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QNO: 02

Ans: Hydronephrosis

Hydronephrosis is the condition that typically occur when a kidney swell due to urine failing to properly drain from the kidney to the bladder. This swelling most commonly affect only one kidney. But it involve in both kidney.

Hydronephrosis is not primary disease. It's a secondary disease that result from some underlying disease. It is structural and is result of a blockage or obstruction in a urinary track.

Causes:

- one of the most common causes of Hydronephrosis is acute unilateral unilateral obstructive uropathy. (sudden development of an obstruction in ureters)
- The most common cause of this blockage is kidney stone.
- Other causes of a blockage--
  - a kink in a ureteropelvic joint
  - an enlarged prostate gland in a men.
  - pregnancy which cause a compression due to growing fetus.
  - tumor in or near the ureters
  - A narrowing of the ureter from an injury or birth defect.

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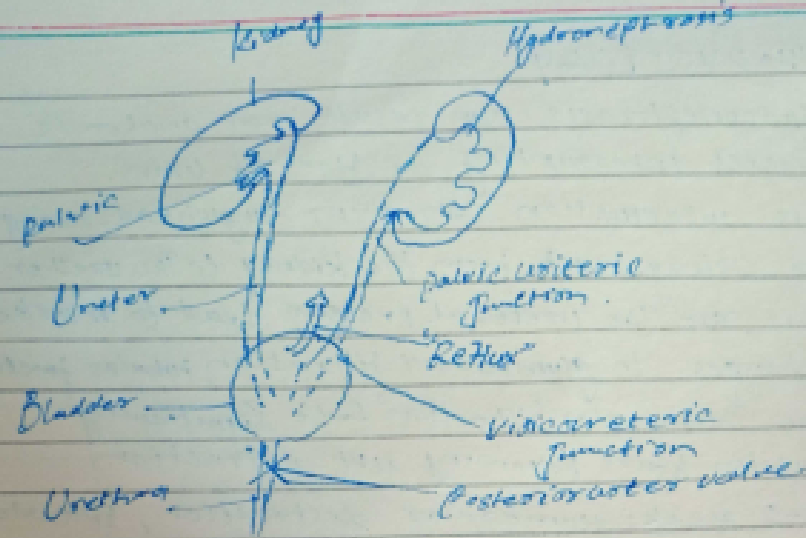
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## PATHOPHYSIOLOGY

- Hydronephrosis can result from anatomic process interrupting the flow of urine.
- This interruption can occur anywhere along the urinary tract from the kidney to the urethra.
- The rise in ureteral pressure lead to marked changes in glomerular filtration, tubular function.
- The glomerular filtration rate significantly within hours following acute obstruction.
- 1-2 week: glomerular destruction, tubular atrophy and interstitial fibrosis occur.
- By 6-8 week: irreversible damage occurs.

## DIAGNOSIS

- History collection.
- Physical examination: An enlarged kidney may be palpable on examination. Suprapubic tenderness along with a palpable bladder is strongly suggestive of acute urinary retention.
- Blood test: can show raised creatinine and electrolyte imbalance.
- Urine analysis: may show an elevated pH due to secondary distention of nephron.
- Ultrasound: A good visualization of kidney and ureters.
- Treatment:
  - Surgery to relieve obstruction
  - Nephrectomy - Severely damaged kidney
  - Anticoagitic
  - Narcotics = Demerol or morphine.



Q NO: 02

Ans: Tuberculosis (TB)

definition: TB is a potentially fatal contagious disease that can affect almost any part of the body but it mainly infects the lungs.

TYPES:

A. Pulmonary TB:

(1) = Primary TB:

The infection of an individual who has not been previously infected is called primary TB.

It is may not be detectable in radiography

(2) = Secondary TB:

The infection that individual who has been infected previously is called Secondary TB

B1.

## Extra Pulmonary TB

90% are TB patient

Affected Site in body are:-

### (1) Lymph nod TB

- Seen frequently in HIV infected patient

Symptoms: painless swelling of lymph nodes most commonly at cervical and Supracervical.

Systemic System are limited to HIV infected patient.

### (2) pleural TB

Involvement of pleura is common in primary TB and result from penetration of TB bacilli into pleural spaces.

### (3) TB of Upper Airways.

Involvement of pharynx, larynx and Epiglottis

### (4) Genitourinary TB:->

• Any part of Genitourinary can affected

### (5) Skeletal TB

• Involvement of weight bearing part like Spine, hip, knee.

### (6) GI TB

→ GI tract involve.

(7) TB Meningitis and Tubercular  
→ 5% of All extra pulmonary TB  
result from Hematogenous Spread of 1<sup>st</sup> and 2<sup>nd</sup>  
TB

(8) TB Pericarditis.  
- 1-8% of all Extra pulmonary TB cases.  
- Spreads mainly in mediastinal and  
Hilar nod or from Lungs.

(9) Miliary TB.  
- Result from Hematogenous Spread of Tubercle  
Bacilli  
- Spread is due to entry of infection into pulmonary  
vein producing Lesion in different extra  
pulmonary sites.

(10) Less common Extra pulmonary TB.  
Oculis: parapathelematis, painful Hypersensitivity  
related phlyctenular conjunctivitis.

B.

Pathogenesis Physiology:

• Initial Infection:

- Entry of Microorganism through Droplet Nuclei
- Bacteria is transmitted to Alveoli through airway
- Deposition of Bacteria
- Bacilli are also transported to other bacterial  
part of the body through a blood stream
- Phagocytosis By Neutrophils and Macrophages.
- Accumulation of Exudate in Alveoli
- Bronchoneumonia

- \* New tissue masses of Live and Dead bacilli are surrounded by Macrophages which form a protective mass around Granulation.
- Granulomas then transform to fibrous tissue mass and central portion of which is called Ghan tubercle.
- The Metazial (Bacteria and macrophages) become Necrotic forming cheesy mass
- Mass become calcified and become Collagenous Scars.

↓

- = Active Disease or RE Infection.
  - Inadequate immune response.
  - Activation of Dormant Bacteria.
  - Ghan tubercle Ulcerate and Releasing Cheesy metazial into Bronchii.
  - Bacteria then become Air born Resulting in further spread of infection.
  - Ulcerate tubercle become Scar tissue.
  - Infected lung become Inflamed.
  - Further development in pneumonia
  - Unless the process is ARRESTED it spread downwards to the Hilum and later extend to adjacent lobes.

QNO: 02

Ans: Renal Stones formation.

Kidney Stone form when your Urine contains more Crystal-forming substance

- Salt is calcium, oxalate and Uric acid
- How the fluid in your urine can dilute.
- At the same time your urine may lack substance that prevent crystal from sticking together, creating an ideal environment for stone formation.

TYPES of kidney stones.

- There are five main types of stones.

1) Calcium oxalate stones = (75%)

- Hard, single, brown in color
- Mulberry stones.

2) Phosphal stones (10-15%)

- Smooth, round, white in color
- Staghorn calculus

3) Uric Acid stones (5%)

- Multiple, yellowish, radiolucent
- seen in gout etc.



## Cystin Stones (2%)

- Seen in Cystinuria
- Hard, radio-opaque due to sulphur.

## Struvite Stone

- most common in women
- grow quickly
- Some time occupying entire kidney.

Urinalysis, ultrasound imaging and blood test are three techniques often used to diagnosed kidney Stone.

QNO: 04

ANS

Goiter.

- A condition that increase the size of your thyroid is called a goiter
- more common in women.

⇒ TYPES

(i) Colloid Goiter (endemic)

A colloid goiter develop from the lack of Iodine, a mineral essential for the production of hormones.

(ii) Nontoxic Goiter (sporadic)

- This cause is usually unknown
- may cause by medication like lithium.
- didn't affect production of thyroid hormone.

(iii) Toxic Multinodular Or multinodular Goiter.

- form one or more small nodules as it enlarged.
- The nodules produced their own thyroid hormone, causing hyperthyroidism.

Causes:

Iodine deficiency is main cause of Goiter.  
other cause included

Hashimoto's thyroiditis

It predispose thyroid to not being able to produce enough hormones, cause hypothyroidism.

## Graves' Disease.

- occur when your thyroid produce more hormone than normal which as known is hyperthyroidism
- more hormone produce in result size of thyroid increase.

## Inflammation:

- Inflammation of thyroid cause goiter.

## Nodules:

- Solid or fluid containing Cyst may appear on the thyroid and cause it to swell.

## Thyroid Cancer.

- cancer may effect the thyroid which cause swelling in one side of the gland
- thyroid cancer is not common is the formation of benign nodules

## Diagnosed

### Blood Test:

- it detect changes in hormone levels and increase production of antibodies.

## Thyroid Scan:

- Scan show size and condition of goiter

## Ultrasound:

- Ultrasound produce image of your neck, and size of Glands and whether there are nodules.

## Biopsy:

- is the procedure which take small samples of thyroid nodules if present.

## Treatment:

### (i) Medication:

"Corticosteroids" may be used to reduce inflammation if you have Thyroiditis

### (ii) Surgery

- Surgical removal of your thyroid known as Thyroidectomy

### (iii) Radioactive Iodine:

The Radioactive Iodine is ingested orally and travels to your thyroid through your blood where it destroy overactive thyroid tissue

### (iv) Home Care:

you may need to increase iodine or decrease it home.

Q NO: 5

Ans: Atelectasis

Atelectasis is the collapse or closure of lung resulting in reduced or absent gas exchange.

1. It is often called collapsed lung.

2. It is a very common finding

in chest x-ray and other radiological studies any may be cause by normal exhalation or by various medical conditions.

Sign and Symptoms:

- Cough - not prominent
- Chest - not common
- breathing difficulties - Fast and shallow
- Low oxygen saturation
- pleural effusion.
- Cyanosis.
- increased heart rate.

Cause:

a most common cause is post surgical atelectasis.

→ another common cause is pulmonary TB

Treatment:

post surgical atelectasis is treated with physiotherapy.

## (a) Bronchiectasis:

- It is a disease in which there is permanent enlargement of parts of the airway of the lung.

Causes:

Infections, Cystic fibrosis, other genetic conditions.

↳ Symptoms:

productive cough, shortness of breath, chest pain

Treatment:

Antibiotic, bronchodilators, lung transplants.

Diagnostic Methods:

Based on Symptom, CT Scan.

## 2) Pneumonia:

- Pneumonia is the lung infection that affect the air sacs (alveoli) at the end of airways
- The infect interfer with the delivery of oxygen from air sacs into the blood and the removal of  $CO_2$  from the body.

### Causes:

- Breathing infected air
- Having cold and flu.
- Measle or chicken pox.
- Breathing large amount of food gastric acid or vomit into the lungs.

### Symptoms:

Low body temperature  
Coughing with chest pain  
Being out of breath  
Sore muscle  
Nausea, vomiting, Diarrhea.  
Headaches.

### Treatment:

Drink lot of water  
Get lot of rest  
Control fever with aspirin  
No cough drops

### Prevention:

Wash your hands!!!  
Get Vaccination  
Keep smoking and  
alcohol use to bare minimum.

The End: