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Q1 →

What is hydronephrosis? Write in detail its causes, Pathophysiology, diagnosis and treatment?

Ans

Hydronephrosis →

Hydronephrosis is the condition in which the swelling of one or both kidneys occurs, due to the build up of urine.

The hydronephrosis occurs when the waste water (urine) cannot drain out from the kidney to the bladder because of blockage or obstruction.

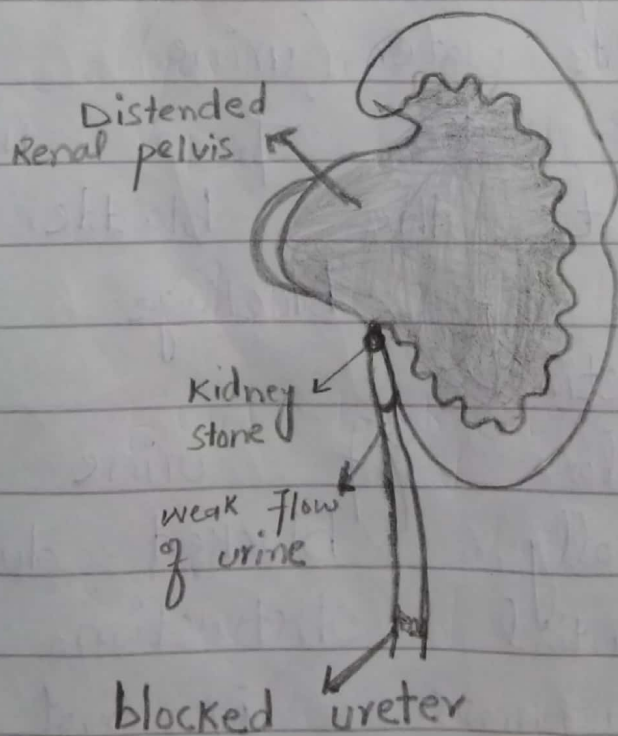
The outflow of urine is generally blocked due to partial obstruction.

The hydronephrosis is not a primary disease, it is a secondary disease which may result in

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Some underlying disease -
The hydronephrosis occur
in about 1 in every
100 babies.

Hydronephrosis occurs when there
is either blockage of
the outflow of urine,
or reverse flow of
urine already in the
bladder that cause the
renal pelvis to become
enlarged.



Hydronephrotic Kidney:→

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Causes of Hydronephrosis:

The hydronephrosis is caused due to certain factors which are given below.

- ↳ The common cause of hydronephrosis is kidney stone, scarring and the blood clot.
- ↳ Acute unilateral obstructive uropathy, this is the development of obstruction in one of the ureters, which are the tubes that connect the kidney to the bladder. The blocked ureter may lead to back the urine into kidney which causes swelling.
- ↳ Other causes include
 - ↳ Enlarged prostate gland in men.
 - ↳ Pregnancy which causes compression.
 - ↳ Kink in the ureteropelvic junction.
 - ↳ Tumors in or near the ureter.
 - ↳ Birth defect.
 - ↳ Narrowing due to injury.

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Pathophysiology of Hydronephrosis:→

- ↳ The hydronephrosis can result from anatomic or functional process interrupting the flow of urine.
 - ↳ The Dilation of the Renal pelvis and Calyces.
 - ↳ Either pelvic type which may be in the pelvic renal area.
 - ↳ Renal Type, most common type are pelvirenal type in which both pelvis and Calyces are equally dilated.
- Due to ↓ etiological factor

Obstruction of the urine flow

↓
Fluid backs up into the kidney.

↓
Causing dilation of renal pelvis

↓
Results in pressure trauma.

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Diagnosis of Hydronephrosis →

Getting the diagnosis as early as possible is extremely important. The kidney may lead to be completely destroyed if left untreated.

Diagnosis →

May be symptomatic & signs.

Having ultrasound.

Having IVP.

Cystoscopy.

Delayed emptying.

urine culture

GFR.

Treatment of Hydronephrosis →

The treatment for hydronephrosis depends upon the cause of your obstruction.

↳ prompt drainage.

↳ Nephrectomy.

↳ Corrected to the cause.

↳ Catheter drainage.

Q2 →

Explain in detail the types/categories and Pathophysiology of the tuberculosis?

Ans

Tuberculosis → TB tuberculosis is a type of disease which is caused by the bacteria that are spread through the air from one to another.

The TB is a risky disease and can lead to the death. (fatal).

It is caused by bacteria called myobacterium

"Types/Categories of TB"

The TB are categorized into three categories.

- ↳ Active Tuberculosis
- ↳ Latant Tuberculosis
- ↳ Millitary Tuberculosis

P.T.O

↳ "Active TB":→

The active TB is the type of TB in which the bacterium are rapidly spreading (multiplying) and invades different organs of the body.

The active TB may transfer from one person to another through air.

It is a contagious, mean transfer from one to another and show symptoms.

↳ It also called extrapulmonary TB because it invades other ~~part~~ organs as well.

↳ Lung Diseases is the most common type of the active TB.

↳ "Latent TB":→

The type of TB which occurs if someone having TB bacterium but in a small amount that

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do not spread and also not leading (causing) disease. This type of TB is under our control (immune system control). The latent type of TB is not transferring from one person to another (non-contagious) and latent TB do not show the symptoms.

It is detected by TB test such as TB test skin, a person having this type of TB will have normal chest X-ray.

The risk in this type of TB is that, it may be changed into active disease which may not well for the immune and not control by your immune system.

↳ "Milliary TB"

If a TB bacteria find their way into the

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blood → Stream then the TB occurs is millitary TB.

↳ The Millitary TB may leads to active disease but this TB is of rare cases.

This type of TB can also having symptoms but depending on the body parts ^{eg} a low red blood cell count is noticed if someone having bone marrow is affected.

↳ It was named millitary TB because it appearance is similar to millet seeds.

This type of TB is so harmful and may lead to death (fatal).

B pathophysiology of Tuberculosis:-)

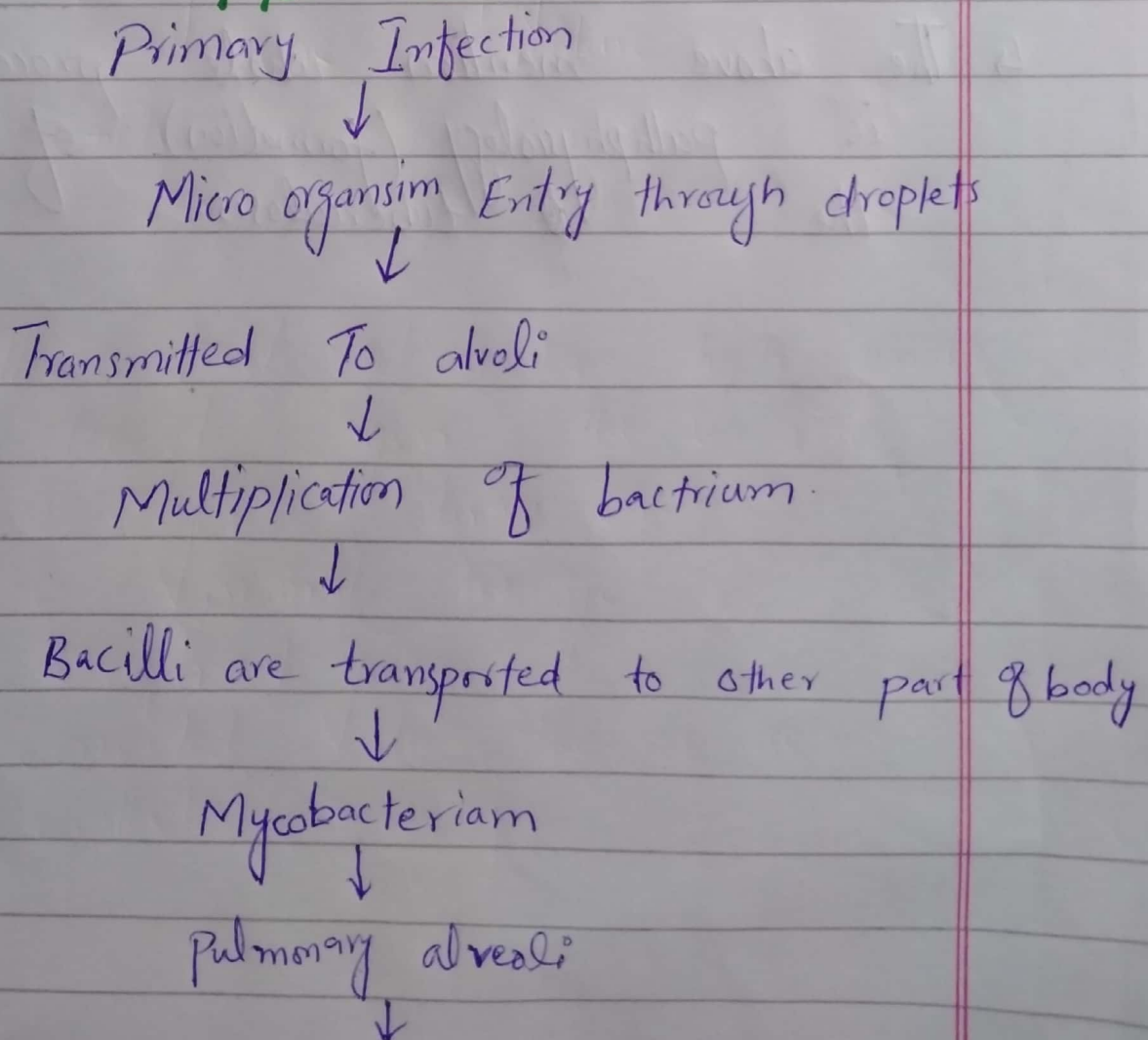
Infection occurs when a person inhales droplets nuclei containing tubercle bacilli that reaches the alveoli of lung.

Tubercle bacilli are ingested by alveolar macrophages and

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majority of these are destroyed.
A small number may multiply and are released when the macrophages die, if alive these bacilli may spread by the way of lymphatic channels or through the blood stream to more distant tissue and organ, (Brain, kidney lung, bones etc). and can lead to tuberculosis.

Flow Chart:→



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Immune system has lodged



Start replication inside macrophages



Primary infection occurs



Lead to necrosis



Involve nearby lymph nodes.



Latent TB.

↳ The above mention whole process is pathophysiology (formation) of the tuberculosis.

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Q3: → How are renal stone formed and what are the different types of renal stone? Which radiological procedure is most suitable diagnosing renal stone?

Ans **Kidney Stone:** → The word Nephrolithiasis is for kidney stone.

Nephrolithiasis: is the condition in which hard masses (kidney stones) form in the ~~the~~ urinary tract.

Formation: →

Kidney stone is formed when the highly concentrated urine constituents crystallize and harden to form calculi.

The kidney stone is formed when one urine contain more crystal forming substances — such as calcium, oxalate or uric acid.

Kidney Stones are formed when our urine may lack the substances that prevent the crystals from sticking together which lead to an ideal environment for the formation of kidney stone.

Types of Renal Stone:→

① Calcium oxalate Stones:→

Calcium oxalate stone forms if the urine contains low levels of citrate and high level of calcium and either oxalate, which is naturally occurring substance. These may include black tea, nuts, and spinach etc. The calcium oxalate type of stone is the most common type.

② Calcium phosphate Stones:→

If there is some abnormalities occurs in the way of urinary system then it lead to

Calcium phosphate type of stone. For detection of the calcium phosphate stone physician advised for a series of blood and urine tests.

③ Struvite Stone:→

Struvite Stone as form as a result of certain type of urinary infection. This type of stone some time may occupy the whole kidney because it grows rapidly and become large. Kidney function may be losses due to struvite stone if it leave untreated.

④ Uric Acid Stone:→

This type of stones occur in peoples who do not drink enough water and eat high animal proteins, this type of stones is more common in men.

⑤ Cystine Stones:→ Cystinuria which is a genetic disorder, causing cystine stone. This

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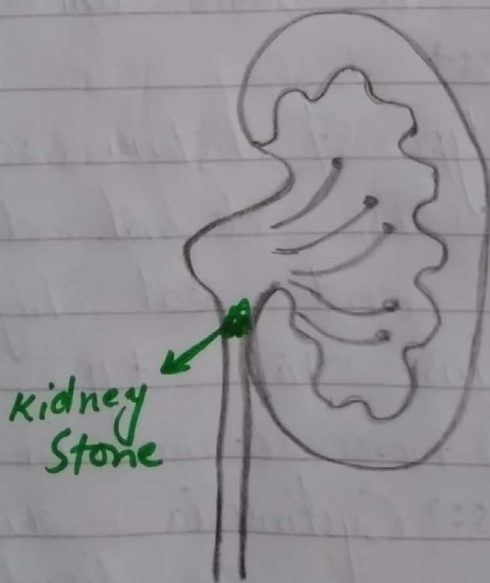
Can lead to form stones in kidney, bladder and ureter which carries the urine from the kidney to bladder.

Radiologic procedure most suitable for diagnosing renal stone:→

↳ There are two most suitable procedures for diagnosing renal stone i) CT Scan ii) Ultrasound.

↳ A CT Scan is ~~op~~ often used in ER when a stone is suspected.

It is used because it can make a quick and exact diagnosis.



Q4:→ Briefly describe the types, causes, diagnosis and the treatment of goiter?

Ans **Goiter**:→

Simply we define the Goiter as "the swelling of the neck resulting from enlargement of the thyroid gland".

OR:→ A condition that increase the size of thyroid is called goiter.

Types of goiter:→

① **Colloid Goiter**:→

If there is the deficiency of the minerals that are essential to the production of thyroid hormones or the lack of iodine results in the formation of the Colloid goiter.

(2) Non-toxic Goiter:→

The formation of the Non-toxic Goiter is of unknown causes, but it may be caused due to medication like lithium. The Goiter perform normal function the Non toxic goiter has no affect on the thyroid.

(3) Toxic Nodular Goiter:→

This type of goiter forms an extension of a simple goiter. As it enlarge it forms one or more small nodules, the nodule then produce own thyroid.

Causes of Goiter:→

Goiter is formed due to certain causes which are following. Iodine is essential to helping your thyroid produce thyroid hormones.

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When someone have not enough iodine the ~~thy~~ thyroid works extra to make thyroid hormone causing the gland to grow larger. Thus we know that the deficiency of iodine can cause Goiter.

↳ If the thyroid produce more thyroid hormone than the normal (hyperthyroidism), then this excessive production of hormones makes the thyroid increase in size, making Goiter and this condition is known by "Grave's disease".

↳ If someone having "Hashimoto's Disease" in which low/less thyroid hormones are produces than normal this may lead to cause the thyroid to swell (Goiter).

↳ Other cause include below.

↳ iodine deficiency

↳ Selenium deficiency

- ↳ Auto-immune inflammation
- ↳ Nodules in thyroid.
- ↳ Tumors, benign, & malignant. etc.

Diagnosis of Goiter:→

For diagnosis of Goiter physician suggest certain procedure below.

Blood Test:→

To detect the changes in hormone level.

Thyroid Scan:→ The Scan are used for size and condition of goiter.

Ultrasound:→ For the size of goiter.

Biopsy:→ Samples are sent to lab for examination.

Treatment of Goiter:→

Medication:→ (Corticosteroids) to reduce the inflammation.

Surgeries:→ Surgical removal of thyroid.

Radioactive iodine:→ It is used to destroy the excess tissue.

Home Care:→ Depending on the goiter.

Q5 →

Write a detail note on Atelectasis, bronchiectasis and pneumonia?

Ans

Atelectasis →

The collapse of lung or complete collapse is called Atelectasis.

This collapse may involve the whole lung, a lobe, a segment, or subsegmental.

Risk Factors →

Anesthesia, foreign bodies
Mucus plugging, prolonged bed rest.

Symptoms →

Cough, Fever
Trouble in breathing.
Dyspnea,
Tachypnea.
Restlessness.
Decreased breath sound.
etc.

Diagnosis of Atelectasis →

Chest x-rays.
CT scan of chest
Bronchoscopy if FB.

Bronchiectasis:→

The bronchiectasis is a type of lung disease in which there is abnormal and permanent dilation of bronchi occur.

It is the permanent dilation of bronchi and bronchioles due to destruction of the muscle resulting with chronic infection.

It result in the destruction, fibrosis, and abnormal permanent dilation of bronchi.

⊙ Symptoms:→

Cough.
Sputum volume.
Sputum purulence
Breathlessness.
Fatigue.
Hemoptysis.

Diagnosis:→

Chest x-ray.
CT Scan.
Sputum culture.
Sweat test.
Bronchoscopy.
etc.

Treatment:->

- ↳ Bronchodilators
- ↳ Antibiotics.
- ↳ Expectorant and Mucus thinning Medicines.
- ↳ Oxygen therapy.
- ↳ Surgery.

Pneumonia:->

The pneumonia is generally define as the inflammation of lung parenchyma, it include the alveoli (not including bronchi).

The infectious cause for death (fatal). The pneumonia occur may be one or both lungs. The pneumonia is caused by bacteria, fungus and virus.

In this condition the alveoli fill with fluid or pus making it difficult for breathing.

Symptoms:->

- Symptoms includes.
- ↳ Cough
 - ↳ Fever, sweating
 - ↳ Shortness of breath.
 - ↳ Rapid breathing.
 - ↳ Low energy fatigue.

Diagnosis:→

For Diagnosing the
physician may suggest
the following procedure.

History, Singn Symptoms
CT Scan

Chest x-ray
Sputum test.

Serology.
Bronchoscopy

Blood Culture
PCR (polymerase chain Reaction).

Treatment of Pneumonia:→

↳ Controls the fever with
aspirin.

↳ Drink plenty of fluids.

↳ Stay away from smoke.

↳ Get lots of rest.

↳ Drink warm beverages, take
steamy baths.

↳ Do not take cough medication
without first talking
to your doctor.