs of discomfort.

8. **Edge**

Clearly defined or indistinct. It may have a definite pattern.

9. **Composition**

- Calcified tissues such as bone → Hard
- Tightly packed cells → Solid
- Extravascular fluid: Urine, serum, CSF, synovial fluid or extravascular blood → Cystic
- Gas
- Intravascular blood

There are certain physical signs which help you decide the composition of a lump, and these are:

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- **Consistency**
  - Stony hard
  - Firm
  - Rubbery
  - Spongy
  - Soft
- **Fluctuation**

Can only be elicited by feeling at least two other areas of the lump whilst pressing on a third. It fluctuates and contains fluid if two areas on opposite aspects of the lump bulge out when a third area is pressed in. This examination is best carried out in two places, the second at right angles to the first.

- **Fluid thrill**

The presence of a fluid thrill is detected by tapping one side of the lump and feeling the transmitted vibration when it reaches the other side. It can't be felt across small lumps.

- **Translucence**

Positive for lumps that contain water, serum, lymph or plasma, or highly refractile fat. Blood and other opaque fluids do not transmit light. Transillumination requires a bright pinpoint light source and a darkened room. The light should be placed on one side of the lump, not directly on top of it

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- **Resonance**

Solid and fluid-filled lumps sound dull when percussed. A gas-filled lump sounds hollow and resonant.

- **Pulsatility**

Place a finger of each hand on opposite sides of the lump and feel for a pulsation. If they are pushed outwards and upwards then the lump has an *expansile* pulsation (aneurysms and vascular tumors). When they are pushed in the same direction (usually upwards), the lump has a *transmitted* pulsation.

- **Compressibility**

Some fluid-filled lumps can be compressed until they disappear. When the compressing hand is removed the lump re-forms spontaneously.

- **Bruit**

Always listen to a lump. Vascular lumps that contain an AV fistula may have a systolic bruit. Hernaie containing bowel may have audible bowel sounds.

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10. Reducibility

A lump which is reducible can be pushed away into another place but will often not reappear spontaneously without the stimulus of coughing or gravity.

11. Mobility and Fixity

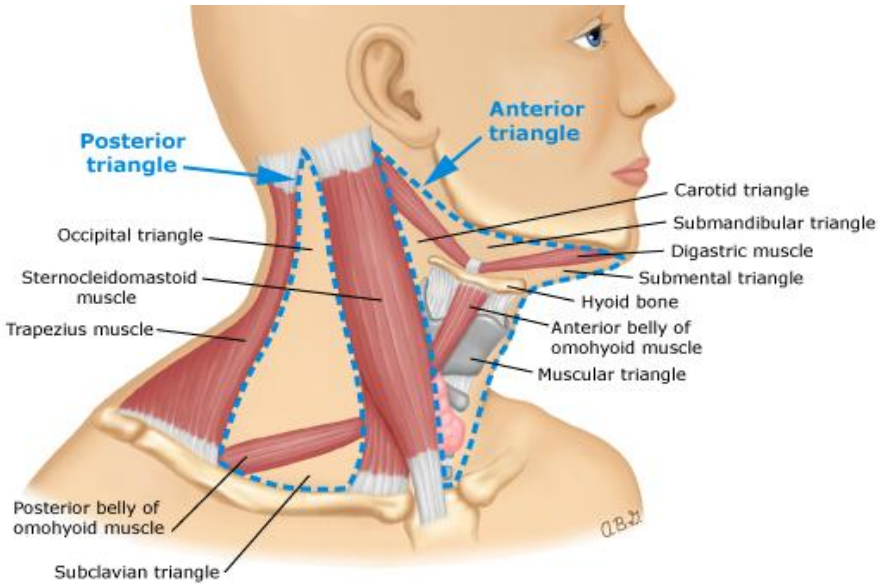
- Attachment to the **Skin**
- Attachment to **Muscle**: Underlying muscles must be tensed to see if this reduces the mobility. If this makes it easier to feel the lump: the lump is attached to the fascia covering the muscle or to the muscle itself. If it becomes less easy to feel: the lump is within or deep to the muscles.
- Attachment t**o Bone**: Lump moves very little.
- Attachment to or arising from **Vessels or Nerves**: may be moved from side to side across the length of the vessel or nerve, but not up and down along their length.
- Lumps in the abdomen that are freely mobile usually arise from the intestine, its mesentery or the omentum.

12. Regional Lymph Nodes

13. Examinations Specific to The Site of The Lump

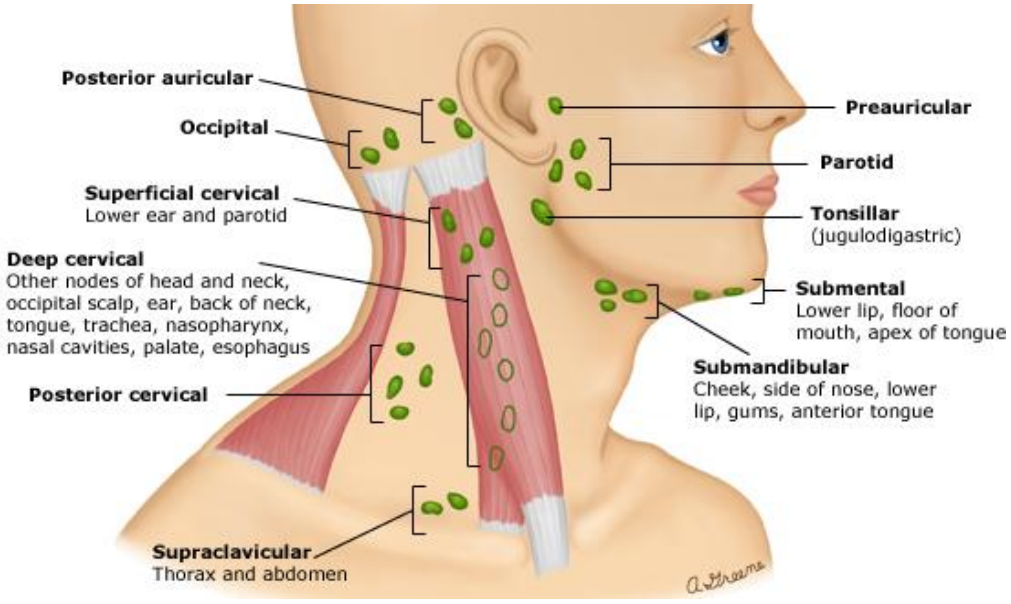
The Neck and Cervical Lymph Nodes

Familiarity with neck anatomy is critical for diagnosis and management of disease processes affecting this region. The neck is traditionally divided into the central and the lateral necks, with the lateral neck further subdivided into anterior and posterior triangles.



It is important to palpate the head and neck lymph nodes in a systematic way to avoid missing any.

- **Occipital nodes**: at the base of the skull
- **Posterior auricular nodes**: just posterior to the ear, above the mastoid process
- **Pre-auricular nodes**: just anterior to the ear
- **Submental nodes**: just posterior to the tip of the mandible (just below the chin)
- **Submandibular nodes**: along the body of the mandible (the underside of the jaw on either side)
- **Superficial cervical nodes**: along the sternal head of the SCM
- **Posterior cervical nodes**: Extend in a line posterior to the SCM but in front of the trapezius, from the level of the mastoid bone to the clavicle, along the clavicular head of the SCM
- **Deep cervical nodes**: deeply along the sternal head of the SCM
- **Supraclavicular nodes**: in the hollow above the clavicle, just lateral to where it joins the sternum
- **Infraclavicular nodes**: below the clavicle



Neck Swellings

Congenital

- **Branchial Cyst:**
  - Presents in late childhood or early adulthood
  - Behind upper 1/3rd of SCM
  - Ovoid, 5-10 cm long
  - Painless unless it's infected, and recurrent infections could occur
  - Hard, dull, fluctuates, not very mobile
- **Thyroglossal Duct Cyst:**
  - A midline mass in the ant neck
  - 0.5-5 cm diameter, firm or hard, smooth, spherical
  - Moves up on tongue protrusion
  - Becomes infected in the setting of an URTI
  - Tx: Sistrunk operation
- **Vascular Anomalies:**
  - Vascular tumors (hemangioma)
  - Vascular malformations (Lymphatic malformations are the most likely to present as a neck mass)
- **Laryngocele:**
  - When it extends beyond the larynx it often presents as an air filled cyst in the anterior neck
  - Hoarseness, cough, and a foreign body sensation
- **Ranula:**
  - A mucocele arising from an obstruction in the sublingual glands in the floor of mouth
  - painless and slow-growing
- **Teratoma:**
  - A tumor composed of tissues not normally present at the site
- **Dermoid Cyst:**
  - Midline, non-tender, mobile, submental or sublingual neck masses
  - Content: hair/sebaceous/sweat gland
- **Thymic Cyst:**
  - Between the angle of the mandible and the midline of the neck
- **Cystic Hygroma:**
  - Commonly presents in young children, base of neck, posterior triangle, brilliantly translucent.
- **Sternomastoid 'tumor':**
  - In neonates, presents with congenital torticollis, fusiform, solid, smooth lump in the middle of the SCM.

Inflammatory

- **Reactive Viral Lymphadenopathy:**
  - Arises in the setting of an URTI
  - Resolves within 1-2 weeks of symptom resolution (symptoms last 1-2 weeks)
  - Typically tender, < 1 cm
  - Mononucleosis: neck nodes are quite large (>2 cm), may also occur in the posterior triangle and may routinely take 4-6 weeks to resolve
  - CT findings: nodes <1cm, oblong in shape, with no evidence of central hypodensity, and a preserved vascular hilum
- **Bacterial Lymphadenopathy:**
  - **Tuberculous lymphadenitis**: isolated chronic non-tender, usually in upper and middle deep cervical LN, indistinct firm mass, the glands are matted together. May develop into a collar stud abscess in the upper 1/2 of the neck which is tender, firm-rubbery, with reddish-purple overlying skin, and eventually develops into a chronic sinus.
  - **Cat-scratch disease**: submandibular and/or preauricular, caused by Rochalimaea henselae, which is carried by felines, painful and accompanied by fevers and generalized malaise
- **Parasitic Lymphadenopathy:**
  - Toxoplasma gondii
- **Ludwig's Angina:**
  - A rapidly swelling cellulitis, caused by dental infections (strep/staph) at the floor of the mouth. Fever, edema, erythema under chin, and causes severe airway impairment due to pressure on larynx, causes suffocation and death if not managed
- **Sialadenitis:**
  - Inflammation of a salivary gland

Noninfectious

- Difficult to diagnose
- e.g. Sarcoidosis

Neoplastic and Others

- **Metastatic Head and Neck Carcinoma:**
  - Usually asymptomatic, diagnosis is confirmed with FNA + histology
  - Painless, slow-growing, stony hard and smooth LN, size and shape vary
- **Primary Neoplasms of Lymph Nodes**
  - Lymphoma: Usually ovoid, smooth, non-tender, solid-rubbery, slowly-growing, common in children and YA
  - Sx: Malaise and Weight loss, spread to skin may cause Mycosis Fungoides
- **Salivary Gland Neoplasms:**
  - Mostly arise in the parotid and are mainly benign pleomorphic adenomas or warthin tumors (tail of parotid)
  - Incidence of malignancy in tumors of the submandibular gland is much higher
  - Benign: present as asymptomatic enlarging masses.
  - Pain, cranial nerve deficits, or overlying skin changes usually indicate malignancy
- **Carotid Body Tumor:**
  - Highly vascular, typically benign, in the lateral neck, often pulsatile with a bruit, mobile in a side to side direction but not in a vertical direction
  - Diagnosed through an angiogram, embolization is done before surgery
- **Lipoma:**
  - Dome shaped, slippery edges, soft but turns hard if fat necroses, no skin changes, non-tender
- **Schwannoma**
- **Thyroid Malignancies**

Others:

- **Benign Skin Cysts:**
  - Sebaceous cysts: dome-shaped, thin shiny hairless overlying skin, may be infected and red, tender, hot.
  - Attached to the skin. A punctum is usually seen. Could develop into a sebaceous horn or cock's peculiar tumor
- **Pharyngeal Pouch (Zencker)**
  - Dysphagia + halitosis. Dx: Ba swallow
- **Cervical Rib**
- **Goiter**

Thyroid - History Taking

- Patient's Profile
- Chief Complaint: it will most probably be a 'neck lump'
- History of Present Complaint:

1. Symptoms of The Lump Itself:

- Duration
- Site, Size, Shape and Mobility (general)
- First symptom: How it was noticed
- Other symptoms:
  a. Dysphagia or discomfort on swallowing
  b. Dyspnea, SOB on sleeping or Stridor
  c. Pain, referred to anywhere?
  d. Hoarseness or inability to reach high notes
- Progression
- Multiplicity
- Persistence
- Previous Hx of a similar case
- Cause: ask the patient what they think may have caused it

2. Symptoms Specific to Thyroid diseases:

HYPERTHYROIDISM	HYPOTHYROIDISM
• **Neurological and General Symptoms:** o Fatigue or weakness o Insomnia o Nervousness, irritability, anxiety o Headaches o Vertigo o Tremors in the hands and tongue • **Eye symptoms**: double vision, bulging, difficulty closing eyelids or some eye movement difficulties • **Cardiovascular Symptoms:** o Palpitations (missed & irregular beats: A Fib) o Shortness of breath or atypical chest pain on exertion o Swelling of the ankles • **Metabolic and Alimentary Symptoms:** o Loss of weight despite a normal or increased appetite o Diarrhea or hyperdefecation o Excessive sweating o Thirst • **Gynecological**: amenorrhea or oligomenorrhea • **Others:** o Wasting of muscles and proximal muscle myopathies: lifting objects and climbing stairs may become increasingly difficult o Heat intolerant (prefers cold weather)	• **Neurological and General Symptoms:** o Cognitive: range from mild lapses in memory with slow thought, speech and action to delirium, hallucinations, dementia, seizures and coma o Myxedema Madness o Depressed mood with limited initiative and sociability o Fatigue, lethargy, myalgias, arthralgias, parethesias o Weakness • **Cardiovascular Symptoms:** associated with heart failure o Dyspnoea o Ankle edema • **Metabolic and Alimentary Symptoms:** o Increase in weight despite poor appetite o Deposition of fat most noticed around the back of the neck and shoulders o Constipation • **Gynecological**: Menorrhagia (heavy bleeding) • **Others:** o Cold intolerant (always cold) o Thinning of hair: scalp and lateral eyebrows o Dry Skin

3. **Other Symptoms:**

- Symptoms of inflammation or infection (e.g. Fever, recent RTI)
- Symptoms of Metastasis: deep bone pain, pathological fractures or soft pulsating tumors
- Risk Factors:
  - Exposure to irradiation
  - Diet lacking iodine: (e.g. Seafood , Dairy products)
- Previous History of thyroid disease, any autoimmune or liver diseases
- Family History
- Drug Hx: amiodarone, interferon-a, pharmacologic preparations of thyroid hormone
- Smoking

Investigations

- **TSH receptor antibody:** Increased in Graves disease.
- **Thyroid function tests**: Free T3 and T4 levels are more useful than total levels.
- **Thyroid autoantibodies:** Anti-thyroid peroxidase may be increased in Hashimoto's and Graves diseases. Its presence in Graves disease signifies an increased likelihood of post-treatment hypothyroidism.
- **Ultrasound scan:** Useful to distinguish cystic from solid lumps (which are more likely to be malignant).
- **Isotope scan:** to differentiate different causes of a goiter and identify ectopic thyroid tissue and hot and cold nodules. Cold nodules are much more likely to be malignant than hot nodules.
- **Blood lipids and glucose:** Patients with hypothyroidism are at risk of CVD and diabetes.

Treatment

Hyperthyroidism

- **Drugs:**
  - Symptom control: beta-blockers, e.g. propranolol.
  - Modification: Anti thyroid medication e.g. carbimazole + thyroxine

- **Radioactive iodine:**
  - Absorbed by the thyroid gland where it causes it to shrink usually within 3-6 months
  - Contraindicated in active hyperthyroidism (due to an increased risk of thyrotoxic storm), pregnancy and breast-feeding.

- **Complete or partial thyroidectomy:**

This is reserved for:

- Cases refractory to medical treatment
- Compression of important structures
- Patient preference for cosmetic reasons.

Damage to local structures, including the recurrent laryngeal nerve and parathyroid glands, is a serious complication of thyroid surgeries.

Hypothyroidism

- Treatment is with **Levothyroxine** (synthetic thyroid hormone) – but remember that:
  - Enzyme-inducing drugs may increase the breakdown of Levothyroxine
  - Thyroxine can increase the risk of a myocardial infarction in patients with ischemic heart disease.

Thyroid – Physical Examination

Always Remember: Introduce yourself, explain the exam briefly and ask for permission. Ensure privacy, warmth and good lighting. Wash your hands before you start.

Position and Exposure: The patient must be sitting. The neck should be exposed fully.

First impression

- The patient is conscious, alert and oriented to time, place and person.
- Do they seem abnormally hyper- or hypoactive?
  - Hyperthyroidism: restless and agitated
  - Hypothyroidism: slow motion and apathy
- Note if there is hoarseness or stridor after talking to the patient
- Clothing (any suggestion of heat or cold intolerance)
- Obese or cachectic
- Obvious tubes or drains

Vital signs

- Pulse:
  - Hyperthyroidism: resting tachycardia, there may be irregular irregularity (A Fib).
  - Hypothyroidism: bradycardia.
- Respiratory rate
- Blood pressure
- BMI:
  - Hypothyroidism: increased.
  - Hyperthyroidism: decreased.
- Temperature

Hands

- **Palms:**
  - Hyperthyroidism: Sweaty and warm. Look for palmar erythema or thenar muscle wasting.
  - Hypothyroidism: Cold and dry. May be coarse, yellow and cold due to peripheral vasoconstriction.
- **Thyroid Acropachy**: tender wrist, clubbing and periosteal bone formation. Found in *Hyperthyroidism*.
- **Fine Tremor** in *hyperthyroidism*: ask the patient to extend their arms and tongue. You may place a paper over the patient's hand to make it more visible.
- **Onycholysis** in *hyperthyroidism*. Brittle nails may be seen in hypothyroidism.

Face and Eyes

1. **Exophthalmos**: examine from above or the lateral side.
   - Corneal Ulcer: due to prolonged eye opening and infrequent blinking
   - Conjunctivitis
   - Chemosis (redness and edema)
   - Periorbital edema

- The patient may able to look up without any frontal wrinkles in severe proptosis and may have problems with convergence.

2. **Ophthalmoplegia**: ask the patient to follow the letter H; test for diplopia and nystagmus.
3. **Lid lag**: ask the patient to follow your finger or an object moving down vertically. Occurs in *hyperthyroidism*. Positive when a rim of sclera is visible between the upper eyelid and the superior iris on downward gaze.
4. **Lid retraction**: the sclera is visible **above** the superior corneal limbus.
5. **Hair Loss:** diffuse thinning of hair in scalp or lateral eyebrows may occur in *hypothyroidism*.

❖ The Neck

- **Inspection:** The neck should be hyper-extended.

Comment On:
- Symmetry
- Masses: Single or Multinodular. Size, Site, Shape and overlying Skin changes.
- Scars: neck collar scar at the crease of the neck indicates previous thyroid surgery.
- Vein engorgement, visible pulsations, edema and redness.

Perform Four Maneuvers, ask the patient to:
1) **Swallow** (you may give them some water) and observe any abnormalities. A thyroid swelling moves upward on swallowing since it lies in the pretracheal fascia.
2) **Protrude their tongue**. A thyroglossal cyst moves upward on swallowing (attached to the hyoid bone).
3) Open their mouth and use the torch to check for a **lingual thyroid**.
4) Raise their arms above their head and watch for any flushing: **Pemberton's sign** (thyroid enlargement can cause SVC obstruction).

- **Palpation:** The neck should be slightly flexed. Explain the exam, warm your hands and ask if there is any pain.

- *From the anterior:*
  - **Tenderness**: Palpate while watching for any signs of discomfort
- *From behind the patient:*
  - **Palpate the entire length of both lobes** as well as the isthmus. Fix one hand on one lobe to stabilize it and palpate the other lobe.
  - **Note any swellings or abnormal lumps**: Examine also while the patient swallows. Comment on: tenderness, temperature, shape, size, surface, consistency and mobility.
- Comment on whether there is a palpable **thrill**
  - **Berry Sign**: an absence of a carotid pulsation as a direct result of a tumor encasing the carotid artery and muffling the pulsation
  - **Lymph Nodes:**
    - Cervical
    - Supraclavicular
  - **Mediastinum:**
    - Tracheal tug
    - Tracheal deviation
    - Cricosternal distance

- **Percussion:**

Downwards from the sternal notch to detect retrosternal extension of goiter:
Becomes dull if a goiter extends retrosternally or if the whole thyroid is displaced.

- **Auscultation:**

Bruit over the thyroid is characteristic of Graves' disease. To reduce transmission, ask the patient to:
- Hold his breath
- Place your hand on the root of the neck to reduce transmission from the jugular vein

❖ At the end of the examination, mention that you want to examine the following:

- **Lower Limbs**
- Pretibial myxedema (pink or brown scars with thick skin): Graves' disease.
- Myxedema (non-pitting edema): Hypothyroidism
- **Deep tendon reflexes**
- Hyperthyroidism: Hyper-reflexia
- Hypothyroidism: Delayed relaxation
- **Proximal Myopathy:**
- Sit the patient on the edge of the couch, and instruct them to fold their arms and then stand from the sitting position without using their hands

Salivary Glands - History Taking

- Patient's Profile; Chief Complaint: it is commonly an asymptomatic mass.
- History of Present Complaint:

- **Duration**
- **Site, Size, Mobility and Skin changes** (general)
- **First Symptom**: How it was noticed
- **Other Symptoms**:
  - **Pain**? If yes, SOCRATES
- Relationship to eating (e.g. citrus), hunger or chewing? These stimulate salivary flow
- Does it persist in between meals?
- Relationship to speaking or moving the jaw (any movement of the temporo-mandibular joint is painful in mumps)
- Radiation: The pain may radiate to the ear and over the side of the face in parotid carcinoma.
- Symptoms may be relieved by pressing on the gland, and this may produce a foul-tasting fluid in their mouth: purulent saliva (Submandibular calculi)
  - **Swelling:**
- Is it increased before or after eating? (Chronic Parotitis is particularly noticeable before eating)
- Pleomorphic adenoma of the parotid may be more prominent when the mouth is open, or when eating.
  - **Infection or Inflammation**: Fever, Sweating, Rigors (e.g. mumps)
  - **Discharge** from inside the oral cavity
  - **Signs of facial or trigeminal nerve invasion:**
- Numbness or asymmetry of the mouth and difficulty in closing the eyes
  - **Dry eyes and generalized arthritis:** Sjögren's syndrome
  - **Trismus:** usually a late presentation, extension to muscles of mastication
  - **Dysphagia:** deep lobe tumor

- **Progression**:
- Slow-growing vs. Rapidly enlarging
- **Multiplicity**
- **Persistence**
- **Recurrence**: Previous Hx
- **Cause**: what they think may have caused it

- **Risk factors include:**
  - Oral Hygiene
  - Debility
  - Post-op
  - Dehydration

- **Medical and Surgical Hx**
- Irradiation exposure
- **Family History**
- **Drug Hx**
- **Social Hx**

- ***Differentiating between the different causes:***

- A slowly enlarging, distinct mass: **benign or malignant neoplasm**.
- A rapidly enlarging, firm distinct mass associated with firm, ipsilateral adenopathy or a mass associated with pain or facial nerve paralysis: **malignancy**.
- Acute, painful swelling in one or both glands, associated with fever or systemic symptoms: **inflammation.**
- Intermittent pain and swelling in the gland suggest **calculus sialadenitis**. A stone may occasionally be palpable on intraoral examination.
- **Metastatic disease in a parotid lymph node** (drainage from the upper 2/3rds of the face and the anterior scalp) may present as a mass in or near the parotid gland.

- ***Investigations***:

- **MRI** lets us know if the superficial or deep lobes are involved, if suspicious lymphadenopathy is present, and if there is facial nerve invasion. It may also help to differentiate individual histologic lesions.
- **CT scans** not as successful in differentiating histologic lesions.
- **Ultrasound** can localize the lesion to the superficial or deep lobe but otherwise adds little information.
- **Plain radiographs or Sialograms** may be useful for imaging stones.
- **FNA** has a good accuracy rate (87%) and a low risk of spreading malignant cells.
- **Core-needle biopsy** or open biopsy carries the risk of spreading tumor cells and generally is not indicated.

- ***Treatment:*** Ranges from superficial surgical excision if benign to lobar or total resection of the gland. Facial nerve resection, neck dissection and post-op radiotherapy may be needed in highly invasive malignancies.

Salivary Glands – Physical Examination

Always Remember: Introduce yourself, explain the exam briefly and ask for permission. Ensure privacy, warmth and good lighting. Wash your hands before you start.
Position and Exposure: The patient must be sitting. The neck should be exposed fully.

❖ **Inspection:** Inspect from the same level as the patient's head.

- Comment on**:**

- **Overall symmetry**: unilateral or bilateral swelling
- **Site:**
  - **Parotid**: lies on the lateral surface of the mandibular ramus and folds itself around the posterior border of the mandible. Masses could be at the angle of the jaw or at the base of the ear pinna (tail of the parotid). The mass may obliterate the retromandibular space.
  - **Submandibular:** resides just under the inferior border of the mandibular body.
  - **Sublingual**: lie just beneath the mucosa in the floor of the mouth.
- **Number and Size**
- **Skin Changes**
- **Shape**
- Note any limitation in jaw opening
- Note any Scars or Fistulae (can follow parotidectomy or long-standing parotid traumatic injury) and skin or scalp lesions suggestive of primary malignancy

- Intraoral inspection:

Use a tongue depressor , look for:

- **Pharyngeal asymmetry** or buccal involvement
- **Inflammation, pus or any discharge**
- **Stones** at the floor of the mouth: The submandibular gland is more commonly associated with stone formation because the gland's secretion is more mucoid and it lies in a dependent position relative to the duct orifice. This leads to stasis of secretions in the proximal duct.
- **A pharyngeal bulge** which is associated with a deep lobe parotid tumor (masses in the deep part of the parotid may bulge through the lateral pharyngeal wall)

- Facial nerve examination

- Facial symmetry
- Present nasolabial folds
- Frontal wrinkling on raising eyebrows
- Able to blink**:** eyelid closure
- Able to puff out cheeks
- Ask the patient to smile: any mouth deviation

❖ **Palpation:** Explain the exam, warm your hands and ask if there is any pain.

- Features of the lump:

- Tenderness
- Temperature
- Surface and Edge
- Consistence
- **Mobility and Relation (Fixation to overlying skin or to deep structures**)
- Ask the patient to **clench teeth together** (tenses the masseter muscle) and comment on mobility
- **Put the SCM muscle in action**: to see if the mass is superficial or deep to it (LN are deep)
- **Observe the salivary effluent intra orally** during palpation

- Palpate the Cervical Lymph Nodes

- Intra-oral Palpation: Use a torch and wear gloves.

- **The Parotid Duct**: (Stensen's) enters the oral cavity in the cheek just opposite the upper 2nd molar tooth. Saliva is usually clear, thin, and colorless.
- **The Submandibular Duct** (Wharton's) runs superiorly and anteriorly to empty adjacent to the frenulum of the tongue. The small duct orifice is visible in the top of a papilla in this area.
- **Look for pus, mucus, or particulate matter in the secretion**.
- Note: The sublingual glands empty directly into the mouth or the submandibular duct. Not discretely palpable, the duct openings are not usually visible.

- Bi-manual Palpation:

- Palpate the submandibular gland: Feel the lump between the index finger of one hand in the lateral floor of the mouth and the fingers of the other hand on the outer surface of the lump. It is usually soft and mobile and should not be tender
- Palpate the deep lobe of the parotid gland bi-manually.

The Breast – History Taking

- Patient's Profile:

- **Name**
- **Age:** One of the most important risk factors for breast cancer. The risk peaks at ages above 50 y/o. Pts that are 70 and older have a much higher risk of malignancy. Cancer is very unlikely in younger ages
- **Occupation:** Check if the job involves exposure to radiation for prolonged time periods.
- **Marital Status:** To ask about parity later on.
- **Admission**

- Chief Complaint: it will most probably be a 'breast lump'
- History of Present Complaint:

1. Symptoms of The Lump Itself:

- Duration: When was it first noticed?
- Site, Size, Shape, Consistency and Mobility
- First symptom: How was it noticed?
- Other symptoms:
  - Skin Changes: Redness, hotness, ulceration
  - Pain
  - Hardening or dimpling of the breast
  - Nipple Changes (7Ds)
  - Nipple discharge: color, amount, smell, texture
  - Swelling in the axilla
- Progression: Does its size change? Has it become more painful? Change in consistence?
- Multiplicity: Are there any other masses?
- Persistence: Does it ever disappear?
- Previous Hx of a similar case
- Cause: ask the patient what they think may have caused it
  - Recent trauma Hx (fat necrosis)

2. Risk Factors:

Past Hx and Family Hx

- Previous breast or ovarian cancer?
- Previous Hx of a breast mass?
- Previous chemo or radiotherapy?
- Any family history of breast, ovarian or colon cancer/masses?
- Ask about first degree relatives (mother, daughters, sisters) and second degree relatives. Ask about their age on onset of the disease.

Pregnancy and Breast Feeding

- Age during first pregnancy?
  as this age increases, the incidence of breast cancer increases due to increased estrogen exposure.
- No. of children?
  Increased parity is associated with a decreased incidence of breast cancer.
- How many of your children did you breastfeed? For how long? (decreases BC incidence)

Gynecological Hx

- Menstrual pattern? Regular vs. Irregular (indicates hormonal disturbances)
- Duration: early menarche and late menopause are associated with increased incidence of breast cancer.
- Quantity of bleeding during menses
- Are the symptoms altered with menses? This is **very important** as it indicates benign disorders usually.

Medications

- Oral Contraceptive Pills: associated with an increased risk of breast cancer.
- Hormonal Replacement Therapy: Also associated with an increased risk of breast cancer.

Social History

- Smoking: associated with duct ectasia
- Alcohol

3. Review of Systems and Symptoms of Metastasis:

- **General:** weight loss, fever, chills, appetite, diet
- **Musculoskeletal:** deep bone pain, pathological fractures, backaches
- **GI:** distension, jaundice, bleeding tendency
- **Neurological:** fits, vertigo, headaches
- **Respiratory:** cough, SOB

The Breast – Physical Examination

Always Remember: Introduce yourself, explain the exam briefly and ask for permission. Ensure privacy, warmth and good lighting. Wash your hands before you start. Ask for a CHAPERONE.
Exposure: from the waist up

❖ *Inspection:*

*Stand in front of the patient, look bilaterally to compare. While the patient is **sitting**, ask her to*

1. Rest hands on thighs**:** this relaxes the pectoral muscles, comment on:

- **Symmetry**
- **Obvious swelling or mass in the breast**
- **Inspect arms, axilla, supraclavicular fossa**
- **Scars**
- **Skin Changes:**
  - Erythema
  - Thickening or Ulceration (eczematous)
  - Paeu d'orange (due to obstruction of lymphatics by cancer cells)
  - Dimpling, Puckering, Tethering
  - Dilated veins
- **Nipple Changes (7Ds):**
  - Destruction
  - Discoloration (note that the color normally darkens during pregnancy)
  - Displacement (elevation.. etc)
  - Discharge: ask the patient to express it
  - Deviation
  - Depression (transverse slit: duct ectasia) or retraction
  - Duplication

2. Press hands firmly on hips**:** this contracts the pectoral muscles and may reveal swellings.
3. Raise arms above head**:** this allows skin changes to become more apparent, especially tethering.
4. Lean forward with breasts hanging

- Comment on any changes in the previously described observations or any new ones.
- Comment on the presence or absence of visibly enlarged axillary or supraclavicular LN
- Don't forget to inspect the axillary tail and the underside of the breast.

❖ *Lymph Nodes:*

Since the patient is already sitting, you may examine the lymph nodes before palpating the breast

- **Axillary**

- While examining the Rt side, stand on the Rt of the patient. Support the patient's arm and elbow with the non-examining hand.
- Start palpating the central nodes deep in the apex of the axilla. The hand is straight up, deep in the underarm.
- Move downwards, gently move the pads of the fingers medially and inside the border of the pectoral muscle to palpate the medial LN.
- Sweep back up and return to the axilla with the palm facing laterally, feeling inside the muscle of the posterior axillary fold.
- Check the lateral nodes with the palm of the hand facing the humeral head.

- **Supraclavicular**
- **Cervical**

❖ *Palpation:*

- *The patient should be supine*
- *When examining the medial side: ask her to place her arm under her head on the side to be examined.*
- *When examining the lateral side: normal supine position*
- *Begin palpating the non-pathological side first.*
- *Explain the exam, warm your hands and ask if there is any pain.*

- Palpate the breast using the pads of your middle 3 fingers by 'dipping and rolling'.
- Palpation should be done slowly.
- It should involve the entire breast area: from the 2^{nd}-6^{th} rib vertically, and from the sternal edge to the mid-axillary line horizontally.
- Palpation can be done in 3 different ways: **Circles, Wedges or Lines.**
- Examine the axillary tail (over the axillary fold) between your finger and thumb.
- Elevate the breast to uncover any abnormalities such as intertrigo in obese patients.
- Palpate the nipple with the index and thumb and try to express any discharge by massaging the breast towards the nipple. Note color and consistency.

❖ *Lump Examination* (If a mass is found)

1. **Site**: Which Quadrant
2. **Skin Changes**
3. **Shape**: Should be described in 3D
4. **Size**
5. **Surface**
6. **Temperature**
7. **Tenderness**
8. **Edge:** Regular, well-circumscribed, irregular
9. **Consistency**: soft, firm or hard

10. **Mobility - Fixity** (Relation to surrounding structures)

- To examine this, ask the patient to place her hands on her hips and hold the mass between your thumb and forefinger, ask the pt to push into her hips (to contract the pectoral muscles)

- If the mass is fixed with and without this maneuver → it's fixed to the chest wall
- If it becomes fixed after performing this maneuver → it's fixed to the pectoral fascia

❖ *Perform a general exam to search for metastasis:*

- Palpate for cervical lymphadenopathy
- Auscultate the lung bases for effusions
- Percuss the spine for tenderness
- Neurological exam
- Abdominal exam for hepatomegaly and ascites

❖ *Investigations:*

- Mammogram: shows soft tissue mass or architectural distortion and clustered microcalcifications
- Ultrasound: differentiates solid from cystic masses that are palpable or detected mammographically
- MRI: high sensitivity but limited specificity
- FNA or core needle biopsy; surgical biopsy
- For metastasis: Bone/Brain CT; PET scan; LFT; CXR

❖ *Treatment:*

- Simple mastectomy has been the historic standard treatment for Paget's disease
- Breast Conserving Treatment is preferred for invasive and in-situ breast carcinoma
- Highly invasive carcinomas may require a radical mastectomy with wide local excision and axillary clearance
- Chemo or radiotherapy may be indicated

General: GI – History Taking

- Patient's Profile: Name; Age; Marital Status; Place of Residence; Occupation
- Chief Complaint: Acute Pain (of less than a few days duration that has worsened progressively until the time of presentation.)
- History of Present Complaint:

1) Site of Pain

RUQ	RLQ	LUQ	LLQ
○ **Biliary Tree:** - Cholecystitis - Choledocholithiasis - Cholangitis ○ **Liver:** - Hepatitis - Tumors - Hepatomegaly ○ **Appendicitis** during pregnancy ○ **Thoracic:** - Lower lobe pneumonia - PE - MI (especially inferior) - Dissecting aortic aneurysm ○ **Peptic Ulcer Disease** ○ **Esophageal** ○ **GI:** - Gastritis - Colon ca (cecum) ○ **Pancreatitis** (epigastric)	○ **Appendicitis** ○ **GI:** - Gastroenteritis - Cecal diverticulitis - Meckel's diverticulum - Intussusceptions ○ **Mesenteric lymphadenitis** - usually preceded by an URTI ○ **Inferior Epigastric Artery Rupture** ○ **Urogenital** ○ **Gynecologic:** - PID - Adnexal Pathology - Ovarian cyst - Torsion - Ectopic Pregnancy - Mittelschmerz - Endometriosis	○ **Splenic** - Injury - Splenic Artery aneurysm - Abscess or infarction ○ **Peptic Ulcer Disease** ○ **GI:** - Gastritis ○ **Thoracic** ○ **Esophageal** (also Rt): - Reflux - Hiatal hernia - Boerhaave's Syndrome - Mallory-Weiss tear	○ **GI:** - Diverticulitis - Volvulus - Perforated Colon - Colon Cancer - Small Bowel Obstruction - IBD - Crohn's - Ulcerative Colitis ○ **Urogenital:** - UTI - Bladder distention - Nephrolithiasis - Pyelonephritis ○ **Gynecologic**

Central or Epigastric:	**Generalized** (Diffuse):
- Pancreatitis - Dyspepsia - Myocardial infarction or ischemia - Pain from midline retroperitoneal structures (aorta) - Appendicitis: initially epigastric then shifts to RUQ	- Referred pain - Peritonitis - Mesenteric Ischemia or Infarction (severe pain without any significant clinical findings on PE initially) - Ruptured Aneurysm - Intestinal Obstruction: Adhesions - Self-limiting enteritis or colitis; food poisoning

2) Onset and Duration of Pain

How does the pain come about? How long does it last? How does it fade away? Gradually or suddenly?

○ **Sudden:**
- Perforation → peptic ulcer
- Rupture → AAA
- Infarction → MI
- Mesenteric occlusion

○ **Rapidly Accelerating:**
- Colicky syndromes
- Inflammation
- Ischemia

○ **Gradual:**
- Inflammation → persist until underlying cause subsides
- Obstruction → non-strangulated bowel obstruction, urinary retention

3) Character and severity of Pain

Describe the pain to me: Is it continuous or on and off? Is it sharp or dull?
Severity: 1-10. Does it vary in severity? How did it progress?

- **Visceral:** Dull and aching, can be colicky. Poorly localized. (distention or spasm of a hollow organ)
- **Parietal:** Sharp and localized. (peritoneal irritation or spread of inflammation to the parietal peritoneum)
- **Referred:** Aching and perceived to be near the surface of the body

- **Colicky:**
- Hyperperistalsis of smooth muscle against a mechanical site obstruction of a muscular conducting tube (bowels, ureter) produces a cramping pain
- The pain fluctuates in severity at frequent intervals and described as 'gripping'
- The interval between bouts helps locate the cause:
  - Short interval: Jejunum, Intermediate: Ileum, Long: Colon
- Muscular dysfunction - GI mobility disorders (IBD) cause colicky pain but it's not true colic.
- Biliary/Renal colic: short peaks of pain which doesn't resolve completely in between exacerbations

- **Persistent:**
- Sharp, severe
- Steadily increases in intensity
- Suggests infection or inflammation

- **Burning or Gnawing:**
- GERD and PUD

4) Radiation

- **Shoulder Pain:**
- Diaphragmatic irritation
- Spleen
- Perforated ulcer or abscess
- **Loin/Groin:**
- Renal colic

- **Back:**
- Pancreatic pain
- Ruptured or dissecting AAA
- Peptic ulcer in posterior wall
- Rectal (midline small of back)
  Uterine (midline small of back

- **Scapula:**
- Gallbladder (Right)
- **Periumbilical:**
- Small bowel
- Appendicitis

5) Shifting or Migration

Did the pain shift from its initial site? After how long?
Did that increase or decrease its severity?

Did it become more localized?
Can you point out the point of maximal pain?

6) Timing (Temporal Sequence)

Did you do anything that may have initiated the pain?

- Relation to food, meals, alcohol or bowel movements. Recent trauma?

7) Alleviating and Exacerbating Factors *Does anything increase or decrease the severity?*

Factor	***Relieves***	***Exacerbates***
• Movement • Breathing	- Patients with Renal Colic or Stones are restless and unable to lie still since they find no position comfortable	Inflammation: - Diffuse peritonitis (relieved by rest and flexion of knees) - Cholecystitis, Pancreatitis
• Food	- Duodenal Ulcer	- Gastric Ulcer - Cholecystitis; Pancreatitis - Mesenteric Ischemia
• Sitting up, Leaning Forward	- Pancreatitis	-
• Vomiting	- Visceral pain in intestinal obstruction (transient) - Gastric Ulcer pain	-

8) Associated Gastrointestinal Symptoms

- **Appetite and Anorexia:**
- Is it caused by a lack of desire to eat or apprehension as eating always causes pain?
- **Diet**
- **Weight**
- **Mouth Ulcers** (Crohn's, Celiac)
- **Dysphagia and Odynophagia:**
- Solids, liquids or both? List in chronological order
- Level at which the food sticks
- Duration, Onset and Progression
- **Regurgitation**
- What comes up? If food, is it digested or recognizable and undigested?
- How often? Precipitating factors?
- **Flatulence (Belching) Water or Acid Brash**
- **Heartburn:**
- Burning sensation behind the sternum caused by the reflux of acid into the esophagus
- How often does it occur and what makes it happen, e.g. lying flat or bending over?
- **Dyspepsia:**
- Pain or discomfort centered in the upper abdomen
- 'Fat intolerance': nausea and abdominal fullness which is worse after fatty or spicy meals.
- Could be Reflux, Ulcer or Dismotility-like
- **Nausea and Vomiting:**
- Before or after onset of pain?
- How often? Amount, color, smell?
- Related to meals? Relieves symptoms?
- Is it recognizable food from previous meals, digested food, clear acidic fluid, bile-stained fluid or feculent?
- **Hematemesis:**
- Fresh blood or old, altered blood ‘coffee ground'
- Recent nose bleed? (They may be vomiting swallowed up blood)
- **Indigestion or abdominal pain:**
- A term commonly used for ill-defined symptoms from the upper GI tract
- **Distension:**
- Duration and Progression
- Is it constant or variable? (Functional bloating is fluctuating distension that develops during the day and resolves overnight in IBS)
- What factors are associated with any variations?
- Is it painful? (IBS)
- Does it affect their breathing?
- Is it relieved by belching, vomiting or defecation?

- **Altered Bowel Habits:**

normal frequency ranges from 3 times daily to once every 3 days**.**

- **Constipation:** infrequent passage of hard stools
- Lifelong or recent?
- How often do the bowels empty each week? How much time is spent straining?
- Associated abdominal pain, anal pain on defecation or rectal bleeding?
- **Diarrhea**: frequent passage of loose stools
- Is it acute, chronic or intermittent?
- Is there tenesmus, urgency or incontinence?
- **Defecation:**
- Colour: brown, black, pale, white or silver?
- Consistence: hard, soft or watery?
- Size: bulky, pellets, string or tape like?
- Specific gravity: does it float or sink?
- Smell?
- Does it contain mucus or slime?
- **Melena:**
- Passage of tarry, shiny black stools with a characteristic odor and results from upper GI bleeding
- **Rectal Bleeding (hematochezia):**
- Amount? bright or dark?
- Blood may be mixed with stool, coat the surface of otherwise normal stool, or be seen on the toilet paper or in the pan
- Severe upper GI bleeding: blood may pass through the intestine unaltered, causing fresh rectal bleeding
- Anal pain?
- **Flatus:**
- More than usual or unable to pass flatus?
- **Prolapse and Incontinence:**
- Does anything come out of the anus on straining? Does it return spontaneously or have to be pushed back?
- Is the patient continent of feces and flatus?
- Have they had any injuries or anal operations in the past?
- **Tenesmus:** Unproductive desire to pass stool
- Usually accompanied by pain, cramping and involuntary straining efforts
- Is it true Tenesmus or only due to fear of pain?
- **Change of Skin color or jaundice:**
- Duration
- Associated with itching, stool or urine color changes?

9) Review of Systems: DDx

General	*Urinary*	*Gynecological*	*Neurological*	*Respiratory and Cardiac*
• Fever - any inflamed organ, high grade if there is perforation • Chills or Rigors - Cholangitis; Choledocolithiasis • Sweating or thirst • Arthralgias, weakness, fatigue • Masses or Lumps recently noticed in the abdomen or groin? • Dehydration • **Anemia Symptoms**	• Dysuria • Polyuria • Hematuria • Nocturia • Slow flow, hesitancy or dribbling • Urine Color changes • Pruritis • Ankle Swelling	• Menstrual pattern: last period, regularity • Contraceptives • Sexual Hx • Pregnancies: normal or ectopic • Previous gynecological or tubal surgeries • Mid-cycle pain • Vaginal bleeding	• Fainting or Dizziness • Altered mental status • Vertigo • Headaches	• Cough - Symptoms of pneumonia: RUQ pain + cough + fever • Palpitations • SOB • Chest pain - Symptoms of thoracic disease

10) Past Medical, Family and Surgical History

- **Chronic diseases:**
- **Hypertension**
- **Hypercholesteremia**
- **GI Diseases**
- **Cardiovascular Diseases**: Risk of abdominal vascular disease (AAA, mesenteric ischemia)
- **Diabetes** → Predisposes to myocardial ischemia and sepsis and may mask abdominal pain
- **Cancer Hx** → Risk of bowel obstruction and perforation from recurrence.
- **Immune diseases**
- **Liver diseases or portal hypertension**
- Thyroid dyfunction
- **Blood disorders**
- **Neurological or neuromuscular disorders** (GI dysmotility)

- **Recent Dietary Hx:** food-borne illness
- **Past Hx**
- Similar condition or symptoms
- Recent infections
- Previous radiation or chemotherapy
- Previous Blood transfusions
- **Previous procedures**: endoscopy; ERCP; colonoscopy… etc
- **Previous Surgeries**:
- Adhesions may lead to intestinal obstruction
- Previous removal of any organ excludes it from consideration
- **Family Hx**
- Cancer
- Chronic diseases
- Celiac disease or IBD

11) Medications

- **NSAIDs:**
- Risk of peptic ulcer
- **Corticosteroids:**
- May mask signs of inflammation (fever, peritoneal irritation)
- **Antibiotics:**
- May decrease the pain in pts with peritonitis due to partial treatment.
- Also, if a patient has diarrhea → suspect AB-induced pseudomembranous colitis.
- **OCP**
- **Statins**
- **Vitamins and supplements**

12) Social

- Smoking (heartburn, PUD, Crohn's, GI malignancies)
- Travel Hx
- Alcohol (heartburn, dyspepsia, nausea, diarrhea, chronic liver disease)
- Sexual Hx
- Drug use
- Obesity
- Dietary Hx: fiber or fat rich; any food intolerance
- Allergies
- Recent stressors

Abdomen – Physical Examination

- *Always Remember*: Introduce yourself, explain the exam briefly and ask for permission. Ensure privacy, warmth and good lighting. Wash your hands before you start.
- *Exposure*: Ideally from the nipples to the knees, but to preserve dignity, from the costal margin to the groin.
- *Position of The Patient:*

- Supine with the head rested on a pillow (~15°) to relax the abdominal muscles and the arms should be on the side. If the abdominal muscles still aren't relaxed, ask the patient to flex their knees

- *Position of The Examiner:*

- Stand at the patient's right the whole time, except during initial inspection, stand at the foot of the bed.
- During palpation: you should SIT or kneel down beside the bed.

General Inspection

❖ *General Apperance*

- C, O, A (important for hepatic encephalopathy)
- Is the patient in pain or distressed? (shallow breathing, hyperventilation, etc)
- Cachectic or obese
- Obvious Pallor or Jaundice
- Obvious tubes or drains
- Moving or Lying still; Itching; Sweating; Rigors

❖ *Vital Signs + BMI*

- Pulse, BP, RR, and Temperature.
- Measure the weight and height then calculate the BMI, you may also measure the waist circumference

❖ *Peripheral Examination*

○ *Hands*

- Nails:
  - Clubbing (IBD)
  - Koilonychia (ID anemia)
  - Leukonychia (hypoalbuminemia, protein malnutrition, malabsorption, nephrotic syndrome)
- Temperature
- Palmar Erythema; Dupuytren's Contracture (alcoholic liver disease)
- Tremor: Asterixis
- Forearm: bruising, tattoos, IVDU signs, fistulae, hair distribution

○ *Head and Face*

- Eyes:
  - Conjuctival Pallor
  - Scleral Icterus
  - Corneal Arcus
  - Keiser-Fleischer Ring (slit lamp examination)
  - Xanthelesma
- Mouth:
  - Hydration
  - Cyanosis
  - Ulcers or Angular Stomatitis (ID anemia)
  - Tongue: Glossitis (B12 deficiency); Beefy tongue
  - Poor dentition or Caries
- Obvious Smells: Fetor Hepaticus, Alcohol, Uremia, or Ketones
- Pallor or Jaundice
- Parotid gland swelling (alcohol)

○ *Neck*

- Supraclavicular LN: Virchow's node → metastatic tumor to Lt supraclavicular node (classically due to gastric cancer)
- JVP: elevated in HF (suggests cause of hepatic congestion)

○ *Lymph Nodes*

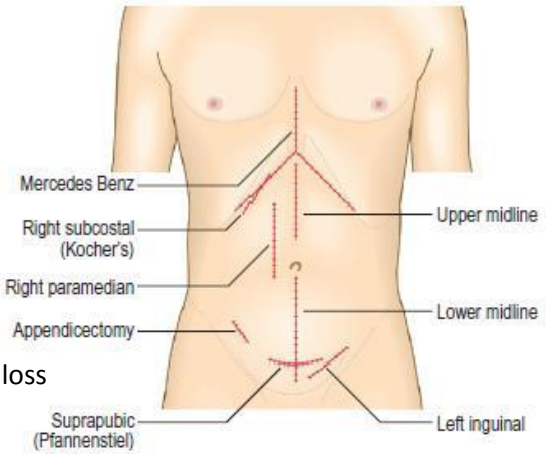
- Axillary
- Inguinal

○ *Chest and Gonads*

- Spider Naevi
- Gynecomastria and testicular atrophy in men
- Breast Atrophy
- Hair loss (axillary and pubic)

Abdominal Inspection and Examination:

❖ *Inspection*



- From the **foot of the bed**, comment on:
  - Symmetry
  - Shape of The Abdomen (Scaphoid, Distended, Flat, Full flanks)
  - Abdominal movement with respiration
  - Shape and Site of The Umbilicus
- From the **Rt side** of the patient, comment on:
  - Any masses, hernias or bulges, Sister Mary Joseph Nodule
  - 5Ss: Scars; Striae; Stomas; Sinuses; Scratch marks
  - Discoloration or bruises; Dilated veins or Caput Medusae; Hair loss
  - 2 Ps: Visible Pulsation or Peristalsis
- Perform 3 **Maneuvers**:
  - Cough Impulse
  - Cough Tenderness (Dunphy's Sign: increased abdominal pain on coughing)
  - Divarication of Recti

❖ *Palpation*

Remember to:

- Warm your hands, ask for permission and Maintain EYE CONTACT.
- Ask for a chair and sit or kneel down at the Rt side of the patient
- The whole hand should rest on the abdomen by keeping the hand and forearm horizontal, in the same plane as the front of the abdomen
- Ask if there is any pain, begin the exam away from the area of maximum tenderness

○ *Superficial Palpation*

- Start at RIF (or most distal site to pain) and move systemically around all 9 regions
- Done to gain the confidence of the patient
- Comment on:
  - Tone of abdominal muscles and guarding, tested through light, dipping movements with the fingers.
  - Superfical Tenderness
  - Superficial masses. If a mass is found then you must comment on it.

○ *Deep Palpation*

- Repeat the exam with deeper palpation
- Comment on:
  - Deep Tenderness
  - Deep masses. A mass in a particular abdominal quadrant suggests a specific diagnosis.
  - **Rebound tenderness**:
- **T**enderness that occurs when the examining hand is quickly removed from the abdominal wall (the sudden withdrawal of manual pressure). It is indicative of acute peritoneal irritation. It could also be assessed by the patient's response to light percussion.

Palpation of The Normal Solid Viscera

1) The Liver

- Place your Rt hand transversely and flat on the skin of the RIF. Ask the patient to breathe in deeply through the mouth and feel for the liver edge as it descends on inspiration. Move your hand progressively up the abdomen, 1 cm at a time, between each breath the patient takes, until you reach the costal margin or detect the liver edge.
- A normal edge is smooth and sometimes slightly tender if palpated.
- Describe the size and surface (smooth/nodular) of the liver if palpable, its consistency and tenderness.
- Percuss for the upper edge of the liver starting at the middle of the clavicle until you find dullness. Measure the liver span, it is normally 6-12 cm. It may be diminished in a patient with cirrhosis whereas hepatomegaly is detected in hepatic congestion (due to HF), NAFLD and cholestatic forms of cirrhosis.

2) The Spleen

- Start at the RIF and, using the same method used to palpate the liver, move diagonally towards the Lt 10^{th} rib.
- If you cannot feel the splenic edge, ask the patient to roll towards you and on to his right side and repeat the above. Palpate with your right hand, placing your left hand behind the patient's left lower ribs, pulling the ribcage forward.
- Percuss over the lateral chest wall (over 9^{th}, 10^{th} and 11^{th} ribs, midaxillary line) to confirm or exclude the presence of splenic dullness.
- A palpable spleen tip is highly suggestive of portal hypertension in patients with chronic liver disease.

3) The Kidneys

- Place your Lt hand behind the patient's back below the lower ribs and your Rt hand anteriorly on the right side of the abdomen just below the level of the ASIS. As the patient breathes in and out, palpate the loin between both hands.
- Feel for the lower pole of the kidney moving down between your hands. If this happens, gently push the kidney back and forwards between your two hands to demonstrate its mobility. This is ballotting, and confirms that this structure is the kidney.
- Ask the patient to sit up. Palpate the renal angle (between the spine and 12th rib posteriorly).
- With moderate force, firmly strike the renal angle once with the ulnar aspect of your closed fist after warning the patient. Note any discomfort.
- Repeat this on the Lt side.
- Percussion of the kidneys is unhelpful. Percuss for the bladder over a resonant area in the upper abdomen in the midline and then down towards the symphysis pubis. A change to a dull percussion note indicates the upper border of the bladder.

❖ ***Percussion***

- **General** percussion over the 9 regions of the abdomen
- **Test For Ascites:**
    - Shifting Dullness

- Percuss from the midline (most resonant area) to the flanks. Note any change from resonant to dull. Keep your finger on the site of dullness in the flank and ask the patient to turn to the opposite side. Pause for 10 seconds to allow any ascites to gravitate, then percuss again.
- If the area of dullness is now resonant, shifting dullness is present, indicating ascites.
    - Fluid Thrill

- Ask the patient to place the edge of their hand on the midline of the abdomen and place the palm of your left hand flat against the left side of the patient's abdomen and flick a finger of your right hand against the right side of the abdomen.
- If you still feel a ripple against your left hand, a fluid thrill is present (only detected in gross ascites).

❖ ***Auscultation***

- **Bowel Sounds**
- Normal bowel sounds are low-pitched gurgles which occur every few seconds.
- Listen at the Rt of the umbilicus for up to 2 minutes before concluding that bowel sounds are absent
- **Bruits (most important)**
- Above the umbilicus at the aorta
- 2–3 cm above and lateral to the umbilicus for bruits from renal artery stenosis.
- Listen over the liver for bruits
- **Friction Rubs**
- Splenic
- Hepatic
- **Venous Hum**
- Over dilated veins
- **Succussion Splash**
- It sounds like a half-filled water bottle being shaken. Explain the procedure to the patient, then shake the patient's abdomen by lifting him with both hands under his pelvis.
- An audible splash indicates gastric outlet obstruction or gastric paresis. The patient must not have eaten anything for the past 4 hours.

After performing the abdominal examination, you must mention that you want to examine the following:

- Hernia orifices
- Femoral pulses
- Examine the inguinal lymph nodes
- Genitalia
- Anal canal and rectum
- Gynecologic examination
- Lower limbs for edema and Pyoderma gangrenosum (IBD)

Note that, in some books, the examination sequence is inspection, auscultation, percussion and then palpation as palpation may interfere with bowel sounds. But this is only important in cases of intestinal obstruction.

❖ **Special Signs**

- ***Psoas Sign***

- Pain in the lower abdomen and psoas region that is elicited when the thigh is flexed against resistance.
- It suggests that an inflammatory process, such as appendicitis or perinephric abscess, is in contact with the psoas muscle.

- ***Obturator Sign***

- Pain elicited when the thigh is flexed and then rotated internally and externally.
- It suggests an inflammatory process in the region of the obturator muscle, such as an obturator hernia. Also seen in patients with appendicitis/pelvic abscess

- ***Rovsing's Sign***

- Palpation of the LLQ resulting in pain in the RLQ. Seen in appendicitis

- ***McBurney's Sign***

- Tenderness at McBurney's point (1/3rd the distance from the ASIS to the umbilicus on a line connecting the two)
- Seen in patients with appendicitis

- ***Murphy's Sign***

- Elicited by palpating the RUQ during inspiration: As the gallbladder descends during inspiration, acute pain is elicited, and inspiration halts.
- It suggests acute cholecystitis.

- ***Boas' Sign***

- Hperaesthesia in the region of the Right subscapula resulting from cholelithiasis.

- ***Cough Tenderness*** (Duphny's Sign)

- Occurs in the area of maximum tenderness when the patient coughs. The tenderness may also be elicited by shaking the patient or by any other sudden jarring movement.

- ***Ecchymosis***

- Could be in the flank, periumbilical region, or back and suggests a retroperitoneal hemorrhage. (Grey Turner, Cullen and Fox signs)
- Possible causes include trauma, acute hemorrhagic pancreatitis, a leaking abdominal aortic aneurysm, and intestinal gangrene.

- ***Kehr's Sign***

- Severe Lt shoulder pain
- Seen in patients with splenic rupture (as a result of referred pain from diaphragmatic irritation)

Biliary Disease – History Taking

- *Patient Profile*: Age is usually 30-60, F > M
- *Chief Complaint*: Abdominal Pain

1. *SOCRATES*

Acute Cholecystitis	Biliary colic	Chronic Cholecystitis	Acute Cholangitis
• Due to prolonged or recurrent cystic duct blockage leading to total obstruction - Lasts > 6 hours - Occurs as severe, sudden, continuous pain that reaches a plateau then diminishes gradually - RUQ, radiates to the back and the tip of the Rt scapula - Increased by movement or breathing and eating fatty meals - Relieved by analgesics. - Associated with N, V, low-grade fever and anorexia - Obstructive jaundice: pale stool, dark urine, pruritus.	• GB contracts and presses a stone against the outlet or cystic duct opening - Comes in distinct attacks lasting 30 minutes to several hours - Sudden, deep and gnawing, severe, constant, excruciating exacerbations that may cause the patient to restrict breathing - Doesn't remit between bouts - RUQ or epigastric, may radiate to the back - Associated with N and V - Exacerbated by eating fatty meals, awakens patient from sleep - **Not** relieved by analgesics	• Results from mechanical irritation or recurrent attacks of acute cholecystitis leading to fibrosis and thickening of the GB - Begins 15-30 minutes after a meal and lasts 30-90 minutes - Indigestion-like and gradual - Usually epigastric, only moves over to RUQ when severe - Associated with eating, (especially fatty meals), belching, dyspepsia, N and V only in acute exacerbations - Relieved by analgesics. - Irregular attacks that last for weeks/months with pain free intervals.	• When a stone becomes impacted in the biliary or hepatic ducts and causes dilation of the obstructed duct and bacterial superinfection - Vague, RUQ Pain - Chills and Rigors, jaundice - Confusion and hypotension can occur in patients with suppurative cholangitis - If septic shock develops, multiorgan failure may be seen

2. *Associated Symptoms*

Gastrointestinal		Other Symptoms	
○ **Appetite** ○ **Weight** ○ **Dyspepsia and Flatulence** ○ **Nausea** , **Vomiting** ○ **Altered Bowel Habits** ○ **Defecation:** - Offensive, pale, floating stools that won't flush ○ **Distension**	○ **Masses** noticed in abdomen ○ **Jaundice:** - Duration, first symptom, where is it most prominent, is it constant, how has it progressed? - Itching, Urine or stool color changes?	○ **Fever** - Cholecystitis (low grade) ○ **Chills or Rigors** - Cholangitis; Choledocolithiasis ○ **Sweating** ○ **Dehydration** ○ **Dyspnea**	○ **Cancer Symptoms**: loss of appetite, weight loss, altered bowel habits, paleness, tiredness, bouts of back pain ○ **Lethargy or coma** - Abscess under pressure ○ **Flu-like** symptoms preceding jaundice (EBV)

3. *Medical History*
- Same condition?
- Previous admission?
- Chronic GI Diseases
- DM, HTN

4. *Family History*

5. *Medications*
- OCP
- DM medications
- TPN
- Lipid lowering agents

6. *Social History*
- Travel
- Alcohol
- Smoking
- Blood transfusions
- Multisexuality

7. *Surgeries and Procedures*
- Endoscopy, ERCP
- Truncal vagotomy (PUD), terminal ileum resection, bypass

Biliary Disease – Physical Examination

- *General Appearance:*
  - Distress
  - Pattern of breathing: (shallow in acute cholecystitis)
  - 5Fs
  - Rigors
  - Jaundice
  - Sweating: acute
  - Movement: lying still and unable to move?
- *Vital Signs*
  - Temperature: Pyrexia (late acute cholecystitis)
  - Heart rate: Signs of tachycardia

- *Inspection*:
- Abdominal movement with respiration, Cough tenderness, Fullness in RH

- *Palpation*:
- **Tenderness** in the RH: palpate just below tip of 9th costal cartilage
- **Guarding** almost always found
- **Murphy's sign**: ask the patient to inspire deeply while palpating the area of the gallbladder fossa just beneath the liver edge. Deep inspiration causes the gallbladder to descend toward and press against the examining fingers, which in patients with acute cholecystitis commonly leads to increased discomfort and the patient catching his or her breath.
- **Boa's sign:** as pain radiates to tip of scapula, the affected dermatome may be hyperaesthetic.
- **A palpable mass could be:**
  1. The Gallbladder: may be found during early stages, before guarding
  2. Empyema (Abscess): A very tender inflammatory mass, moves little with respiration, found at a later stage (after several days of inflammation).
  3. Mucocele: an overdistended gallbladder filled with mucoid or clear and watery content. Non-inflammatory and results from outlet obstruction (commonly caused by an impacted stone in the neck of the gallbladder or in the cystic duct)

- *Percussion*
- Detects inflammatory masses when guarding impedes palpation (dullness under the costal margin)
- *Auscultation*:
- Bowel sounds should be present unless infection spreads and causes peritonitis

- *Mention that you'd like to perform*: Gynecological and pelvic exams, PR, Check the Pulses
- *Complications* : Patients with complications may have signs of sepsis (gangrene), generalized peritonitis (perforation), abdominal crepitus (emphysematous cholecystitis), or bowel obstruction (gallstone ileus)

- *Investigations:*

➢ **CBC:**
- Leukocytosis (a left shift)

➢ **Electrolytes and Enzyme levels**:
- Elevation in the serum total bilirubin and alkaline phosphatase concentrations in complicated conditions such as cholangitis, choledocholithiasis, or Mirizzi syndrome.

➢ **Nuclear cholescintigraphy (HIDA)**:
- In cases in which the diagnosis remains uncertain after ultrasonography.

➢ **Ultrasonography:**
- Usually the first test obtained and can often establish the diagnosis.
- Sonographic features of Cholecystitis include:
  - The presence of stones in the gallbladder
  - Gallbladder wall thickening or edema
  - A Sonographic Murphy's sign: the positive response is observed during palpation with the ultrasound transducer.

➢ **MRCP; ERCP** (choledocholithiasis; cholangitis)

➢ **CT**

Acute Appendicitis – History Taking

- *Patient's Profile; Chief Complaint: Abdominal Pain in the RIF + duration*
- *History of Present Illness:*
- **Pain:**

Site, Character and Severity	• Initially: - Initially it's a progressive, persistent midabdominal (epigastric) discomfort (visceral pain)	• Shifting: - Once the inflammation extends to the parietal peritoneum, the pain becomes sharp and localized at the RIF
	The pain usually shifts after 5-6 hours but it sometimes takes 2–3 days	
Onset, duration and offset	The onset of symptoms to time of presentation is usually less than 24 hours for acute appendicitis and averages several hours.	
Radiation	Does the pain radiate anywhere?	
Timing	What do you think may have initiated the pain?	
Exacerbating and relieving factors	Peritoneal irritation is associated with pain on movement and coughing. Is it relieved by analgesics?	
Associated With	• Anorexia and loss of appetite, precede pain • A low-grade fever (<38.5°C) • Nausea and Vomiting: after the onset of pain	• Constipation: present a few days before the pain but a few complain of diarrhea • Fever, rigors and sweating: indicate an abscess or generalized peritonitis
Unusual presentations	• Retrocecal Appendix: - Doesn't cause signs of peritonitis as it may be separated from the anterior abdominal peritoneum. Irritation of adjacent structures can cause diarrhea, urinary frequency, pyuria, or microscopic hematuria depending on location.	• Pelvic appendix: - Can present with urinary symptoms such as urinary frequency and dysuria. - Or it may present with rectal symptoms, such as tenesmus and diarrhea. - A pre or post-ileal appendix may present with symptoms of intestinal obstruction

- **Other Symptoms and DDx:**

o *Peptic Ulcer Disease:*
- Ask about epigastric pain, related to food and associated with heartburn, NSAID use

o Gynecologic:
- Menstrual irregularities, vaginal discharge (PID). Last menstrual period (pregnancy). Note that appendicitis during pregnancy may present as pain in the RUQ.

o Intestinal obstruction:
- Distension, constipation and inability to pass flatus

o Urinary:
- Ask about dysuria/poly/hematuria

o *Mesenteric Adenitis*:
- Was the pain preceded by an URTI?

o *Inferior Epigastric Artery Rupture*
- Causes hematoma: Pain + swelling in the RIF or LIF

- **Past Medical and Surgical History**
- **Family History**
- **Medications**
- **Social History**

- **Investigations:**

- CBC: leukocytosis (left shift) and neutrophilia
- Urinalysis: Pyuria, albuminuria, and hematuria
- C-Reactive Protein
- Electrolytes (may be abnormal due to dehydration and Vomiting)and a pregnancy test (hCG) are optional
- Ultrasound: most useful in women of child-bearing age and in children
- CT scan: superior to U/S, highly sensitive and specific
- MRI: pregnant patient whose appendix is not visualized on U/S

Acute Appendicitis – Physical Examination

- *General Appearance:*
  - Distress: look unwell with flushed cheeks
  - Pattern of breathing
  - Sweating, Rigors (peritonitis)
  - Movement: lying still and unable to move?
  - Fetor oris
- *Vital Signs*
  - Low-grade pyrexia (If high: suggests general peritonitis and a ruptured appendix)
  - Heart rate: pulse rate is usually elevated and rises as the infection spreads

- *Inspection of Abdomen*:
- May be slightly distended. Comment on abdominal movement with respiration. Cough tenderness. The right hip may be kept slightly flexed if the appendix lies against the psoas major.

- *Palpation*:

➢ **Tenderness and Guarding**:

- The right iliac fossa (normally)
- Retrocecal appendix: Lateral part of the lumbar region (the flank), may not exhibit marked localized tenderness in the RIF
- Subhepatic: Below the right costal margin

➢ **A palpable mass:**

- Uncommon in the RIF, may suggest a periappendiceal abscess or phlegmon
- An appendix mass: usually takes a few days to develop. A tender, indistinct mass felt in the RIF, It is usually impossible to feel below it because it is fixed posteriorly. Dull to percussion.
- An appendix abscess: swinging fever and a very tender mass that may fluctuate in late stages and cause edema or reddening of overlying skin.

➢ **Rosving's Sign:**

- Pressure on the LIF may cause pain in the RIF.

➢ **McBurney's Point:**

- It is classically the maximum site of tenderness and must be carefully assessed by gentle palpation.
- Two thirds of the distance from the umbilicus to the ASIS.

➢ **Rebound Tenderness** (in RIF)

➢ **The Obturator Sign:**

- While the patient is supine with the knee and hip flexed, the hip is internally and externally rotated. Hypogastric pain indicates that the appendix lies against the obturator muscle.

➢ **The Ilopsoas Sign:**

- The patient should lie on their left side. With the knee flexed, the thigh is hyperextended. The test is positive if the patient experiences pain on the right side with this maneuver.

- *Percussion*
- Causes pain if peritonitis is present. Dullness suggests an underlying mass obscured by guarding.
- *Auscultation*:
- Bowel sounds are present unless perforation and general peritonitis have caused a paralytic ileus.
- *Mention that you'd like to perform*: Gynecological and pelvic exams, PR (not very useful), Check pulses.

- *Complications* : Perforation is accompanied by severe pain, fever, tachycardia and generalized peritonitis. Intra-abdominal and pelvic abscesses occur with perforation. Could become gangrenous.
- *Chronic Appendicitis*: Two forms of chronic inflammation may develop in the appendix: The Mucocele and the Empyema. Follow recurrent acute appendicitis attacks and cause RIF pain that may be colicky. Worms and fecoliths may produce similar symptoms.

Pancreatitis – History Taking

- *Patient's Profile: Age is usually 40-50*
- *Chief Complaint: Epigastric Pain that radiates to the back*
- *History of Present Illness:*
- **Pain:**

Site, Character and Severity	- Epigastric (in the upper abdomen). It is severe, dull, gnawing and persistently aching. - Gallstone pancreatitis: pain is well localized and the onset of pain is rapid (reaches maximum intensity in 10-20 minutes). - Pancreatitis due to hereditary or metabolic causes or alcohol: The onset of pain may be less abrupt and the pain may be poorly localized	
Onset, duration and offset	Sudden onset with severity gradually increasing. The pain lasts days. Its onset is rapid, but not as abrupt as that with a perforated viscus	
Radiation	Band-like radiation to mid back, Pancreatic cancer: radiation to the LH (tumor at the head) or RH (tumor at the tail)	
Timing	What do you think may have initiated the pain? Eating a large meal or drinking alcohol?	
Exacerbating and relieving factors	Does it increase at night (cancer)? Do movement and lying supine increase it? Usually there are no alleviating factors but bending forward while sitting may relieve it slightly	
Associated With	• Vomiting: Frequency, color, smell, amount and content. Any involuntary efforts to vomit without fruitful vomiting? • Nausea: persistent between vomting attacks • Dizziness • Restlessness and agitation • Patients with fulminant attacks may present in shock or coma	• Jaundice: Cancer or Chronic pancreatitis • Inability to take full breaths and dyspnea? (diaphragmatic inflammation secondary to pancreatitis, pleural effusions, or ARDS) • Steatorrhea: Fatty and frothy stool that doesn't flush (chronic, cancer) • Muscle cramps or spasms (hypocalcemia), in severe cases only • Weight loss: Cancer or Chronic

- **Other Symptoms and DDx:**

- *Gallbladder Disease:*
  - Flatulence, dyspepsia, jaundice
  - Past Hx of biliary tree disease: previous attack of upper indigestion like abdominal pain with flatulence and belching, or jaundice?
- Other GI Symptoms
- Urinary Symptoms
- Gynecologic Symptoms

- Pancreatic cancer:
  - The pain is incessant and boring, accompanied by gastric discomfort, anorexia and weight loss
  - Steatorrhea, epigastric bloating, flatulence, altered bowel habits
  - Vomiting
  - Obstructive Jaundice: Pale stools, dark urine, itching
  - Respiratory Symptoms (metastasis)

- **Past Medical and Surgical History**
  - Previous attacks? Frequency? (2-3 times a year indicate chronic pancreatitis)
  - Surgeries: Pancreas, stomach, heart?
  - **Previous Procedures**: Recent ERCP?
  - **Chronic Diseases**: DM; Hyperparathyroidism; Hyperlipidemia (increased LDH)

- **Medications**
  - OCPs
  - Diuretics
  - Corticosteroids
  - AB (tetracycline)
  - Chemotherapy
  - Opiate analgesics

- **Social History**
  - Alcohol
  - Smoking
  - Scorpion sting (very rare)
  - Contact with a person that has mumps

- **Family History**
  - Of same condition

Pancreatitis – Physical Examination

- *General Appearance:*
  - Distress
  - Pattern of breathing: Shallow
  - If respiration is impaired: the patient appears apprehensive, dyspnic and cyanosed
  - Pale and Sweating (indicate hypovolemia)
  - Movement: the patient lies still
  - Jaundice: if the cause is a stone lodged in the lower end of the bile duct or if edema in the head of the pancreas compresses it
- *Vital Signs*
  - Temperature: not usually elevated
  - Heart rate: Tachycardia
  - BP: if the patient has become hypovolemic, the JVP and blood pressure may be low

- *Inspection of Abdomen*:
- Comment on abdominal movement with respiration (usually none as pain is severe and the tone of the muscles increases). Cough tenderness. Distention may be present.
  - **Grey Turner and Cullen's Signs:** bruising or discoloration in the left flank or periumbilical region respectively. Those are late and rare signs that indicate extensive destruction of the gland due to retroperitoneal hemorrhage (very severe haemorrhagic pancreatitis).

- *Palpation*:
  - **Tenderness and Guarding** in the upper abdomen.
  - **Pseudocyst:** A collection of inflammatory exudates that develops in the lesser sac and This is initially suggested by fullness in the epigastrium,which may become a more prominent mass if a pseudocyst or abscess develops.

- *Percussion:* May cause pain. Dullness may be found over a developing pseudocyst.

- *Auscultation*: Bowel sounds present in the first 12-24 hrs but fade away if a paralytic ileus develops.

- *Mention that you'd like to perform*: Gynecological and pelvic exams, PR, Check pulses and LN.

- *Notes:*
  - You may find: Hepatomegaly in patients with alcoholic pancreatitis, xanthomas in hyperlipidemic pancreatitis, and parotid swelling in patients with mumps.
  - **Any patient with severe pain but minimal abdominal signs may have acute pancreatitis.**
  - **Carcinoma of the head of the pancreas**: Obstructive jaundice, a palpable gallbladder and an enlarged liver. In the early stages there are barely any physical signs.
  - **Chronic pancreatitis** can cause thrombosis of the portal vein (signs of portal HTN will be present). There are often few physical signs. Patients often look distraught and disheveled. Associated with DM.

- **Investigations (acute pancreatitis):**
  - Serum amylase and lipase: elevated
  - ALT: >3x (gallstone pancreatitis)
  - CRP: elevated
  - CBC: leukocytosis
  - Hematocrit: Elevated
  - LFT: increased bilirubin
  - Abdominal X Ray: unremarkable findings in mild
  - Abdominal US: appears diffusely enlarged and hypoechoic
  - Abdominal CT
  - MRI: higher sensitivity than CT
  - MRCP or ERCP: choledocholithiasis

Diverticulitis – History and Examination

- A diverticulum is a sac-like protrusion of the colonic wall. Uncomplicated diverticulosis is often asymptomatic and an incidental finding on colonoscopy or sigmoidoscopy. Some patients complain of cramping, bloating, flatulence, and irregular defecation.
- Acute diverticulitis is an inflammation due to microperforation of a diverticulum. It is either simple or complicated. Complications include: bowel obstruction, abscess, fistula, or perforation.

- *Patient's Profile: Age is usually 50-70*
- *Chief Complaint: usually presents as abdominal pain in the LLQ*
- *History of Present Illness:*
- **Pain:**

Site, Character, Shifting and Severity	- The first symptom is often a mild intermittent lower abdominal pain which then shifts to the left iliac fossa where it becomes a more constant ache. The pain begins gradually before becoming more severe and constant. The pain is usually in the left lower quadrant due to involvement of the sigmoid colon. - Much less commonly, right-sided (cecal) diverticulitis which has a higher incidence in Asian populations.	
Onset, duration and offset	Pain is usually constant and is often present for several days prior to presentation	
Radiation	May radiate to the suprapubic area, left groin, or back	
Timing	Some patients can relate their attacks to the type of food they have eaten	
Exacerbating and relieving factors	Does anything increase or decrease the pain?	
Associated With	• Fever: low grade • Altered bowel habits: Most patients are constipated but a few develop diarrhoea • Nausea • Vomiting: rare • Loss of appetite • Hematochezia: rare	• Generalized peritonitis: rare and results if diverticular perforation leads to widespread fecal contamination • Urinary urgency: if the colon lies against the vault of the bladder and the bladder wall becomes inflamed, there may be increased frequency of and painful micturition.

- **Other Symptoms and DDx:**
  - Generalized Symptoms
  - GI Symptoms
  - Urinary and Gynecologic Symptoms

- **Past Medical and Surgical History**
  - Previous episodes of similar pain
  - Hx of chronic diverticular disease, flatulence, distension and LIF pain.
- **Medications, Social Hx, Family Hx**

- **Physical Examination:**

- The most common finding is localized left-lower-quadrant tenderness. The finding of a mass suggests an abscess or phlegmon (tender, sausage-shaped). Distention may be present. The patient lies still, is tachycardic and pyrexic. **Reversed Rosving's sign** may be present.
- Patients may have localized peritoneal signs (guarding, rigidity, and rebound tenderness).
- PR: mass or tenderness with a distal sigmoid abscess. Stool may be positive for occult blood.

- **Investigation:**

- Evaluation by CT scan and complete blood count (CBC) is the standard of care. Neither sigmoidoscopy nor contrast enema is recommended because of the risk of perforation or barium or fecal peritonitis.

Intestinal Obstruction – History Taking

- *Patient's Profile; Chief Complaint:* **Pain; Vomiting; Distension; Absolute constipation** that either present abruptly or are intermittent and resolve only to recur again.
- *History of Present Illness:*

- **Pain:**

Site, Character and Severity	- True colic. It occurs as a severe central griping pain interspersed with periods of little or no pain. - Small bowel colic is felt at the center of the abdomen whereas large bowel colic is felt at the lower 1/3rd of the abdomen.	
Onset, duration and offset	- Small bowel colic occurs every 2–20 minutes, depending on the level of obstruction - Large bowel colic occurs about every 30 minutes or more	
Radiation	Does it radiate anywhere?	
Timing	What do you think may have initiated the pain?	
Exacerbating and relieving factors	Does anything increase or decrease the pain?	
Associated With	• Vomiting: Color, amount, smell, blood - Relation to meals? Relieves symptoms? - Pyloric obstruction: Watery, Acidic - High small-bowel: bile stained - Below middle of small bowel: feculent - Proximal: earlier presentation and more prominent than distal. It can be relatively severe and so patients may cease taking in food or liquids orally. • Abdominal Distention (The lower the site of the obstruction, the more bowel there is available to distend). - High obstructions are not associated with distension (Duodenum or Jejunum: not prominent, Lower level: more prominent) - Patients may state that pants or belts are not fitting properly • Diarrhea: in some cases, in partial obstruction or intermittent: closes for a while then opens evacuating all of the contents	• Constipation: duration, stool changes, blood, mucus, any anal pain? - More distal obstructions present with constipation earlier - Complete: neither faeces nor flatus are passed. This occurs early in lower large bowel obstructions and late in high small bowel obstructions. • Changes in the patient's caliber of stools: strongly suggest carcinoma especially if accompanied by weight loss • Symptoms of strangulation: - Pain - Fever - Tachycardia - Tachypnea • Symptoms of dehydration if there's excessive vomiting

- **RF:**
  - Paralytic Ileus:
- Prior abdominal or pelvic surgery, Intestinal inflammation, trauma or spinal injuries.
- Stress: sepsis and burns, Vascular: shock, Drugs: narcotics and anticholinergic, Metabolic: Renal failiure.
  - Abdominal wall or groin hernia
  - Adhesions: abdominal scar
  - Malignancy
  - Intussusception or Volvulus

- **Past Medical and Surgical History**

- Hx of chronic constipation, long-term cathartic use, and straining at stools: diverticulitis or ca
- Hx of recurrent left LLQ pain over several years: diverticulitis, a diverticular stricture
- Hx of aortic surgery: ischemic stricture
- Pneumaturia, mucinuria, or fecaluria: indicate fistulization of the sigmoid colon to the bladder

- **Medications, Social History and Family History**
- History of foreign body ingestion; gallstones
- **ROS:** General; GI; Urinary and Gyne Symptoms, as well as symptoms of HF.

Intestinal Obstruction – Physical Examination

- **Physical Examination:**

- **Perform a full abdominal examination, pay special attention to:**
- **Note:** some references state that in cases of known or highly suspected intestinal obstruction, the auscultation should be performed first as palpation may interfere with the bowel sounds.

    - **Inspection:**

- Surgical Scars
- Distention
- Visible peristalsis
- A hallmark of small bowel obstruction is dehydration, which manifests as tachycardia, orthostatic hypotension, and reduced urine output, and if severe, dry mucus membranes.
- Fever may be associated with infection (eg, abscess) or other complications of obstruction (ischemia, necrosis).

    - **Palpation**

- Abdominal masses
- Hernias
- Signs of strangulation: pain, tenderness, guarding, rebound.
- Obstruction of the colon causes the colon to distend around the periphery of the abdomen. The distension then extends into the small bowel if the ileocaecal valve is incompetent. If this valve remains competent, the right side of the colon, especially the caecum, can become grossly distended, causing a visible bulge in the right iliac fossa which is hyper-resonant.

    - **Percussion**

- Distention of the bowel results in hyperresonance or tympany to percussion throughout the abdomen. However, fluid-filled loops will result in dullness. If percussion over the liver is tympanitic rather than dull, it may be indicative of free intraabdominal air.

    - **Auscultation:**

- The bowel sounds in a patient with mechanical obstruction are at first loud, frequent and obstructive in nature. As the bowel distends, the sounds become more resonant and high pitched (“tinkling” sounds), before eventually becoming amphoteric.

    - **Digital rectal examination:**

- Should be performed to identify fecal impaction or rectal mass as the source of obstruction.
- Gross or occult blood may be related to intestinal tumor, ischemia, inflammatory mucosal injury, or intussusceptions.

- **Investigations:**

- **Abdominal X-ray:** confirms the Dx and site. Evidence of complications: ischemia, perforation, fistula and fluid in the peritoneal fluid may be detected. There are usually multiple air fluid levels.
- **Contrast Studies**: Ba meal is contraindicated in the case of a partial obstruction and strangulation. Ba enema is also contraindicated in cases of strangulation.
- **Endoscopy**: sigmoidoscopy and colonoscopy are both diagnostic and therapeutic.
- **Labs:** CBC with differential and Elctrolytes**:** not specific for a diagnosis. Anemia suggests Crohn’s disease, tumor, or Meckel’s diverticulum. Serum phosphate decreases in strangulated IO.

Dysphagia – History Taking

❖ *Patient Profile and Chief Complaint*

❖ *History of Present Illness:*

Dysphagia	
○ Duration ○ Onset ○ Solids, liquids or both? - Order them, which occurred first ○ At what level does the food stick? ○ Intermittent vs. Progressive ○ What do you think caused this?	○ Timing: - Is it worse over the course of the day? (Myasthenia Gravis) ○ Progression of the symptoms ○ Alleviating or Exacerbating Factors - Relieved by sitting forward?
Associated With	
• Odynophagia - Site - Only on swallowing • Coughing or Choking on swallowing - When? Is it nocturnal • Chest Pain; SOB; Stridor • Regurgitation: - Undigested? Bad Smell? When? • Symptoms of metastasis • Skin around the lips or fingers feels tight? (sclerosis)	• Heartburn, belching, waterbrash • Lump in the throat (Globus) • Neck Bulge (Pouch) • Halitosis (Zencker) • Weight Loss • Appetite • General weakness or mental status change • Anemia Symptoms: - Tongue sores - Tingling in the leg - SOB - Dizziness - Fatigue and Weakness

❖ *Previous History and Risk Factors*

• **Medical and Surgical History:** - Previous esophageal disease - Previous Stroke or Neurologic Disease (Mysathenia Gravis, Bulbar Palsy) - HIV	• **Medications:** - NSAIDs - Steroids - Iron Tablets (Plummer Vinson) - Pills taken without water
• **Family History:** - Cancer	• **Social History:** - Smoking - Alcohol - Diet

History of Fresh blood per rectum

*** patient profile: most importantly the **age** & sex .

*** chief compliant : blood per rectum + duration .

*** first of all you have to know the character of blood.

The blood :

**color (red (fresh) , black (melena) , maroon) .

** how does it appear ??

- Mixed with the feces(mostly from the sigmoid colon).
- On the surface of the feces . (lower sigmoid , rectum , anal canal)
- Separate from the feces, either after or unrelated to defecation .
  (bleeding followingdefecationis probably from an anal condition Hemorrhoid) ,
  (blood is passed by itselfin Diverticular disease , CA , IBD) ,(it may cause by massive upper GI bleeding, occasionally)
- On the toilet paper after cleaning(fissure , hemorrhoid) .

*** If there is any Pain ??

SOCRATES …… it is very helpful to make a diagnosis☺

- Pain from anal canal is felt principally on defecation (splitting pain or tearing pain with anal fissure) .
- Hemorrhoid and rectal cancer are not painful usually.
- Lower abdominal colic due to obstruction in the rectosigmoid junction (like CA) .
- LLQ discomfort with bloating and constipation /diarrhea .
- History of peptic ulcer disease or liver cirrhosis (massive bleeding).

@ Associated symptoms (veryimportant)

@ if there is peri-anal itching (mucus leakage to the peri-anal skin as in hemorrhoids)

@ if there is a feeling of something coming out of anus during defecation and how it is returned (spontaneously or manually) as in hemorrhoids.

@ incontinence and soiling.

@ tenesmus (CA) .

@ change in the bowel habit .

@constipation first you have to know what he/she really means by that !!! (if it's due to CA , fear of pain in fissure or it's the cause of fissure).

@diarrhea, again you have to know what he/she means by that !!!

@ weight loss ?? how much and the duration.

@ nightsweats, fatigue , respiratory symptom as in TB ulcer in anal canal .

@ symptoms of anemia .

*** past medical (long history of unexplained anemia , constipation)

*** surgical history .

*** Family history: important (UC ,Crohn's disease ,HNPCC, Polyps)

*** Drug history (NSAIDs, any drug that causes cirrhosis, **abuse of antibiotics as in** pseudomembranous colitis) .

*** social history (smoking , alcoholic ,Diet)

GOOD LUCK

Colon CA history:

- **Age:** most patients are over 50.
- **Sex:** both are equally affected.
- **Race:** African American are more affected.
- **Symptoms:**
  - General: Fatigue, Anorexia, Weight loss.
  - Anemia symptoms: fatigue, SOB.
  - Abdominal pain: uncommon, usually mild colicky but becomes persistent after few weeks/months.
  - Alterating constipation and diarrhea: more in left colon CA. Blood streaks on feces suggests Rectal cancer, Blood mixed with feces is suggestive of colon cancer.
  - Hematochezia/melena : mostly in rectosigmoidal colon CA.
  - Tenesmus: mostly in rectal CA.
  - Narrowing of stool caliber.
  - symptoms of obstruction: abdominal distention, nausea, vomiting.. these indicate late disease.
  - Symptoms of metastasis: Colon cancer initially metastasize to liver causing hepatomegaly and RUQ enlargement, jaundice, and abdominal distention due to ascites. Other sites include the lung causing SOB, cough,.. & brain causing headache & confusion.
- **Progression:** usually early symptoms are only fatigue and weight loss, other symptoms appear later, obstruction is a late manifestation, and if very late the patient may present with a picture of perforation and peritonitis.
- **Past Medical hx:** all of the following diseases found to increase the risk for developing Colon CA.
  - Hx of Inflammatory bowel Disease.
  - Personal hx of previous colon cancer or polyp.
  - Acromegaly.
  - Diabetes Mellitusand Insulin resistance.
  - Hx of Abdominal radiation therapy.
- **Family hx:**
  - Family history of colon cancer and other cancers (uterine, ovarian)
  - Familial Adenomatous Polyposis.
  - Hereditary non-polyposis colorectal carcinoma (Lynch syndrome).
- **Social hx:**
  - Alcohol.
  - Smoking
  - Obesity.
  - Sedentary lifestyle.
  - High fat, low fiber diet.

Physical Examination:

In general, physical exam has a little value in colon cancer, as most patients have a normal exam except in late stages where obstruction, perforation or metastasis cause physical signs.

- **General:**
  Look for pallor, weight loss, signs of cachexia, BMI, and jaundice (liver mets).
- **Lymph nodes:**
  Examine Supraclavicular and Inguinal lymph nodes.
- **Abdomen:**
  - Inspection:
    - Distention
    - Visible masses
    - Scars (prior surgery)
  - Palpation: superficial and deep. Look for:
    - Masses
    - Tenderness
    - Palpate the liver (may be enlarged with rough edges)
  - Percussion:
    - Percussion may be dull on masses.
    - Do Liver Span looking for Hepatomegaly.
    - Do ascites tests: shifting dullness and transmitted thrills.
  - Auscultation:
    - Bowel sounds could be hyperactive if the patient presents with obstruction.
  - Do PR exam and bimanual exam.

Note that rarely patients presents with perforation of the bowel with signs of diffused peritonitis: board like rigidity, generalized tenderness, fever, rigors, and absent bowel sounds on auscultation.

- Examine the chest for possible Lung mets: decreased breath sounds, dullness on percussion.
- Examine the mental status of the patient for possible brain mets.

Note that Colon CA almost always metastasize initially to the liver except tumors of the inferior rectum which can bypass the portal circulation and metastasize via the inferior rectal vein.

Examination of Inguinal hernia

Always examine both inguinal regions.

This is a simplified version of inguinal hernia examination (steps to do if it comes as a station, which is unlikely?).

Ask the patient to stand up to see the true size of the hernia

Look from front

Comment of:

- Size,site,shape
- Surface (smooth, not smooth, redness in strangulated hernia)
- Visible cough impulse

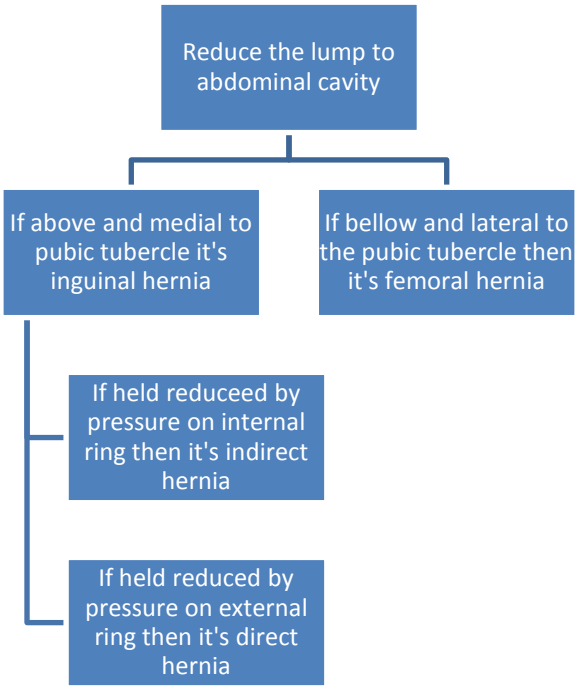
Feel from front

- Examine the scrotum for epididymal cyst or hydrocele
- Is the lump a true hernia or a scrotal lump? If you can feel the upper edge of the lump between your thumb and index finger then it's scrotal lump, If you can't then it's a hernia.

Feel from the side

Now you have ruled out a scrotal swelling. Go to the side of the hernia and palpate for:

1. Shape: pear shaped or hourglass shaped
2. Size
3. Position
4. Temperature: Hot indicates strangulation
5. Tendernes: A strangulated hernia is tender to touch, a strangulated hernia is not painful unless you push too hard
6. **Expansile cough impulse**: Compress the lump firmly with your fingers and ask the patient to cough.Presence of expansile cough impulse is diagnostic for hernia but its absence may indicate adhesions.
7. **Composition**
    - Consistancy: (soft if contains bowel and rubbery if contains omentum)
    - Fluctuation: (fluctuant it contains bowel, nonfluctuant it contains omentum)
    - Percuss: (resonant it's bowel, dull it's omentum)
    - Auscultate bowl sounds
    - Use a torch for translucency
8. **Reducibility**



9. Also you can do internal ring test to differentiate between direct and indirect hernia: press on internal ring and ask him to cough if you feel the hernia then it’s indirect.
10. Feel the other side
11. Ask to examine the abdomen

Rami Amawy

Jaundice

Definition:

Yellow pigmentation of skin , mucous membrane or sclera caused by heterogeneous group of disease.
*normal serum bilirubin→ 0.2- 1 mg/dl
*jaundice →2.5 mg/dl

Classification:

-First classification:
a-Unconjugated
1)Over production (hemolysis/ ineffective erythropiosis)
2)Decrease hepatic uptake (drugs/sepsis/fasting)
3)Decrease glucuronyl transferase (gilbert's & criggler najjar syndrome/ neonatal j.)
b-Conjugated
1)Impaired hepatic excretion
*familial
*acquired (hepatocellular dz./ drugs/ sepsis)
2)Extrahepatic biliary obstruction (stone/tumor...)
-Second classification:
1)Prehepatic jaundice → haemolytic anaemia.
2)Hepatic jaundice → infectious hepatitis.
3)Posthepatic jaundice → gallstones and carcinoma of the pancreas.

Pathophysiology:

1)Increase intrabiliary pressure→ extravasation of bilirubin→inflammatory reaction→fibrosis→secondary biliary cirrhosis.
2)Renal failure in 10%
*hypopefusion of kidneys during surgery.
*inhibiting affect of bilirubin on myocardium.
*endotoxins.
3)Sepsis (due to ERCP & PTC)
4)Bleeding
*following PTC or portal hypertension
*depletion of vit-k dependent factor (1,9,7,5)

Metabolism of bilirubin: (in lectures & fig-1)

5

**The daily production of bilirubin is around 300 mg/dl*

**Sources of bilirubin*

1)The erythropoietic source (80%)The bilirubin is derived from hemoglobin which derived from destruction of old RBC (after 120 *days)* the destruction happened in reticuloendothilal system (spleen).

2)(15-20 %) of bilirubin comes from the bone marrow here destruction of immature RBC or turnover of heme. contains proteins in the liver.

The heme by the action of enzyme hemeoxygenize converted into biliverdin & the later by the action of biliverdin reductase converts into bilirubin.

**Pathway of bilirubin in the body in normal condition:*

First the bilirubin is carried by the Albumin from reteculoendothial system to the hepatocyte (In hepatocyte there are receptors on the cell membrane carrier protein inside the cell called ligandin that introduces this substance to the hepatocyte)

In hepatocyte series of reaction happened by the action of Glucuionyl transferase enzyme. It starts to form bilirubin monoglucuionate (BMG). This (BMG) either execrated into the intestine or reabsorbed into the serum then re excreted by the kidney or activated by (Glucuronyl transferase transglucurondase) into bilirubin diglucuionate (BDG), this BDG also excreted into the intestine. The bile that reach the intestine (15 % BMG & 85% BDG) In the intestine it call urobilinogens it will be activated by bacterial flora of the intestine and some of it reabsorbed & excreted by kidney & some of it excreted by feces & called stercobilinogens

Note:

The bilirubin in intestine called urobilinogens & urobilinogens either reabsorbed in terminal ileum or remains in intestine, if it remains in the intestine & reaches the colon , colon flora will act on it & form stercobilinogens.

History:

➢ *Age & Sex:* vary

➢ *Occupation:* (hospital & laboratory worker/ sewage workers)

➢ *Symptoms:*

1)Pain:

*analysis of pain

*not present in hemolytic j.

*sudden onset pain present in obstructive j.

2)Yellow pigmentation of skin or sclera:

*its onset important if sudden so its obstructive

3)Color of stool & urine:

*if dark urine and pale stool so obstructive j.

*

4)Itching of the skin.
*only in obstructive type.
5)Fever & rigor:
*fever & rigor in stone or stricture but in hepatitis only fever
6)Appetite, weight change, Altered bowel habit & Gastrointestinal bleeding
7)GIT & UGT symptoms you must ask about it always.

➢ *Past medical & surgical History:*

-Immunizations (hepatitis A)
-Past medical history (pancreatitis, jaundice, hepatitis)
-Recent surgery (biliary surgery or even in other part of GIT)
-Blood transfusions
*transport hepatitis B or C & if pt. receive injectable medication.
*or as treatment of hemolysis

➢ *Drug History:*

-Hepatotoxic drugs →(paracetamol)
-Drug that cause hemolysis →(sulpha drug)

➢ *Family History:* (congenital spherocytosis, SCA, G6P diff.)

➢ *Social History:*

-Sexual and contact history (hepatitis B or C)
-Alcohol history & travel history -Skin tattooing (hepatitis B or C)

**Note in surgical jaundice (obstructive) the history is:*
Sudden onset dyspepsia, pain or biliary colic, yellowish pig.. of skin or sclera, pale faeces and dark urine, fever & rigor, skin itching, past history of biliary colic & biliary surgery. no premonitory period of malaise and loss of appetite.

Examination:

➢ *General examination:*

Head & Neck:

1-Yellow sclera & mucous membrane of mouth
2-Sings of anemia (eye/mucous membrane of mouth)
3-Fetohepaticus (live failure)
4-Lymph node mainly left supraclavicular
5-Tattoos & leuconychia

Hand & Leg:

1-Flapping tremor (live failure) 2-clubbing (cirrhosis)
3-Scratch mark (obstructive) 4-Xanthoma (obstructive)
5-Purpura (clotting factor dif.) 6-Needle mark (hepatitis B or C)
7-Leg edema (Protein diff.)

➢ *Abdominal examination:* (full Abd. examination)

Inspection:

7

1-Bulging (live or spleen) 2-Hair distribution (cirrhosis)
3-Scars of previous biliary surgery 4-Dilated veins (cirrhosis)
5-Spi.lernavei 6-Gynecomastia

Palpation.

1-Superfacial & deep palpation (look for tenderness or mass)
2-For organomegaly (liver & spleen)
Examination for ascites (in case of cirrhosis)
Percussion: (liver & spleen)
Auscultation: (Liver bruits→ hepatoma)

Investigation: (in lectures)

1)LFT 2)U/S
3)CT-scan 4)PTC or ERCP

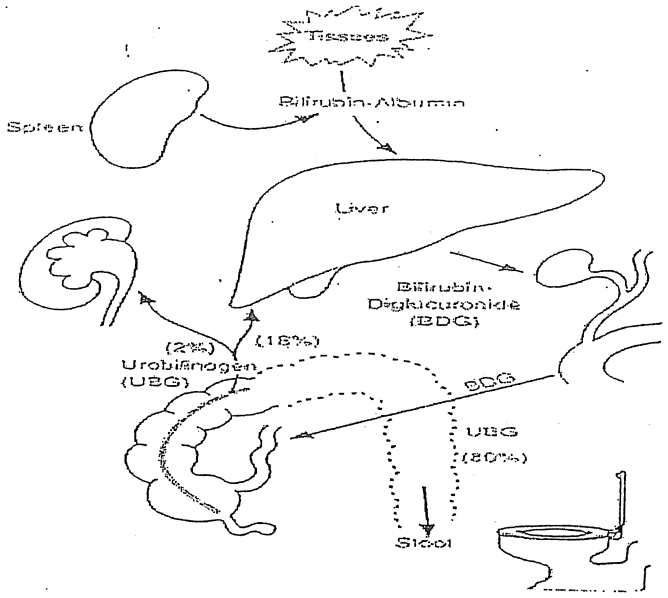


Fig-1

8

Peripheral Arterial Disease – History Taking

- ***Patient Profile***

- Name and Sex: Males have a much higher risk
- Age: usually > 50-60, but also in younger pts with Buerger's or a traumatic occlusion of a major artery or after an arterial embolism
- Marital Status, Residence, Occupation and Admission

- ***Chief Complaint***

- Pain in the lower limbs on walking since ____.

- ***History of Present Illness***

❖ *Claudication and Rest Pain*

	Intermittent Claudication	Rest Pain
Site	In a muscle: - Calf (most common) - Thigh - Buttock - Foot - Upper limb and forearm	In the most distal part of the limb, mainly the toes and forefoot. If there's gangrene, pain is felt at the junction of living-dead tissues.
Onset	Begins insidiously	Continuous
Character	Cramping-like, begins as aching then becomes tearing.	Burning or aching and unremitting.
Radiation	Does it go anywhere else?	
Timing	ONLY develops when the muscle is exercised and must disappear gradually when the exercise stops.	Present at rest during day and night.
Exacerbating factors	- Exercising the muscle ▪ Claudication distance? ▪ How did this distance change over time?	- Movement and Pressure: pts sit in bed with knees bent and foot held - Elevation or supine position of the limb
Relieving factors	- Stopping the exercise and resting. - Some pts force themselves to continue walking to fade out the pain. - Walking slowly may prevent it. ▪ Time taken for pain to go away? ▪ Can you walk the same distance after?	- By putting the leg below the level of the heart: pts usually hang legs over the side of the bed or sleep sitting on a chair - Strong analgesic drugs.
Progression	- The Claudication distance gradually shortens over a few months before the patient becomes static. - May increase as the collateral circulation develops.	- Gets steadily worse
Associated with	- Impotence: occlusion at aortic bifurcation (Leriche's syndrome) - Numbness and Parasthesia in the skin of the foot (blood shunted from skin to muscle) - Symptoms of Arterial Insufficiency	- Symptoms of Arterial Insufficiency
Severity	Usually forces the pt to stop walking	Very severe, prevents the patient from sleeping
Cause	Inadequate blood flow to the muscles	Critical Ischemia

❖ *Gangrene*

- Take a short history of the gangrene (mentioned later on)
- Location of the tissue loss
- History of local trauma
- Evidence of infection (fevers, purulent drainage, local pain)
- How long it has been present

❖ *Ulceration*

- Take a short history of the ulcer (mentioned later on)

- ***Associated Symptoms***

- Ask about the Symptoms of Acute Ischemia (could occur due to an acute arterial thrombosis in pts that previously experienced symptoms of chronic ischemia)
  - **Pain**: Usually very severe and of sudden onset
  - **Parasthesia**: Develops over a few hours
  - **Paralysis**
  - **Pallor**
  - Perishingly **Cold** to touch
- Cardiopulmonary Symptoms:
  - Chest Pain, weakness or paresthesia in the UL?
  - Dyspnea
  - Palpitation
  - Syncope
  - Edema
- Neurological assessment:
  - Episodes of dizziness or blurred vision
- Renal assessment
  - Hx of chronic renal insufficiency

- ***Risk Factors***

  - Obesity: Ask about weight and height
  - Smoking: Calculate pack years
  - Alcohol
  - HTN
  - Diabetes: details (duration, control, micro or macro-vascular disease, foot ulcers, sensations)
  - Hyperlipidemia
  - Bleeding diathesis
  - Hx of traumatic arterial disruption
  - Previous MI, angina, or arrhythmias
  - Previous arterial disease
  - Previous DVT or PE
  - Previous Stroke
  - Family Hx of atherosclerosis and the cause of death of parents or siblings + age.

- ***Medications***
- ***How does this condition affect your life?***

Peripheral Arterial Disease – Physical Examination

- Always Remember: Introduce yourself, explain the exam briefly and ask for permission. Ensure privacy, warmth and good lighting. Wash your hands before you start.
- Exposure: Lower Limbs must be exposed, usually from the knees down. Always remember to compare!

❖ *General Observation:*

- Comfortable at rest or distressed? Leg: Amputations, Scars, Normal Sweating? (neuropathy).

❖ *Inspection:*

Inspect all of the limb and the pressure areas: the heel, the ball of the foot, the malleoli, the head of the 5th metatarsal, the tips of toes and in between them

- **Signs of Chronic Ischemia:**

- Thin, shiny skin, hair loss - Color: ▪ Pallor (sudden ischemia), ▪ Dark distally (chronic)	- Guttering of Veins: collapsed, found in severe ischemia - Muscle wasting (guttering between metatarsals)	- Amputations - Brittle nails - Ainhum: constriction in the base of the toes

- **Inspection of a gangrene:**
  - The extent
  - Line of demarcation:
    - There may be hyperemia and hyperesthesia just proximal to it followed by normal skin.
  - Type:
    - **Dry**: Dark discoloration with a shriveled, mummified appearance and a clear demarcation line
    - **Wet**: Black discoloration with edematous tissue and an unclear line of demarcation
- **Signs of Spread of gangrene:**
  - Blebs
  - **Skip areas** (areas of blackening in the proximal limb independent of the main area of gangrene)
  - **Ulcers**
- **Signs of Infection:** redness, edema, slough**. Check between the toes for a fungal infection.**
- **Pressure necrosis**: thick, purple-blue skin, blistering or ulceration and patches of gangrenous skin.
- **Ulcer Examination** (mentioned later on)

❖ *Palpation:*

- **Temperature**: allow skin to adjust to room temp first, move from the foot proximally, COMPARE.
- **Tenderness:** along the limbs and the course of the arteries
- **Gangrenous Area**:
  - Dry: greasy, cold skin, non-tender, hard, sensations are lost.
  - Wet Gangrene: turgid, edematous, no sensations, mild tenderness.
- **Over the site of edema**: Crepitus in gas gangrene
- **Feel all of the pulses**, COMPARE:
  - Feel the pulses of the UL, check for a radio-radial, radio-femoral delay.
  - Femoral: between the symphysis pubis and the ASIS
  - Popliteal: if felt easily indicates aneurysm
  - Post Tibial: 1/3rd the way along a line connecting the tip of the medial malleolus and the heel
  - Dorsalis Pedis: Cleft in between the first and second metatarsals
- **Capillary Refill**: Press on the tip of a nail or the pulp of a toe for 2 s. Record the time taken for the blanched area to turn pink. This gives a crude indication of the rate of blood flow and P within capillaries.

❖ *Auscultation:*

- Bruits: Along the course of all the major arteries: neck, abdomen, groin, thigh and over the adductor canal.
- Measure the BP in both arms.

❖ *Special Tests:*

- **Buerger's Test**

- Ask the patient to lie supine then elevate the limb to 90 degrees
- If there's marked pallor then the test is positive.
- The pallor appears within seconds-minutes depending on severity. In a normal circulation the leg remains pink.

- **Buerger's Angle**

- The angle to which the leg should be raised before becoming pale.
- If the Buerger's test is positive, elevate the limb gradually and note the angle at which pallor occurs.
- Elevation to 15-30 degrees for 30-60 s may cause pallor. If the angle is < 20, indicates severe ischemia.

- **Capillary Filling Time**

- Performed right after elevation
- Ask the patient to sit on the edge of the examination table and dangle the legs down
- Note the time taken by the affected limb to become pink-purple (due to filling with deoxygenated blood).
- This may be delayed to 15-30 s in severe ischemia.
- Let the patient sit for 2-3 mins, if the skin becomes purple-ish or cyanotic, this indicates ischemia

❖ *Doppler Flow Detector:*

- Placed over the surface of the vessel after adding a coupling jell to the skin.
- The dorsalis pedis, post tibial or peroneal artery are commonly used, detected by sound changes generated by the pulsatile blood flow.
- A sphygmomanometer cuff is placed around the ankle and is deflated until the noise created by the flow ceases. The pressure at which this occurs is the systolic pressure.
- The Ankle Brachial Index: is the ratio between this pressure and the one measured in the brachial artery, it's normally 1.
  - If it's > 1: calcified and stiff vessels (Diabetic)
  - If it's < 1: occlusive disease upstream

❖ *Focal Examination*

- Lymph Nodes: Inguinal, Axillary if UL
- Joint Movements in the gangrenous area, usually lost
- Sensory and motor functions
- Abdomen

❖ *Upper Limb Examination:*

- **Raynaud's**: dip hands in cold water and note blanching (paleness), take them out, they become swollen and cyanosed, after sometime: they become red and engorged.
- **Thoracic Outlet Syndrome Tests:**
- **Adson's test**: feel the radial pulse of the affected side while the patient sits on a stool, ask the patient to turn their head towards the affected side and take a deep breath. If the pulse becomes feeble or is obliterated then the test is positive.
- **Elevated arms stress test**: ask the patient to abduct the shoulders to 90 degrees with maximum external rotation and flexion of the elbows (raising arms above the head). Ask them to open and close their fist for 3 minutes and note any paresthesia, pain etc. Fatigue is normal.
- **Allen's Test:** ask the patient to clench their fist tightly. Compress both the ulnar and radial arteries of one wrist and ask the patient to open and close their fist until blanching occurs. Ask them to open their fist, release pressure off of the ulnar artery only and note the time taken to regain the normal color. Repeat the test while releasing pressure off of the radial artery only.

Peripheral Venous Disease – History Taking

- *Patient Profile*
- *Chief Complaint:* usually Lower Limb Pain (calf tenderness), redness and swelling.
- *History of Present Illness:*

Lower Limb Pain	
○ Site: Unilateral or Bilateral ○ Onset and Duration: DVT usually sudden - DDx: Cellulitis (fever, redness, hot, tender, shiny skin) ○ Character ○ Radiation ○ What do you think caused this? ○ Recent trauma?	○ Timing ○ Severity: Does it make walking difficult? ○ Progression of the pain and associated symptoms over time ○ Alleviating or Exacerbating Factors: Prolonged standing or lying down? ○ Previous Hx of same symptoms
Associated With	
• Fever • Erythema: is it well demarcated? • Color Changes: - Pale - Cyanosed - Hyperpigmentation • Edema: - Extent - Progression - Changes related to the time of day?	• Itching • Ulceration or Eczema • A Venous Ulcer (take a short history) • Heaviness • Varicosities • **Symptoms of PE:** - SOB - Pleuritic Chest Pain: increases on coughing or breathing in - Hemoptysis

- *Previous History and Risk Factors*

• **Immobility:** - Bed rest or recent operation - Recent long flight - Pelvic or LL fractures • **Family History:** - Thrombosis - Cancer - Deficiency • **Medications:** - OCPs • **Social:** - Smoking, Obesity (BMI), Prolonged standing	• **Medical and Surgical History:** - Heart Failure (stasis): SOB, PND, Chest Pain - Previous DVT or varicosities - Polycythmia Vera, Factor V leiden thrombophilia - Antithrombin III, Protein S or Protein C deficiency - APS: anti phospholipid syndrome - Connective Tissue Disease - Recent central venous catheter - HTN - DM - Liver or Renal disease • **Gynecological History:** - Pregnancy - Multiple miscarriages

Peripheral Venous Disease – Physical Exam

- Always Remember: Introduce yourself, explain the exam briefly and ask for permission. Ensure privacy, warmth and good lighting. Wash your hands before you start.
- Exposure: Ideally up to the groin but to preserve dignity up to the knees or thighs. Always remember to inspect bilaterally, from all sides and compare!

❖ *General Observation:*

- Pain or distress
- Hands: temperature; Tar stains (nicotine)
- Obvious Risk Factors: pregnancy, cast, obesity, immobility
- Shortness of breath (PE)
- Obvious amputations
- Vital Signs: radio-radial/femoral delay

❖ *Inspection:*

While the patient is Standing
Inspect for varicose veins

- **Site**
- **Extent**
- **Anatomy or Tract:**
  - Along thecourse of the Long Saphenous Vein:
- From the medial malleolus upward, anteromedial aspect of the leg, saphenous opening
  - Along the course of the Short Saphenous Vein:
- Posteriorly along the calf into the popliteal fossa
  - Stray Varicosities
- **Shape and Color**:
- Dilated and tortuous
- **Blowout**:
- A bulge in the vein. If found over the SFJ: Saphena Varix

❖ *Percussion:*

- Place the fingers of one hand on the most prominent point of the varicosity and the fingers of the other hand on the upper limit of this varicosity.
- Flick or tap the lower limit and feel for a transmission of this impulse on the upper limit.
- If the impulse if felt then the test is positive and the incompetent valve lies between these two points.

While the patient is Sitting or Supine
Inspect for signs of venous insufficiency:

- **Ankle Flare:**
- Diffuse, soft swelling with small dilated venules between the medial malleolus and the heel
- **Skin Changes:**
  - Hyperpigmentation: hemosiderin deposition
  - Dermatitis: eczematous skin
  - Lipodermatosclerosis: hard, endurated swelling (inverted champagne bottle sign) due to inflammation of the SC fat tissue
  - Color Changes:
    - Cyanosed and Congested: **Phlegmasia Cerulea Dolens**. (DVT blocks almost all of the venous outflow, severe, a precursor of venous gangrene)
    - Pale, swollen and large: **Phlegmasia Alba Dolens** (severe edema leading to ischemia)
    - Redness: **Superficial Thrombophlebitis**
- **Edema**
- **Varicose Ulcer**: over the gaiter area, commonly seen after DVT. Always superficial, painless, irregular ragged edges and unhealthy granulation tissue. Never penetrates into SCT.
- **Ankle Movement** over the site of the ulcer if present: Talipus Equinus Deformity

❖ *Palpation:*

1. **Temperature:**
- Compare bilaterally.
- Over the varicosities and along the length of the vein
2. **Edema:**
- Measure the circumference from the maximally dilated area of the leg in a line connecting the Tibial Tuberosity and the medial malleoulus, then measure the distance from that area to the TT. Measure the circumference of the other leg at the same distance from the TT. Normally the difference is < 3 cm.
3. **Tenderness:**
- Over dilated veins and varicosities
- Press on calves and check for tenderness: GENTLY
- Deep Fascia: for dilated perforator veins
4. **Cough Impulse**:
- A bulge or a thrill over the SFJ: A Saphena Varix
- Supine patient: Raise the leg to 60° and ask him to cough, there may be a retrograde venous pressure wave that rises on coughing then falls. Uncomplicated varicosities collapse on raising the leg.

❖ *Special Tests:*

Varicose Veins	Patency of Deep Veins and DVT
• **Trendeleburg Test:** - Ask the patient to lie flat and elevate the legs to 30°. Empty the superficial veins by milking them towards the groin. - Apply pressure on the SFJ by either: o Pressing with your thumb over it o Using a high thigh tourniquet - Ask the patient to stand while maintaining the pressure and observe the vein for 15-30 s with maintained pressure: ➢ If the vein remains empty: Pure **saphenofemoral incompetence** ➢ If the vein is filled slowly from below: There is perforator incompetence **below** the level of the saphenofemoral junction - Remove the pressure on the SFJ: ➢ If there is rapid filling from above downwards: **Saphenofemoral incompetence** ➢ If there is NO retrograde filling: The saphenofemoral valve is **competent** - Presenting the results e.g. The test was –ve, +ve: -ve with maintained pressure and +ve on release of pressure, indicating pure saphenofemoral incompetence. • **Multiple Tourniquet Test:** - Repeat the same test with tying 3 tourniquets around the leg, hence dividing it into 4 parts: the saphenofemoral valve, the adductor canal, below the knee perforators and above the ankle perforators. - The pressure should only be tight enough to occlude the superficial veins - Watch for the appearance of any varicosities in any of the segments, indicating incompetence of the corresponding valve.	• **Homan's Sign:** - Ask the patient to lie supine and support their thigh with one hand and their foot with the other. Slightly flex the knee. - Firmly and abruptly, dorsiflex the ankles ➢ If this results in deep pain in the calves or involuntary knee flexion, then the test is +ve. • **(Modified) Perthe's Test:** - While the patient is supine, elevate the limbs and empty the veins, place a tourniquet over the thigh. - Ask the patient to walk for a few minutes ➢ A positive test: If the deep veins are blocked: varicosities will become turgid and the patient will experience throbbing pain in the calf - This is a contraindication for ligation and stripping of the veins. ➢ A negative test: if the varicosities remain collapsed and there is no pain. • **An Active DVT is recognized through:** - Tender calf swelling - Tenderness along the course of the veins - Homan's Sign - Tenderness in the calf muscles: Moses' Sign Note that the last two (Homan's and Moses' sign) must be performed very gently as they may cause the thrombus to be dislodged. If there is tenderness over the posterior tibial then don't test for calf tenderness by squeezing.

❖ *Auscultation*:
- Over any AV fistula or dilated veins.

❖ *Ask to Examine:*
- The other leg
- Inguinal LN
- Pulses of the LL
- Respiratory System: For signs of PE
- Abdomen for dilated veins or lumps
- Scrotum for varicocele and genitalia: PR, bimanual exams
- Protoscopy for hemorrhoids

❖ *Venous Duplex Ultrasound*

Ulcer – Physical Examination

❖ *Inspection*

1. **Site:**

Venous	Arterial (Ischemic)	Neuro (Trophic)	Others
Medial aspect of the lower 1/3rd of the leg	Dorsum of the foot and toes	Weight-bearing areas (heels, sacrum…etc)	Tuberculous: neck Rodent: above a line joining angle of mouth and ear lobule

2. **Size, Shape and Number** (single or multiple)

3. **Margin:** a line demarcating the ulcer from intact skin

- Healing Margin: the innermost area is composed of red granulation tissue, centrally there is a bluish line of growing squamous epithelium, and the outermost layer is a white zone of newly cornified epithelium.
- Inflamed Margin: Spreading, red, inflamed, irregular margin with inflamed surrounding skin.
- Fibrosed Margin: Chronic, non-healing ulcers with marked fibrosis: white, thickened skin margins.

4. **Edge:** the mode of union between the floor and the margin of the ulcer (it is therefore 3D)

Sloping	Punched Out	Undermined	Everted	Raised
○ Healing ○ Venous The healthy granulation tissue over the floor area is slightly below the skin surface so the skin slopes down to it	○ Trophic ○ Ischemic The tissue destruction is almost equal from the skin to the bone and therefore it is deep with a vertical edge	○ Tuberculous Tissue destruction is greater in the SC plane than in the skin, the skin therefore overhangs at the edge (pin under the skin)	○ Malignant (SCC) Malignant tissue grows very fast and overhangs the skin margin, the ulcer itself is raised above the skin level.	○ Rodent (BCC) Slightly raised but not everted, usually in low-grade malignancies.

5. **Floor:** the exposed surface of the ulcer, comment on:

Granulation Tissue			Slough	Discharge	Visible Structures
Healthy Ulcer	Pale, Flat	Hypertrophic	Areas of necrotic soft tissue which has not yet separated from normal tissues (infected ulcer) Small areas of granulation tissue may be seen	- Color - Amount - Smell - Type and texture	- Bones - Muscles - Tendons
Small amount of serous discharge No slough Blood drops on touch	Chronic, non-healing ulcer Doesn't bleed easily on touch	Rises above skin level with excessive serosanguineous discharge (large ulcers, epitheliaztion not complete on time)			

6. **Surrounding Skin (Specific to Cause)**

- Cellulitis: redness, shiny, erythema
- Venous: Hyperpigmentation, eczema, lipodermatosclerosis
- Ischemia: Shiny, thin, hair loss
- Diabetic: ischemic signs, necrobiosisdibeticorum, hyperkeratosis
- Tuberculous: multiple Scars with puckering in the skin of the neck
- Marjolin's: within a large previous scar or burn

7. **Nails:** onychomycosis, trophic or thickened, onychogryphosis, ingrown, or brittle.
8. **Amputations, Deformities or Charcot Foot:**

- **Minor:**
  - Claw Toe, Hammer Toe
  - Hallux Valgus, Overriding Toe
- **Major:**
  - Charcot: Hot, red, joint effusion, bone resorption, loss of sensation
  - Flat foot (rocker bottom deformity)

❖ *Palpation*

- **Temperature:** remember to compare.
- **Tenderness**: over the surrounding area (hotness and tenderness indicate inflammation)
- **Edge**: examine it with a gloved hand
  - Soft: healing
  - Firm: non-healing (fibrotic)
  - Hard: malignancy
- **Floor:**
  - Granulation Tissue**:** note if it bleeds on touch, if it's healthy: pinpoint hemorrhagic spots. A malignant ulcer may bleed profusely (epithelioma).
  - Slough**:** Is it attached loosely or firmly?
- **Base:**

- The tissue which the ulcer rests on, determine if it's: muscle, tedndon or fascia. If it's a small ulcer, pinch it between your fingers. If it's a large one: palpate from over the floor.
- Comment on its consistency: a chronic ulcer is firm due to fibrosis, whereas a malignant ulcer is hard.

- **Fixity:**

- Attempt to move it from side to side in 2 different directions. If it's over a muscle mass, ask the patient to contract the muscle, if it becomes fixed then it's attached to the muscle.

❖ *Focal Examination*

- Examine the regional lymph nodes
- Examine the following, depending on the type of ulcer:
- **Arteries**: Pulses, Buerger's test, Doppler, Capillary refill
- **Veins:** Varicosities, DVT
- **Nerves**: Sensation, Deformities (diabetic)
- Examine the movement of the neighbouring joints

❖ *Systemic*

- CVS: healing is delayed in HF
- RS: TB or secondary metastasis
- Abdomen

History of An Ulcer

- **Patient Profile; Chief Complaint:** ulcer since _____. If a long time ago, why did you come now?
- **History of Present Illness:**

Symptoms of the lump itself:	Associated With	Medical, Surgical, Family, Social
○ Site: Rt or Lt? ○ Size, Shape, Depth and their changes ○ Discovery ○ Progression: First symptom, current symptoms, changes ○ Multiple or single ○ Possible causes: - Trauma, recent thrombosis, catheter ○ Previous Hx and recurrence	○ Pain: over the ulcer itself ○ Pain in the calf muscles (Claudication, rest pain or DVT) ○ Eczema, ulceration or itching ○ Discharge: details ○ Varicose Veins ○ Joint Problems ○ Swelling of the leg ○ Bleeding ○ Parasthesia or abnormal sensations ○ Anhydrosis (DM)	- Chronic Diseases: Ask about medications, controlled? • DM • HTN • HF • Cancer • Thrombophilia • Hypercholesteremia - Previous Hx: • MI or DVT/PE - Family Hx: Heart disease, DM - Social Hx: Smoking, immobility - Medications

- **Specific Questions:**

- **Arterial:** Claudication, rest pain, chest pain, 6Ps, bleeding, raynaud's, compartment syndrome symptoms (severe pain unrelieved by opioids and increases by active pressure or movement)
- **Venous:** mentioned as Hx of venous insufficiency
- **Diabetic:** joint deformities, loss or change of sensation, trauma Hx, anhydrosis, immune deficiency

Ulcer Examination

- Definition: Discontinuity of epithelial surface so could be skin, gastric, …. Etc.
- Types: 1- arterial, 2- venous, 3- diabetic, 4- traumatic, 5- neuropathic (trophic), 6- malignant, 7- inflammatory.

History

History for any ulcer

1. Site
2. Duration (when the ulcer first noticed)
3. Symptoms of the ulcer (pain, bleeding, discharge, interfere with movement, bad smell,..)
4. Progression (how ulcer changes in size, shape, depth, and pain with time)
5. Multiplicity (if patient had any other ulcers)
6. Start asking about the specific causes of ulcer (in the following pages)
7. Previous history
8. Drug
9. Family

Examination

Exposure: don't forget **BOTH BOTH** legs form the knee till the big toe.

You have to describe the following for any ulcer

1. Site (in anatomical terms)
2. Size (length, width depth)
3. Shape (regular or irregular)
4. Margin (surrounding skin "red, swelling, black, hyperemia …".)
5. Edge (everted, sloping, undermined, punched out, rolled …)
6. Floor (what you see: granulation, necrotic, exposed structure like bone tendon .., blood,…)
7. Base (what you feel by palpation)
8. Discharge (type: bloody or purulent or pus, color, smell, amount ….)
9. Mobility of the affected area
10. Regional lymph nodes
11. Pulses (posterior tibial, anterior tibial, dorsalis pedis) and sensation (Temperature, vibration, touch, tenderness)
12. **Don't forget to examine the hidden areas (the heel, between the toes …..) and BILATERALLY**

    More specified:

    Inspection will contain: site, size, shape, margin, edge, floor, discharge, Mobility(if you asked the patient to move his extremities)

    Palpation will contain: Base, Regional lymph node, Pulses, and sensation.

Ulcer Examination

Ischemic (Arterial) ulcer :

- **Discontinuity** of the epithelial surface of the skin due to inadequate blood supply.
- Ischemia will start as asymptomatic then claudication then night/rest pain then end with ulceration so history must contain question related to these.
- Ischaemic signs include **absence of hair, thin skin and brittle nails**.The presence of foot pulses doesnot completely exclude significant lower limb PAD butthey are almost always diminished or absent. If thehistory is convincing but pulses are felt, ask the patientto walk until the claudication pain stops him and thenrecheck the pulses; if they have disappeared then PADis very likely.
- May be acute or chronic if acute don't forget the **6 P's** (**P**ulseless, **P**allor, **P**erishing cold, **P**aresthesia, **P**aralysis, **P**ain on squeezing muscle)
- Causes :

The causes of ischaemic ulceration
Large-artery obliteration
Atherosclerosis
Embolism
Small-artery obliteration
Scleroderma
Buerger's disease
Embolism
Diabetes
Physical agents
Pressure necrosis
Radiation
Trauma
Electric burns

History: Take the history like any ulcer (first page) , then ask about these things which are specifc for ischemic ulcers

1. Elderly.
2. Patients mostly have symptoms of CAD or CVD (chest pain, SOB, sweating, ….)
3. History may contain previous precipitating minor trauma.
4. The patient may give a history of prior claudication or symptoms of generalized vascular disease such as chest pain.
5. Ask about the 6 P's
6. Rest pain (Rest pain is a term used to describe the continuous,unremitting pain caused by severe ischemia. Incontrast to the pain of intermittent claudication,which only appears during exercise, this pain is present at rest throughout the day and the night.)
7. Very painful (except if there is neurological abnormality)
8. **Don't bleed**, have serous exudate discharge that may become purulent.
9. **Ask about compartment syndrome (**The keysymptom is severe pain often unrelieved by opioids andexacerbated by active or passive movement. Peripheralpulses are usually present),**Raynaud's phenomena.**

Ulcer Examination

Examination : Like any ulcer (first page)

1. ***Site:***at the tips of thetoes or fingers and over the pressure points.
2. ***Size:***vary in
3. ***Shape:***elliptical.
4. ***Tenderness***The ulcer and the surrounding tissuesare often very tender. Removing a dressing can causeexacerbation of the pain that lasts for several hours.
5. ***Temperature***The surrounding tissues are usuallycold because they are ischaemic.Warm; healthy tissuesuggests another cause for the ulceration.
6. ***Edge***eitherpunched out, if there is no attempt at healing by thesurrounding tissues, or sloping, if the ulcer is beginningto heal). The skin at theedge of the ulcer is usually a blue-grey colour.
7. ***Base***The base of the ulcer usually contains greyyellowslough covering flat, pale, granulation tissue.
8. ***Depth***Ischaemic ulcers are often very deep. Theymay penetrate down to and through deep fascia,tendon, bone and even an underlying joint.
9. ***Discharge***This may be clear fluid, serum or pus.
10. ***Relations***The base may be stuck to, or be part of, anyunderlying structure. It is quite common to see barebone, ligaments and tendons exposed in the base of an ischaemic ulcer.
11. ***Lymph drainage***Infection in an ischaemic ulcer usuallyremains confined to the ulcer, so that the locallymph glands are not normally enlarged.
12. ***State of the local tissues***Surrounding tissues mayshow signs of ischaemia – pallor, coldness and atrophy.
13. ***Distal pulses***These are invariably absent.

but also search for the following:

1. Ischaemic signs include **absence of hair, thin skin and brittle nails.**
2. Pulses up to femoral
3. Burger test
4. Ankel to brachial pressure index.

Investigation: first ask for Duplex Doppler, then ……

Ulcer Examination

Venous ulcer:

- Occur on top of chronic venous insufficiency, other names are chronic venous hypertension, or post-phlepitic syndrome.
- Many patients with venous ulcers do not havevisible varicose veins. Approximately 50 per cent ofall venous ulcers are associated with primary varicoseveins. The remainders are the result of post thrombotic deep vein damage
- Characterized by increased venous pressure of the legs due to destruction of the valves of the vein following deep vein thrombosis, so the **leg is swollen due to venous edema, with induration, and hyperpigmentation** around the ankle varicosity.
- Mostly **situated in the lower third of the leg mostly medial aspect above the medial malleolus**, it is shallow; pink (granulation tissue) or yellow/green (slough); has an irregular margin; and is alwaysassociated with other skin changes of chronic venousinsufficiency (varicose eczema, lipodermatosclerosis).
- **Remember that squamous cell carcinoma canarise in a chronic venous ulcer**, particularly in apatient known to have a long-standing venous ulcerwhich has enlarged, become painful and malodorous,and especially if the edge of the ulcer is found to beraised or thickened. Malignant change is also suggestedby finding enlarged inguinal lymph glands.Biopsy is indicated should any of these changes appear.Malignant change in a chronic venous ulcer isknown as a **Marjolin's ulcer**
- ***The lower limbs***the whole of both lower limbs must beexamined for the presence of varicose veins, competentand incompetent communicating veins and skinchanges. Most patients have bilateraldisease and the majority of patients with venousulcers have incompetent communicating veins.It is also important to assess the arterial circulationand the nerves, to exclude an ischemic or neuropathiccause of the ulcer.

History : like any ulcer (first page) and look for

1. A majority of venous ulcers are caused by deep and communicating vein damage, so there is often a history of venous thrombosis during an illness or pregnancy. The patient may have had previous episodes of ulceration.

Examination:

1. ***Site***are commonly found around thegaiter area of the lower leg and usually begin on themedial aspect.
2. ***Shape*** *and size* Venous ulcers can be of any shape andany size.
3. ***Edge***The edge is gently sloping.
4. ***Base*** may be covered with yellow slough butbecomes covered with pink granulation tissue whenthe ulcer is healing.
5. ***Depth***usually shallow and flat.
6. ***Discharge***The discharge is usually seropurulent.
7. ***Surrounding tissues***The surrounding tissues usuallyshow the signs of chronic venous hypertension –**induration, inflammation, pigmentation and tenderness**,i.e. lipodermatosclerosis. There may be **oldwhite scars** (atrophieblanche) from previous ulcerationand many dilated intradermal and subcutaneousveins. **Movements of the ankle joint may be limitedby scar tissue**, which may cause an equinus deformityof the joint. Occasionally **true cellulitis** occurs.
8. ***Local lymph nodes***Ulcers are usually colonized ratherthan infected, so the inguinal lymph nodes should**not be enlarged or tender.**

Ulcer Examination

6.41 Clinical features of venous and arterial ulceration

Clinical feature	Venous ulceration	Arterial ulceration
Age	Develops at age 40–45 but may not present for years; multiple recurrences common	First presents in over-60s
Sex	More common in women	More common in men
Past medical history	Deep vein thrombosis (DVT) or suggestive of occult DVT, i.e. leg swelling after childbirth, hip/knee replacement or long bone fracture	Peripheral arterial disease, cardio- and cerebrovascular disease
Risk factors	Thrombophilia, family history, previous DVT	Smoking, diabetes, hypercholesterolaemia and hypertension
Pain	One-third have pain (not usually severe) that improves with elevating the leg	Severe pain, except in diabetics with neuropathy; improves on dependency
Site	Gaiter areas; usually medial to long saphenous vein; 20% are lateral to short saphenous vein	Pressure areas (malleoli, heel, fifth metatarsal base, metatarsal heads and toes)
Margin	Irregular, often with neoepithelium (appears whiter than mature skin)	Regular, indolent, 'punched out'
Base	Often pink and granulating under green slough	Sloughy (green) or necrotic (black), with no granulation
Surrounding skin	Lipodermatosclerosis always present	No venous skin changes
Veins	Full and usually varicose	Empty with 'guttering' on elevation
Swelling (oedema)	Usually present	Absent
Temperature	Warm	Cold
Pulses	Present, but may be difficult to feel	Absent

Varicose Veins

-Definition: dilated, tortuous veins. They are most commonly found in the superficial veins of the lower limb, may be part of chronic venous insufficiency syndrome.

-History: (History will be discussed briefly as it is unlikely to be asked on in the OSCE, but it is useful to read it for theory exam, Physical exam then will be detailed)
- Take a conventional history with focus on these specific aspects.

◯ First: Causes and risk factors:
Age (more in older age), sex (female:male = 10:1), family history, PMH.
Vericose veins are mostly developmental (primary - of unknown cause). Secondary causes to ask about are connective tissue diseases, DVT (ask about factors that cause thrombosis in general e.g. theombophilia, kidney and liver disease), vein obstruction (mass or compression), A-V fistula,pregnancy, prolonged sitting or standing, obesity, and constrictive clothing.

◯ Second: Symptoms:
Know the exact complaint of the patient. Disfigurement is the most common (cosmetic only). Ask also about pain (crampy, especially at night), discoloration, heaviness, itching, swelling.

◯ Third: Complications' symptoms:
Superficial thrombophlebitis (cord like structure along the vein course ±fever), eczema and pigmentation (this results from extravasation of RBC's from the high-pressure veins to the subcutaneous tissue then hemolysis), lipodermatosclerosis (replacement of skin and SC fat with fibrous tissue)

-Physical examination:

◯ Don't forget the basics (environment and permission, hygiene and exposure)
◯ Expose the whole lower limb properly along with the groin, bilaterally to compare.

-Inspection:
◯ From distal to proximal, front to back, the patient ERECT position (lying down will empty the varices)
◯ Look for large visible veins and record findings
◯ Skin changes: pigmentation, lipodermatosclerosis, ulcers, induration, inflammation, eczema, ankle swelling and edema
◯ Findings of venous insufficiency are most likely to be in the medial lower third of the leg (gutter area) where the perforators drain (Cockett group)
◯ Look for saphena varix in the groin area (bluish groin upon standing)

-Palpation:
◯ Asses texture of skin and SC tissue
◯ Tenderness (lipodermatosclerosis is tender)
◯ Pitting edema test
◯ Palpate for communicating veins in behind medial border of tibia
◯ Palpate the SFJ (saphenofemoral junction) for cough impulse and thrill (SFJ is 2 cm lateral 2 cm down pubic tubercle, or you can follow femoral pulse until it disappears)

-Percussion: test if percussion is transmitted along the course of the veins (up and down)
-Auscultation: over varicosities
-Tourniquet (Trendelenberg) test and Doppler test : most important and significant:
◯ After inspecting the varicosities while patient erect, ask the patient to lay down and raise his leg on your shoulder to empty them, use milking if needed
◯ Put the tourniquet slightly BELOW the level of SFJ
◯ Ask the patient to stand up quickly and watch for reflux (varicosities re-appearance)
◯ Release the tourniquet and watch for reflux
◯ If there was reflux upon standing then the perforators are incompetent, if there was reflux upon tourniquet release then the SFJ is incompetent
◯ Locate the exact location of the pathology by double tourniquet test (mention this)
◯ Use portable Doppler ultrasound to demonstrate the reflux of blood through the incompetent junction (biphasic signal indicates reflux i.e. incompetent valve, monophasic signal is normal.

-Perthe's test: This is used to assess the patency of deep vein system
While the patient is standing and varicosities are visible, ask him to walk (activate the muscle pump), this should increase the flow in the deep vein system so the blood flows from the superficial vein system to the deep system (Bernoli law) and the varicosities shrink. If they are still large, this indicated deep vein system pathology, and means that the superficial system is highly contributing to venous drainage and should not be operated to excise varicosities.
-General examination: abdomen inspection may reveal dilated collaterals. Rectal, testicular and vaginal examination should be done to exclude masses causing secondary varicose veins of the lower limb.

Diabetic foot examination

Exposure : your examination should include the lower third of both legs.

Inspect :

- Skin : color , texture (presence of blister , hyperkeratosis …) , dryness , hair loss , shiny skin , swelling , diabetic dermopathy (necrobiosislipoidicadiabeticorum) , presence of ulcers or gangrene .
- Heel: by elevating the heel upward and looking carefully if there are any features of ulceration or hyperkeratosis .
- Nail : comment if they are healthy , trophic , thickened (sign of ischemia) , onychogryphosis (hypertrophy of nail incurved claw-like deformity) , onychomycosis (fungal infection of nail bed) .
- Web spaces: it's important to show the Dr that you're opening between the toes and inspecting carefully.
- Joint deformity :
  Minor : clawed toe , hammer toe , hallux valgus , overriding toe.
  Major :charcot joint (hotness , painless , red corn) .
  If chronic : destruction of foot arches (transverse arch) , rocker bottom deformity .
- Swelling .
- If there are any ulcers, comment on:
  # Site , shape , size , margin (the skin around the ulcer whether it's **healthy (normal skin) or ** unhealthy (cyanosed , gangrenous , hyperemic , hyperkeratosis)) .
  # edge : sloping , punched out , undermined , rolled.
  # floor : what you see (necrotic tissue , granulation tissue , discharge (serous , sanguinous , serosanguinous or purulent) .
  # base :what you palpate (bone, tendon …) .
  # bad smell is an indication of infection .

Palpation :

4 things

1. Temperature .
2. Vascular system : pulses (dorsalispedis against navicular bone) ,(posterior tibial felt against calcanum) , popliteal artery .
3. Neurological examination : sensation , vibration , proprioception .
4. Lymph nodes.
   Some picture :

** necrobiosislipoidicadiabeticorum.

** onychogryphosis .

** : clawed toe .

** hummer toe .

** hallux valgus .

** overriding toe .

** Charcot joint .

Pediatrics History

Concern on the following in the history of any pediatric age group (1 hour-15 years):

- Age in days, weeks, months
- Sex
- Current illness

What to ask about the current illness:

- When and how did it startA
- Was the child well beforeA
- Have there been any previous episodes of similar illnessA
- How did it developA
- What aggravates or relieves the symptom(s)A
- Any contact with similar illness in others/siblings or infectious outbreaksA
- Any recent overseas travelA
- How has the illness affected the familyA
- Have the symptoms kept the child from attending nursery/schoolA

In Infants:

- Pattern of feeding, bowel movements, and number and wetness of nappies
- Sleeping/waking cycle, alertness and activity
- Weight loss or gainA

Past history

Peri-conceptual history

- Was there any parental illness around time of conception that may be relevantA
- Was child conceived naturally or by assisted reproductionA
- If relevant, establish whether child is adopted (or in foster care) with due sensitivity to the child's awareness of the facts

History of pregnancy

Any factors relevant to foetal wellbeing should be recorded. For example:

- Antenatal infections (for example rubella)
- Rhesus incompatibility and haemolytic disease
- Exposure to prescribed, recreational drugs or over the counter medication
- Any maternal illness or problems in pregnancy

Peri-natal history

Factors pertinent to the child's health should be identified. For example:

- Gestation
- Duration of labour
- Mode of delivery
- Birth weight
- What if any resuscitation required
- Birth injury
- Congenital malformations identified

Relevant examples include:

- Jaundice
- Fits
- Febrile illnesses
- Bleeding disorders
- Feeding problems

Other relevant past history

This will include:

- Any subsequent illnesses, surgery, accidents or trauma
- Results and any concerns from screening tests at child health clinics or school
- Immunisation record
- Travel details

Developmental history

- Parental recall of major milestones will usually give important information (such as sitting up, crawling, walking, talking, toilet training, reading).
- It may be useful to ask how the child's progress and milestones compare with siblings and peers.
- Observations from other carers (school, nursery and extended family) may be helpful.

Current medication

- Prescribed medication
- OTC medication
- Recreational drug or solvent use- in teenagers such information is much more likely to be forthcoming if the patient is seen alone and reassured confidentiality will be maintained
- Complementary formulations

Drug intolerances, adverse drug reactions and allergies

It is important to enquire further about any allergy. Minor adverse reactions can often be labelled inappropriately as allergies.

Family history

- Relevant history. For example:
  - Previous miscarriages or stillbirths
  - Diabetes mellitus
  - Hypertension
  - Renal disease
  - Seizures
  - Jaundice
  - Congenital malformations
  - Infections such as tuberculosis
- Whether siblings and parents are all alive and well
- Consider conditions which may have a genetic component (such as ischaemic heart disease and cerebrovascular disease). Occasionally it is appropriate to address risk factors (such as familial hypercholesterolaemia) during childhood.

- Consanguinity occurs more commonly in some cultures and may be relevant to inherited disease (particularly autosomal recessive conditions).
- It can be useful to present findings by using a two-generation family tree.

Systems review

- Consider further information about other organ systems
- Ask questions pertinent to the diagnostic hypothesis and the age of the child
- Consider general issues particularly psychological factors which may have been overlooked.[4]

HYPERTROPHIC PYLORIC STENOSIS

History

- neonates and infants aged 1-10 weeks (mean, 5 wk), with a range of 5 days to 5 months.
- projectile vomiting (always nonbilious but may have brown discoloration or a coffee-ground appearance from associated gastritis, particularly if emesis has persisted for several days. The vomiting occurs within 30-60 minutes after feeding).
- The infant remains hungry and usually attempts to feed immediately after vomiting.
- Weight loss and evidence of dehydration (eg, decreased tearing and urinary output, with poor skin turgor) are present if vomiting is allowed to continue for more than a few days.
- The lungs should be examined carefully, looking for signs of aspiration pneumonia in any infant who presents with a history of vomiting.
- Family hx

IMPERFORATE ANUS

History

- frequency of stools
- passage of meconium
- straining with stooling.
- Family hx

Newborns with imperforate anus are usually identified upon the first physical examination. Malformations in newborns that are missed upon initial examination are often discovered within 24 hours when the newborn is observed to have distention and has failed to pass meconium and a more thorough examination is performed.

HIRSCHSPRUNG'S DISEASE

History

- not passed meconium within 48 hours of delivery. (Recall that 90% of babies pass their first meconium within 24 hours, and 99% within 48 hours).
- During the newborn period, infants affected with Hirschsprung disease may present with abdominal distention, failure of passage of meconium within the first 48 hours of life
- repeated vomiting.
- A family history of a similar condition is present in about 30% of cases.
- Unlike children experiencing functional constipation, children with Hirschsprung disease rarely experience soiling and overflow incontinence.

- Children with Hirschsprung disease may be malnourished. Poor nutrition results from the early satiety, abdominal discomfort, and distention associated with chronic constipation.
- Older infants and children typically present with chronic constipation. This constipation often is refractory to usual treatment protocols and may require daily enema therapy.
- Hirschsprung enterocolitis can be a fatal complication of Hirschsprung disease. Enterocolitis typically presents with abdominal pain, fever, foul-smelling and/or bloody diarrhea, as well as vomiting. If not recognized early, enterocolitis may progress to sepsis, transmural intestinal necrosis, and perforation.

UNDESCENDED TESTICLES (CRYPTORCHIDISIM)

Symptoms include:

A scrotum that appears undeveloped – this can be on one or both sides.

The testicle is not felt in its normal spot in the scrotum.

The diagnosis of an undescended testicle is made by examining the child. Important historical information regarding this condition is whether there has ever been evidence of a testicle in the scrotum, and whether there has ever been any sign of a hernia. Physical exam will usually reveal the testicle to be present somewhere in the groin, although occasionally no testicle will be detected. The scrotum is often somewhat underdeveloped on the affected side.

Done by: Mohammad Ghalib Riziq

"The End"

Intussusception

It is the invagination of one portion of the intestine into an adjacent segment.

It typically causes a strangulating bowel obstruction, which can progress to gangrene and perforation.

The history will give a clue to the diagnosis if you ask about the following important points:

1) **Age:** the peak incidence is between *5 and 10 months* of age.
2) **Chief complaints:**
   a) Abdominal pain.
   b) Vomiting.
3) **History of the present illnesses:**
   a) Abdominal pain (manifested by inconsolable crying, with drawing the legs up):
      - ***Onset:*** sudden (i.e. in a previously healthy infant).
      - ***Timing:*** - episodic (i.e. it is a colicky pain).
        - between episodes, the child appears well.
      - ***Associated symptom:*** the child **may** pass a bloody stool (a "redcurrant jelly" stool).
   b) Vomiting: a white vomit (milk), then a green vomit (bile).

➢ **Resources :**

1) Short practice of surgery, by Bailey and Love, 25th edition, 2008.
2) Introduction to the symptoms and signs of surgical disease, by Browse, 4th edition, 2005.
3) Oxford handbook of clinical medicine, 6th edition, 2004.

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