Dr. mohanad

Drains

Indications

Surgical drains are used in a wide variety of different types of surgery

the intention is to decompress or drain either fluid or air from the area of surgery

- To prevent the accumulation of fluid (blood, pus and infected fluids).
- To prevent accumulation of air (dead space).
- To characterize fluid (for example, early identification of anastomotic leakage)

*To remove existing abnormal collections of fluid, blood, pus, air*

*RX in any abscess is incision and drainage*

Types of drain

1 – open drain: gauze, corrugated

2 – close drain: tubes draining, sumb drain,

Complication of drains

1. Hemorrhage
2. Injury to the nearby structure
3. Obstruction
4. Infection
5. Slipping or dislodgment of the drain
6. Incisional hernia
7. Kinking

Risk of reoccurrence of DVT increase in

1. Def of c,s protein
2. Elderly
3. Obesity
4. Pelvic surgery
5. Fracture surgery
GA no C.I in case of operation in epileptic patient

GA contra indicated in upper respiratory tract infection

Q: what is the time requires for removing of stitches in post-operative patient

*Abdominal stitches removed after (7-10 days)*

*Head stitches (5 days)*

*Leg stitches (12 days)*

*Back stitches (14 days)*

Gall stones

Right hypochondriam pain, dyspepsia, flatulence, radiation to the back (biliary colic)

Types

1. **Cholesterol stones: the occurrence affected by bile salt**
2. **Pigmented (brown, black)**
3. **Mixed**

Bile stone and acid prevent stone formation, while cholesterol cause stone

Factors affecting the formation of gall stone

1. Obesity
2. Contraceptive pills
3. Defects motility in gall bladder
4. Abnormal function terminal ilium (previous surgery, disease)
5. Rapid weight loss
6. High caloric intake
7. Five - f – fairy, fat, female, forty and fertile

*Examination of the gall bladder*

1. General: jaundice, criteria chronic liver dis, ascites, anemia ............
2. Inspection: if their abdominal distension (ascites), asymmetrical abdominal right hypochondrium, dilated vein caput medusa, changing color of the skin, any previous scar and hernia.

3. Palpation: superficial and deep palpation for tenderness and superficial or colonic mass, not tender with mass in case CPD, tender abdomen with mass indicates gall bladder (cholecystitis), exception gall bladder mucocele palpable but not tender, murphy's sign press the hand just below the costal margin, approximately mid-clavicular (this is just above the gallbladder);

-Then instruct the patient to slowly breath in; A positive Murphy's sign is identified when the
patient stops breathing in due to pain -- this is caused by the move of the diaphragm pushing the inflamed gallbladder into the palpating hand. A negative Murphy's sign is identified when the patient comfortable breaths all the way in without any pain -- in this case, the diaphragm pushes the non-inflamed gallbladder into the palpating hand with nil changes in the patient’s level of comfort. A positive Murphy’s sign often indicates Cholycystitis, where as a negative Murphy's sign may suggest pyelonephritis, and ascending cholangitis.

4. Complication, cholangitis, pancreatitis due to alcohol, jaundice

5. Management – CBC, US, (MRCP and ERCP) in case of sever complication not always, admission, fluid, best analgesia (NSAID), or anti spasmotic buscopan, antibiotic like metronidazole or third generation cephalosporin and these are conservative treatment giving four weeks before the surgery to avoid surgical injury, in experience doctors they make the surgery directly even if their risk of iatrogenic injury

6. Complication of the surgery: bleeding, slipping clips duct (bile leak, biliary peritonitis) biliary fistula, iatrogenic injury to the surrounding organs, slipping stone from G. Bladder to the bile duct, post cholesystomy syndrome, bile leak

7. Bile leak: if major bile duct injury (800 – 1000cc/d) need reconstructive surgery if mild (400 -600 cc/day) need conservative treatment only

8. Another anomaly abscess, accessory cholecysto hepatic duct, atresia, choledocal cyst (idiopathic), tumor (malignancy), CPD
**Dr. Muslim**

**Hernia:** - abnormal protrusion of content through abnormal opening

**common sites**
- inguinal canal usually obliterated and weak
- Umbilicus mostly because ascites
- Femoral canal
- Incisional hernia after surgery

**Hernia consist of**
1. sac (fundus, body, neck of the sac)
2. covering
3. content

**Generally divided into**
1. reducible hernia
2. irreducible hernia (omentum, short segment of bowl)
3. obstructive hernia: - obstruction of the organs, movable content e.g. omentum, transvers colon, sigmoid, small bowl, fimbriae, and ovary
4. strangulated hernia
5. inflamed hernia
6. rector hernia: part of the wall will be herniated, not associated with obstruction except in advance stages may cause obstruction, diarrhea is common

* most common hernia inguinal and femoral hernia

Inguinal hernia divided to direct and indirect

**Indirect Inguinal Hernias**
This classification of hernia is the more common. It has a congenital origin – due to the failure of the processus vaginalis to regress.

The peritoneal sac enters the inguinal canal via the deep inguinal ring. The degree to which the sac herniates depends on the amount of processus vaginalis still present.

As the sac moves through the inguinal canal, it acquires the same three coverings as the contents of the canal.
**Direct Inguinal Hernias**
In contrast to the indirect hernia, this is acquired in origin, due to *weakening* in the abdominal musculature. The peritoneal sac originates from an area *medial* to the epigastric vessels and bulges into the inguinal canal via the posterior wall. *Inguinal hernia is more common in male than female*

**Grade of inguinal hernia**
1. Bubonocid hernia
2. Funicular hernia
3. Scrotal hernia (complete)

**Femoral hernia**: - Defect occurs below and medial to the femoral V.A.N and lateral to the pubic symphysis and it common in female than male.

During examination
1- the most important part of hernia ex, will be *cough impulse*

in inspection in any abdominal examination should ask about cough impulse in standing and supine position

common hernia – inguinal, femoral, and epigastric hernia -

- In standing position cough impulse positive in these D.D but they are rare like pulging varicose vein, psoas abscess (abscess behind psoas muscle)

2- the cough reducible or irreducible, in supine position if return to normal after coughing it is reducible if not irreducible

   - Positive cough impulse = inguinal hernia until prove other wise
   - Negative cough impulse = other types of hernia like obstructive hernia

Differentiation between direct, in direct and femoral hernia using three finger test - *Zieman's technique Index finger*- or *invagination test* (old way)

How to differentiate between inguinal hernia and scrotal hernia

- If return may be inguinal hernia if not may indicate scrotal hernia or hydrocele

And to differentiate between scrotal hernia (complete hernia) and hydrocele by three steps

- Reducibility
- Scrotal hernia cannot get above while hydrocele can get above it
- Translumination test
D.D of hernia
- lymph node
- pus, abscess
- lipoma

Complication of intestinal obstruction
1. Vomiting
2. Constipation
3. Distention
4. Colic pain
5. Dehydration

In men, the spermatic cord passes through the inguinal canal, to supply and drain the testes. In women, the round ligament of uterus traverses through the canal.

Boundaries of inguinal canal
The inguinal canal is made up of:
- Anterior and posterior walls
- Superficial and deep rings (openings)
- Roof and floor (or superior and inferior walls)

We shall go through each component in turn.
- The anterior wall is formed by the aponeurosis of the external oblique, and reinforced by the internal oblique muscle laterally.
- The posterior wall is formed by the transversalis fascia.
- The roof is formed by the transversalis fascia, internal oblique and transversus abdominis.
- The floor is formed by the inguinal ligament (a ‘rolled up’ portion of the external oblique aponeurosis) and thickened medially by the lacunar ligament.

The mid-inguinal point is halfway between the pubic symphysis and the anterior superior iliac spine. The femoral artery crosses into the lower limb at this anatomical landmark.

The midpoint of the inguinal ligament is exactly as the name suggests. The inguinal ligament runs from the pubic tubercle to the anterior superior iliac spine, so the midpoint is halfway between these structures. The opening to the inguinal canal is located just above this point.

The femoral canal is an anatomical compartment, located in the anterior thigh. It is the smallest and most medial part of the femoral sheath. It is approximately 1.3cm long.
Borders of femoral canal

The femoral canal is located in the anterior thigh, within the femoral triangle. It can be thought of as a rectangular shaped compartment. It has four borders and an opening:

- **Medial border** – Lacunar ligament.
- **Lateral border** – Femoral vein.
- **Anterior border** – Inguinal ligament.
- **Posterior border** – Pectineal ligament, superior ramus of the pubic bone, and the pectineus muscle

The opening to the femoral canal is located at its superior border, known as the **femoral ring**. The femoral ring is closed by a connective tissue layer – the **femoral septum**. This septum is pierced by the lymphatic vessels exiting the canal.

**Contents**

The femoral canal contains:

- Lymphatic vessels – draining the deep inguinal lymph nodes.
- Deep lymph node – the lacunar node.
- Empty space.
- Loose connective tissue.

The empty space allows **distension** of the adjacent femoral vein, so it can cope with increased venous return, or increased intra-abdominal pressure.

**Most common questions at the examination in the hospital**

1. Degree of hernia, or its type
2. Grading of inguinal hernia
3. Inguinal canal content, deep ring and superficial ring
4. Wall of inguinal canal
5. Femoral canal content
History

1. Name
2. Age
3. Sex
4. Religion: some relation to high consumption of alcohol
5. Occupational status:
6. Chief complain: what is the patient say
7. History of present illness: asking about pain its sites, radiation, severity, relieving factor, aggravating factor. ask also about the bowl motion, if there are fever and palpitation and others associated phenomena
8. Review of systems: - review of system – GIT, Respiratory, CVS, CNS, GUT, Musculoskeletal system
9. Past medical history: diabetic and hypertension
10. Past surgical history: if there are any previous surgery or previous hernia may reoccur
11. Drug history: allergy to specific drug such as penicillin and steroid
12. Social history: smoking and alcohol
13. Family history: hereditary disease, if their death in father or mother

Review of systems

1. GIT: - Constipation, vomiting
2. Respiratory: dyspnea, cough, sputum and wheezing
3. CVS: Edema cyanosis
4. CNS: headache, dizziness
5. GUT: dysuria, hematuria
6. Musculoskeletal system: joint pain

Anorectal disease

Rectum about [12 cm ] long while anal canal [ 4 cm] in neonate [2cm]

The rectum is retro and intraperitoneal organ The upper 1/3 of the anterior rectum is covered by peritoneum but the lower third of rectum devoid from the peritoneum

The rectum lined by columnar epithelium while the anal canal [ start from anorectal ring to the anal verge] consist from upper part columnar epithelium and lower part squamous epithelium

Blood supply: inferior mesenteric artery [ to the rectum and anal canal]
**Symptoms appears in patient with anorectal disease**

1. Pain
2. Bleeding
3. Anal discharge
4. Mass lesion
5. Pruritus anal

The patient may complain from pain during defecation, bleeding during defecation or pre defecation or after defecation.

Upper GIT bleeding [melena] [black color stool]: caused by DU, Gastric ulcer, gastric CA, lower esophageal varices and injury to the wall of small bowl.

Fresh blood [hematochezia] lower GIT bleeding like angioma, hemorrhoids

Anal discharge: caused by rectal CA, hemorrhoid, anal CA, adenoma, rectal polyp, infection

Mass lesion: in hemorrhoid, anal CA, rectal CA,

Pruritus anal: warms, hemorrhoid, mucous discharge

**PR examination consist of**

1. inspection
2. palpation
3. PR and
4. proctoscopy

**1-inspection** we look to the anal verge, natal cleft and gluteal region, looking for any scar, orifice or fistula, any skin tag related to fissure, for bile hemorrhoid, for any abnormal puss, scratch mark [especially in children or in elderly], any change in color due to [erythema, cellulitis of ano rectal region in diabetic pt. and old patient or patient subjected to ano rectal dis]

**2- palpation:** you should have [gloves, xylocaine with cotton] with you during examination, we palpate both gluteal region for any hardness, any masses, for any bile hemorrhoid, skin tag presentation

And after that we make PR examination to the patient,

**3- PR** examination is well indicated in hemorrhoid, fistula in ano [to check the internal orifice], benign prostatic hyperplasia, prostatic nodule

PR examination is also important to determine if painful or painless, if the anal verge tight or spatulas, if there palpable masses like sub mucous abscess for rectal CA, Anal canal CA present as a mass legion, for internal orifice of fistula in ano, also it is palpable o PR

After PR examination we take piece of stool looking if there black color, or dry stool,
4- **Proctoscopy**: contra indicated if there are fissure in ano or if there any pain or in anal stenosis, the idea of this instrument to find if there any bleeding, ulceration, infection, internal hemorrhoid

*If we used proctoscopy and we found lower rectal mass, what are the next step?*

**Answer**: sigmoidoscopy. [two type rigid and flexible type] rigid sigmoidoscopy consists of [20-25cm] it passes through anal canal – rectum – sigmoid to the colon to look for any mass, ulceration, any pathology while the flexible sigmoidoscopy about [60cm] reaching left colon to the splenic flexure looking for diverticula, etc.

**Contra Indication for PR examination**

1. Anal stenosis
2. Sever pain due to fissure in ano

**Relation to the anal canal**

Post: coccyx and sacrum

Laterally: ischiorectal fossa and fat content of the ischiorectal fossa

Ant: different in male from female

**Notice**: examination differ if the examiner asks about general examination or abdominal examination or PR examination

**Before any examination we must take** permission, position, Abdominal examination in supine position

**PR Position** either: knee elbow position, left lateral position or supine position
History

Diabetic foot

1. Permission
2. Do you have diabetes
3. When the D.M diagnosed
4. How was diagnosed as DM
5. What is the treatment was on
6. Type of Treatment now
7. Incidence of hypo/hyperglycemia
8. Have a follow up program
9. How start foot problem
10. Feeling of foot [numbness -------]
11. Kind of treatment received

Grading of D.M

1. Grade -0- just erythema
2. Grade -1- skin and subcutaneous tissue involvement
3. Grade -2- skin +subcutaneous tissue +underlying structure [muscles]
4. Grade -3- involvement of bone
5. Grade -4- pregangre
6. Grade -5- gangrene

Treatment of diabetic foot

1. Control of blood sugar
2. Antibiotic
3. Surgical debridement
**History of jaundice**

1. Take permission, introduce yourself
2. Onset [sudden, gradual]
3. Pain [if he has abdominal pain or not]
4. Fluctuation
5. Progression
6. Duration
7. Fever, rigor
8. Loss of appetite
9. Loss of weight
10. Pruritus, itching [became in obstructive] because bile salt accumulates in the skin
11. Change in color of stool [in obstruction = cloudy stool]
12. Change in color of urine [in obstruction = tea color urine]
13. Medical history
14. Surgical history
15. Blood transfusion, drugs [especially anesthetic drugs like halothane]
16. Family history
17. Social history [smoking, alcohol]
18. Foreign travel [risk of HIV infection]

T.S.B Clinical exam [2-2.5 mg/dl] to appear in the sclera.

Rates of hepatitis in blood transfusion [HA = 0.3%, HB = 30%, HC = 3%]

If the patient after surgery developed jaundice about [36-48 h] half of the jaundice remove after that 8% every day until disappear after one week If the jaundice not disappear after one week this mean there are another cause albumin combine with gamma bilirubin and its half-life 18 days to disappear In obstructive jaundice [T.S.B = 30-35]

**Explain the reason that make T.S.B more than 40**

1. Hemolysis
2. Renal insufficiency
3. Hepatospleenfistula

How to prepare patient with obstructive jaundice for surgery? We give vitamin k [i.m], cannot given him orally because cannot absorb it [fat soluble] also cannot give to him i.v, it causes hemolysis

**Causes of post-operative jaundice**

1. Blood transfusion
2. Too much bleeding
3. Hematoma, absorption
4. Drugs [anesthetic like halothane]
5. Injury common bile duct C.B.D
6. D.I.C [Disseminated intravascular coagulopathy]
**History of breast lump**

1. Permission and introduce yourself
2. Age
3. Lump site
4. Single or multiple
5. Onset of growth
6. Rate
7. Presence or absence of pain
8. Nipple discharge [serous, green, milky, bloody]
9. Temperature, fever
10. Weight loss
11. Bone abdominal pain [may be there a metastasis]
12. Arm swelling [arm swelling due to obstruct lymphatic vessels, surgery destroy vessels]
13. Previous radiation or surgery
14. M.C history
15. Obstetric history
16. Family history [breast tumor, ovary tumor]
17. Symptom of possible metastasis

Triple assessment of breast disease including – history – clinical examination – investigation

**Investigation**

**Radiology:** - ultrasound, mammogram and MRI

**Pathology:** - FNAC, tru-cut needle biopsy, incisional, excisional and mastectomy
Nipple discharge history

1. Permission
2. Type of nipple discharge [nature, bloody, milky, ----]
3. Color
4. Associated mass
5. Unilateral or bilateral breast
6. Single or multiple duct discharge [7-8 duct] the most serious single duct
7. Contraceptive use
8. Pain, tenderness
9. Fever
10. History of trauma
11. Family history

How to differentiate between Paget disease and eczema of the nipple

1. In eczema affect lactating young female while in Paget dis affecting elderly
2. In eczema bilateral itching with vesicle while in Paget dis lateral no itching no vesicles
3. In eczema no underlying mass while in Paget dis there underlying mass
4. In eczema nipple intact, in Paget dis nipple involve

Postoperative fluid: - major operation

- First 24h = 2L [glucose water], why giving them G. water? because of the
  anaesthetization of post-operative patient will have retention so G. water considered as
diuretic
- Second 24h = 2L g. water +1L normal saline
- Third day = 2Lg.water +1Lnormal saline + potassium 60ml daily

Parkland formula = 4ml *weight *percentage of burn

We give crystalloid in first 24h half amount at the first 8h and the remaining in the next 16h
Second day = 0.3ml *weight *%+daily requirement
history / dr. a abd alhussein

thyroid history / toxic goiter

1. Permission
2. Location of goiter
3. Duration
4. Change in size
5. Painless or painful
6. Intolerance to cold or hot environment [ hypo cannot bear cold, hyper cannot bear hot]
7. Anxiety, sleep disturbance
8. Palpitation
9. Diarrhea and constipation
10. Menstrual disturbance in female
11. Mischarage, fertility and abortion
12. Fever
13. sweaty palm
14. dry skin
15. Change in speech, voice
16. Respiratory change, dyspnea
17. Drug history especially anti thyroid
18. History of radiation exposed [ risk factor]
19. Past medical, special cardiac problem
20. Family history of goiter

Retrosternal goiter = respiratory obstruction

Pamperton test: asking the patient to rise his hand above the head for one minute it will cause

1. Dyspnea
2. Neck vein engorgement
3. Stridor
4. Cyanosis

Differential diagnosis for mass that move with swallowing

1. Pretracheal lymph node
2. Thyroglossal cyst
3. Sub hyoid bursa
4. extrinsic c a of larynx
5. Goiter

If the patient suffers from dyspnea [ cyanosis] after surgery, almost likely he has hematoma, and the drain doesn’t working properly so opening the stitches and limiting the hematoma and prepare him for emergent surgery
Type of incision: **collar incision**

*Common nerve injury:* recurrent laryngeal nerve [hoarseness of the voice] and external branch of superior thyroid nerve [the patient cannot elevate his voice] others non common nerve [supraclavicular nerve] and [transvers cervical nerve]

**History of abdominal pain**

1. Permission
2. Onset, duration
3. Location and severity of pain
4. Radiation [acute cholecystitis pain radiated to the shoulder because they have the same nerve supply c3, c4, c5]
5. Time related to food [in PU increase pain while in DU eating retire pain]
6. Aggravating and relieving factors
7. Associated fever and rigor
8. Nausea and vomiting
9. Change in bowel motion and stool
10. Weight loss
11. Past history and previous episode
12. Past surgical, medical history
13. Drug history
14. Jaundice
15. Social history

**Q: how to differentiate between intra-abdominal pain or extra abdominal pain?**

*Answer:* using carnet’s sign. the patient can be asked to lift the head and shoulders from the examination table to tense the abdominal muscles. An alternative is to ask the patient to raise both legs with straight knees.

A positive test increases the likelihood that the abdominal wall and not the abdominal cavity is the source of the pain (for example, due to rectus sheath hematoma instead of appendicitis). A negative Carnet’s sign is said to occur when the abdominal pain decreases when the patient is asked to lift the head; this points to an intra-abdominal cause of the pain.

**Q: how to differentiate between intra and extra abdominal mass**

*Answer:* the same test above if the mass disappears during contraction it will be intra-abdominal mass if not will be extra
**Stone types**

**Urolithiasis**: stone disease of the urinary system, occurs because of the chemical component of the urine

urine has special PH and specific conc.

There are saturation and super saturation state, in case of super saturation and the component cannot resolve in urine this will cause crystallization

In urine, the PH is acidic [less than 4.5] and the ability to resolve these component will be very slow and increase if the urine become alkaline, and this is the reason why we ask any patient with renal stone dis to drink a lot of water for making dilution and increasing the ph. of urine

The accumulation of crystals will lead to the formation of stones, another theory indicates: there are a component like the nucleus called [ Nagus] around it accumulate the crystals and lead to the formation of the stones

The most common type of stone in our country [ infected stone] struvite stone

**Types of stone**

1. Calcium phosphate: very rare
2. Calcium oxalate [ more common]
3. Uric acid stone
4. MAP stone [ magnesium, ammonium and phosphate]
5. Cysteine stone
6. Indinavire stone [ very rare]

**Calcium phosphate** very rare stone because it will never happen unless there are structural problem or physiological problem in your body like [ RTA] renal tubular acidosis

RTA: in ability of the kidney of the patient for acidification of urine

**Cysteine stone**: occurs in case of inborn error metabolism, it is a specific syndrome in children caused by in ability of the liver to metabolize special type of amino acid, and there are four amino acid involved COLA [ cysteine, ornithine, glycine and arginine] and in this dis the cysteine doesn’t metabolize and appear in the urine to form the stone

**Calcium oxalate**: control of calcium by renal and parathyroid gland hormones, oxalate metabolism in the liver and the production in male more than in female. in some patient with short bowl syndrome the absorption of oxalate will decrease, so the causes of calcium oxalate either increase in oxalate level or decrease in calcium level, and to prevent the occurrence of these stones by giving citrate, the citrate combine with calcium and prevent the connection between calcium and oxalate and to alkalination of urine

**Uric acid stone**: can be controlled by good hydration to the patient and alkalination of urine
Types of stone according to radiolucency

1. Radio lucent
2. Radio opaque
3. Faint radio opaque

Radio opaque stone: anything contains calcium like calcium phosphate, calcium oxalate, struvite stone

Radio lucent: uric acid stone, xanthine stone

Faint radio opaque: cysteine stone can see it because it contains Sulphur

All must all types of stones can be identified by [CT-scan] except indinavir stone

Indinavir stone occurs in some patient taking drug for HIV dis.

[ MAP = struvite stone = infected stone]: come from chronic urinary tract. and called stag horn stone

Stone range from [4mm – 5cm] may occur in kidney, ureter and pelvic region

Signs and symptoms

1. Pain: if there are incomplete obstruction the pain will be moderate
2. Nausea, vomiting
3. Type of pain: if occurs in ureter the pain will be colicky in nature, sharp, continuous not relief by changing the position
4. Fever: on case of infection
5. Pain in kidney dull in nature

Investigation

1. Urinalysis: RBCs
2. US [detect 99% of renal cases]
3. IVU for radio lucent stones

Q: if we make IVU for a patient and we found obstruction, what are the D.D for this obstruction

1. Radiolucent stone
2. Clot
3. Tumor
4. Sluffed papilla

Management

1. Cannula
2. Analgesia
3. NSAID if there are no c.i for it
4. Alpha blocker [smooth muscle relaxant]
5. Anti-emetics
Treatment

if the stone in the kidney

1. Less than 1 cm by ESWL only
2. [1 – 2 cm] double j insertion then to ESWL
3. More than 2 cm percutaneous nephrostomy, the position will be lateral position and the incision called [flank incision]

The layers opened through surg.

1. Skin
2. Subcutaneous tissue
3. External oblique m.
4. Internal oblique m
5. Latissimus dorsi m
6. Serratus ant and post
7. Pyelotomy

Contraindication of ESWL

1. Bleeding tendency
2. Pregnancy [absolute c I]

Side effects of ESWL

1. Hematuria
2. Hematoma
3. Destruction of renal tissue
4. Hypertension
5. D.M [very rare]

Types of ESWL

1. Electromagnetic
2. Hydroelectric
3. Basoelectric

Shock Wave Lithotripsy (SWL) is the most common treatment for kidney stones in the U.S. Shock waves from outside the body are targeted at a kidney stone causing the stone to fragment. The stones are broken into tiny pieces. It is sometimes called ESWL: Extracorporeal Shock Wave Lithotripsy.

These are what the words mean:

- extracorporeal: from outside the body
- shock waves: pressure waves
- lithotripsy (the Greek roots of this word are "litho" meaning stone, "tripsy" meaning crushed)
So, SWL describes a nonsurgical technique for treating stones in the kidney or ureter (the tube going from the kidney to the bladder) using high-energy shock waves. Stones are broken into "stone dust" or fragments that are small enough to pass in urine. If large pieces remain, another treatment can be performed.

*Double j: length [15 – 25 cm] diameter [3,4,5,6,8] according to the patient*
Thyroid / history / examination

History / Dr. A Abd Alhussein

1. Permission
2. Location of goiter
3. Duration
4. Change in size
5. Painless or painful
6. Intolerance to cold or hot environment [hypo cannot bear cold, hyper cannot bear hot]
7. Anxiety, sleep disturbance
8. Palpitation
9. Diarrhea and constipation
10. Menstrual disturbance in female
11. Mischarage, fertility and abortion
12. Fever, sweaty palm and dry skin
13. Change in speech, voice
14. Respiratory change, dyspnea
15. Drug history especially anti thyroid
16. History of radiation exposed [risk factor]
17. Past medical, special cardiac problem
18. Family history of goiter

Retrosternal goiter: symptoms including dyspnea, dysphagia, obstruction of venous return at the thoracic inlet from a substernal goiter results in a positive Pemberton’s sign—facial flushing and dilatation of cervical veins upon raising the arms above the head for [1 min], causing [dyspnea, neck vein ingoriment, stridor, cyanosis]
Recurrent nerve paralysis (rare)

Treatment:
In obstructive symptoms and associated with thyrotoxicosis usually not treated with anti-thyroid drug or radioiodine because it may cause enlarge of goiter.
Surgical operation through neck incision rarely need sternotomy

D.D FOR mass that move with swallowing

1. Pre tracheal lymph node
2. Thyroglossal cyst
3. Sub hyoid bursa
4. Extrinsic CA of larynx
5. goiter

If the patient suffers from dyspnea [cyanosis] after surgery, almost likely he has hematoma, and the drain doesn’t working properly so opening the stitches and limiting the hematoma and prepare him for emergent surgery
Type of incision: collar incision

Common nerve injury: recurrent laryngeal nerve [hoarseness of the voice] and external branch of superior thyroid nerve [the patient cannot elevate his voice] others non common nerve [supraclavicular nerve] and [transvers cervical nerve]

Dr. alaa / thyroid examination

Review to the history

During history ask the patient about previous drug, if he taking drug specific for the thyroid gland or not, radiation therapy, chemical therapy, if there previous surgery or not, all these are signs due to hyperthyroidism

If there are numbness in his finger [carpal tunnel syndrome] if female, ask about menstrual irregularity

If the patient says that there is palpitation, tachycardia, increasing appetite, cold region in the body, increase in body weight all these are signs and symptom of toxic goiter [hyperthyroidism]

We should examine the patient to see if there any abnormalities because it may be toxic goiter, graves’ disease, diffuse toxic goiter, may be toxic nodule, multinodular goiter or due to the malignancy due to certain disease

Examination of the thyroid

1. Inspection: to see if there any swelling of the thyroid gland, dilated veins or not, looking for any previous scar. If there swelling we should describe it like for example:—there are swelling in the right side of the thyroid gland or at the left, and the swelling about [5-6cm] and the skin above the swelling it normal, no dilated veins and should ask the patient to take water to see if it move with swallowing or not, Pemberton’s sign—facial flushing and dilatation of cervical veins upon raising the arms above the head for [1 min] and this examination specific for retrosternal goiter which cause facial flushing of the face and engorgement of the vein of the neck

2. Palpation: we have two procedures for palpation of the thyroid gland either from the front or from behind, usually from behind
   i) First thing take permission from the patient
   ii) Ask the patient if there any tenderness
   iii) If we start palpation of the left side we press in the right side to make the left side more prominence and checking the site, nodularity, attachment to the skin or not, no palpable swelling
Q: if the left side of the gland normal should I examine the regional lymph node or note

Ans: you should examine the regional lymph node [preauricular, postauricular, sub mental, submandibular, cervical, superficial cervical, deep cervical and supraclavicular lymph node] because of the lateral appearance, may be the thyroid normal but there are cervical lymph node enlargement and when sending the patient to the FNA to find that he has papillary carcinoma of the thyroid gland.

Then you have to go to the other side and where the swelling is found you must make good description about it like for example there is swelling about [2cm] in the right lobe of the gland

**In any swelling there are three important things**

1) Not comprisable: swelling of the artery when pressure on it, it will disappear
2) Not reducible [mean not hernia]
3) Not pulsated [not aneurysm]

And see if the swelling move with the skin or not, if attached to the underlying structure and ask the patient to swallow to see if it move with swallowing or not, and finally examine the regional lymph node

3. **percussion**: we have to make percussion to see if the patient has retrosternal goiter or not so we make percussion in the [sternum] it must be resonance because there are lung and air in this region in normal state but if it became dullness it means soft tissue in this region and this is called retrosternal goiter

4. **auscultation**: we need auscultation in case of toxic goiter, because in toxic goiter there are over activity, and need more blood flow in superior thyroid artery [carotid artery] so we auscultate in the upper lobe of the thyroid gland to find the blood push strongly on the wall of the blood vessels

Now we finished examination of the thyroid gland and need to describe if the patient in the euthyroid, hyperthyroid [toxic goiter] or hypothyroidism

If asked from you examine the thyroid of the patient:

1) General examination
2) Thyroid examination
3) Signs of the hyperthyroidism
4) Then ask the patient questions related to the condition like, appetite, allergic history, past history, carpal tunnel, surgical history and bowel

If the patient has pain [tenderness] it must likely inflammation [thyroiditis] and also you need to do the examination gently

**Some notes about abdominal examination from dr. alaa**

1) During abdominal examination we start from the nipple to the mid-thigh
2) Why we start from the nipple or second intercostal space [In female]. Ans: because there are some conditions related to the abdomen like gynecomastia in male because of high level of estrogen due to liver abnormalities
3) Why we expose the patient to the mid-thigh to check the genitelia to find if there any abnormalities, because some abnormalities in genitelia may affect the abdomen like [extended testis, obstructive hernia, tumor of the testis because the lymphatic drainage of the testis goes to the para aortic region so it causes enlargement and compression on the inferior vena cava

4) Palpation start away from the region of the pain
5) If there cannula the needle put in median cupital vein
6) Spleen level in ribs [9,10,11]
7) Examination of the spleen usually started from the umbilicus because the enlargement of the spleen will go diagonally to the umbilicus
8) Palpation during inspiration the diaphragm will be low level and the organ will hit your finger and during each inspiration you should press to see if there any tenderness
9) Not enlarge or not palpable spleen: palpable spleen when the size more than double but not enlargement may be one and half more than the normal size but not palpable

10) **How to differentiate between the enlargement of the spleen and enlargement of the kidney clinically**

   Answer:
   1) Enlargement of the spleen goes diagonally while in the kidney vertically
   2) The spleen has splenic notch while the kidney has no notch
   3) The spleen cannot get above it [between the spleen and costal margin] while the kidney can get above it [because it is retro peritoneum]
   4) On percussion the spleen dull because tissue while kidney resonance because the colon above it
   5) The kidney pallotable while spleen not

**When you palpate organ**

1) Press during inspiration
2) Looking to the patient face
3) To see if it palpable or not then you must make a description

**Murphy’s sign:** enlargement of the gall bladder [acute cholecystitis], the finger below the costal margin and ask the patient to take deep inspiration you will find the patient stop in half inspiration

**Grid iron incision layers**

Skin - Subcutaneous tissue - Superficial layer of superficial fascia - Deep layer of superficial fascia - Deep fascia - External oblique m - Internal oblique m - Transvers abdominal m - Peritoneum

**How to go directly to the appendix**

First find the cecum [has taenia coli - longitudinal fiber] and at the end of the cecum to find the ilium, the end of the cecum is the base of the appendix

During surgery of appendicitis and when we reach to the appendix and found it normal, you become happy or sad? Very sad because there are another pathology causing these symptoms such as diverticulum in male and ovarian cyst in female.