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CLASS :- BS (RAD)

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PAPER :- Clinical Medicine

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Q 1:- What is Hydronephrosis? write in detail causes, Pathophysiology, diagnosis and treatment.

Ans:- Hydronephrosis:

→ is the swelling of a kidney due to a build-up of urine.

→ it happens when urine can not drain out from the kidney to the bladder from a blockage or obstruction.

→ It can occur in one or both kidneys.

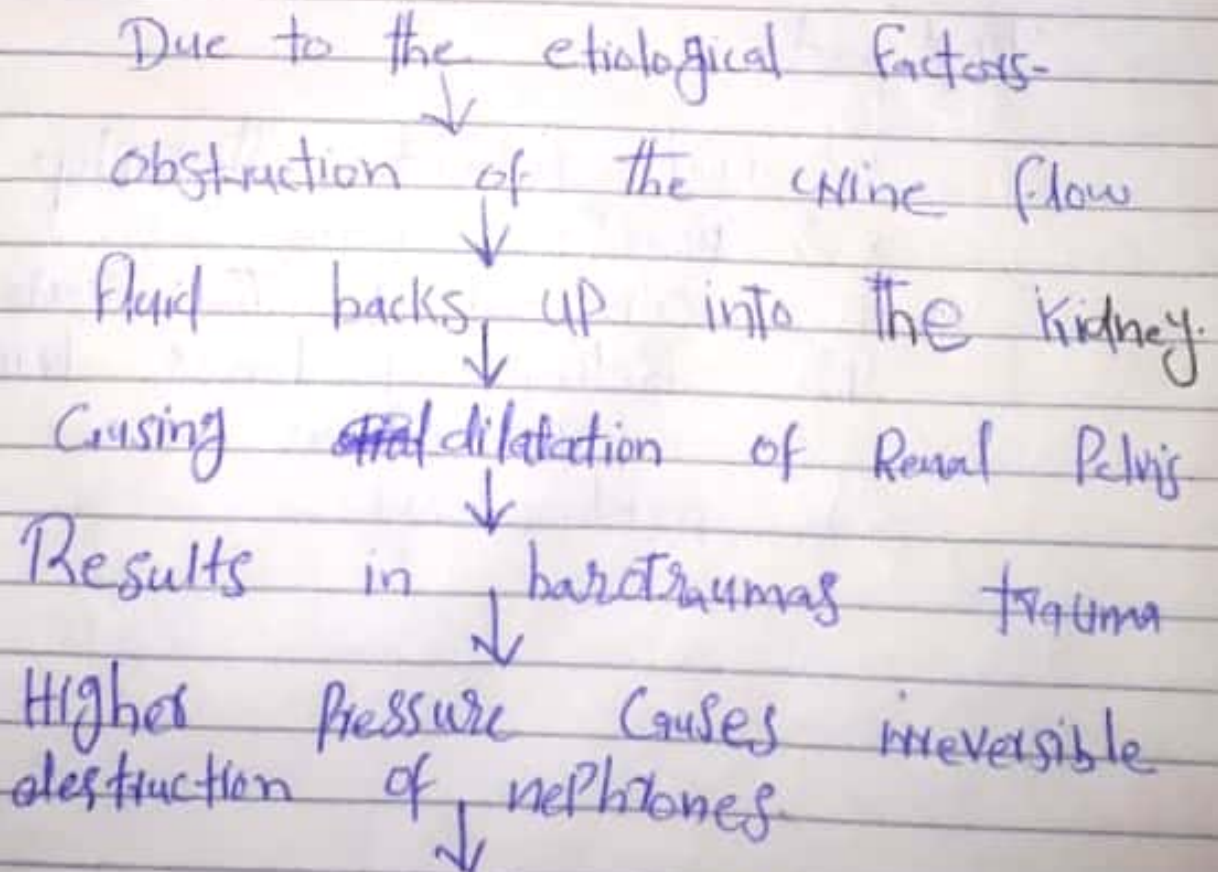
→ Usually due to Partial obstruction to the outflow of urine.

Causes:

- Congenital anomalies
- urinary calculi
- Benign Prostatic hypertrophy.
- Tumors.
- inflammation.
- Sloughed Papillae or blood clots.
- Pregnancy
- Uterine Prolapse and Cystocele
- Functional disorders.

~~Pathology~~

Pathophysiology:-



P.T.O

Hypertrophy of the kidney as a
consequence of increased workload

~~Hypertrophy~~ Hydronephrosis
↓
Renal Failure.

Diagnosis:-

- Signs and Symptoms.
- ultrasound.
 - IVP.
 - Cystoscopy.
 - Cystourethrogram.
 - RCP
 - Dilated empty
 - Isotope renography.
 - Urine culture.

Treatment:-

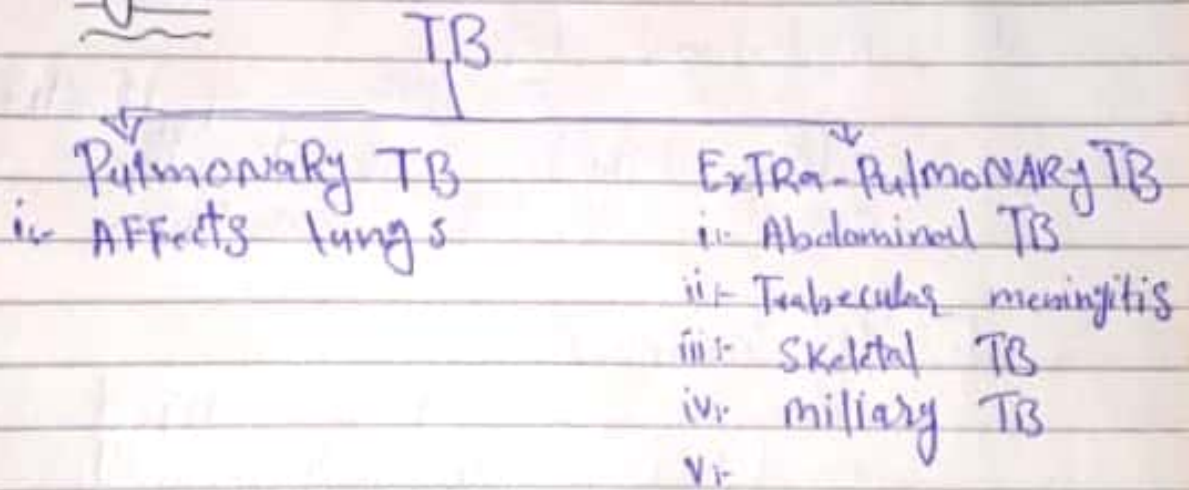
- 1) UTI Antibiotic therapy.
- 2) Prompt drainage.
- 3) Corrected to the cause
- 4) Relief of lower tract obstruction.
- 5) Nephrectomy.

Q 2:- Explain in detail Types/categories and Patho Physiology of tuberculosis

Ans: Tuberculosis

- TB is an infectious disease caused by the bacterium *Mycobacterium tuberculosis* (MTB)
- Generally affect Lungs, but also other part of the body.
- Infections which do not have symptoms in this case it is known as Latent Tuberculosis.

Types:



↓ Pulmonary TB

- When *Mycobacterium tuberculosis* infection involves the lungs.
- Pulmonary TB occurs by breathing in air droplets from a cough or sneeze of an infected person.

ii Extra Pulmonary TB:-

a:- TB Lymphadenitis

most Common Type of extra-pulmonary TB and involves the lymph nodes.

b:- Genitourinary TB

Second most Common ~~part~~ of type of extra-pulmonary TB. It can affect urinary tract, and kidney is most common site.

c:- Abdominal TB

Type of Extra-pulmonary TB which affect the solid organs of the abdomen.

d:- TB meningitis

which affect the membrane surrounding the brain and spinal cord.

e:- Skeletal TB

OR Bone TB which ~~spread~~ spread in bones from lungs.

iii TB can be categorized into:-

- Active TB
- Latent TB
- Miliary TB.

A:- Active TB.
Type in which TB Bacteria rapidly multiplying and invading different organs.

B:- Latent TB.
Type in which TB Bacteria are present in a person in very small amount and do not develop Disease.

C:- Miliary TB.
Rare form of active disease that occurs when TB bacteria found their way into blood stream and spread rapidly all over the body and affect more organs at once.

Patho Physiology:

Primary infection:

↓
Enter of Bacteria Through droplet

↓
Transmitted to alveoli

↓
Deposition and multiplication of micro-organism.

↓
Transfer to other part of Body Through Blood Stream and Phagocytosis.

P.T.O

Q3: How renal stones form and what are different types of renal stones? which radiological procedure is most suitable for diagnosis renal stones.

Ans: Formation of kidney Stone:

- The urinary concentration of crystal-forming substances is high
- The urinary concentration of substance that inhibit stone formation is low.

Types of Renal Stone:

1. Calcium oxalate Stone.
2. Calcium phosphate Stone
3. Struvite Stone
4. Uric acid Stone
5. Cystine Stone

1. Calcium oxalate Stone:

- most common type.
- A urine contains low levels of citrate and high level of uric acid.
- A urine contains low level of calcium oxalate.

→ Linked with Food high level in oxalate. which is in plant and animals.

2. Calcium Phosphate Stone.

→ Caused by abnormalities in the way the urinary system function.

→ Occur simultaneously with Calcium Stone.

3. Struvite Stone.

→ more common in Women.

→ Form due to certain type of infection in urinary tract.

→ grow quickly and become large.

→ If untreated they can cause ~~infection~~ severe urinary tract infection and loss of kidney function.

4. Uric acid Stone.

→ More common in men.

→ occur in those who don't drink enough water or have high protein

→ also occur in those who have family history.

5+ Cystine Stones.

→ Caused by hereditary genetic disorder that can lead to excessive amount of amino acid cystine collection in the urine.

→ occurs in the kidneys, bladder, and ureters.

Radiological Procedure For diagnosis.

1. Ultrasound.
2. Intravenous Pyelogram (IVP)
3. Retrograde Pyelogram.
4. Kidney-ureter-bladder X-Ray.
5. CT Scan.
6. MRI Scan.

Q4: Briefly describe the types, causes, ~~the~~ diagnosis and treatment of goiter.

Ans: Types of Goiter.

1. Colloid Goiter (Endemic)
2. Nontoxic (Sporadic)
3. Toxic Nodular or multinodular Goiter

1. Colloidal Goiter (Endemic)

- develops from the lack of iodines.
- iodines is a mineral essential to the production of thyroid hormones.
- usually live in areas where iodine is scarce.

2. Nontoxic (Spontaneous)

- Cause of Nontoxic goiter is unknown cause by medication like lithium.
- Do not affect production of thyroid hormone.
- they are also benign.

3. Toxic Nodular

- also known as multinodular goiter.
- Type form one or more small nodules
- Nodules produce their own hormone.
- it generally form as an extension of a simple goiter.

Causes:

1. Inflammation

Thyroid inflammation of the gland can cause a goiter.

2. Nodules:

Solid or fluid - contain cysts may appear on the thyroid and cause it to

3. Thyroid Swell. Cancer:

Cancer affect the thyroid, which causes swelling on one side.

4. Pregnancy:

Pregnancy is also cause of goiter.

Diagnosis:

1. Blood Tests:

Blood test can detect changes in hormones and increase production of antibodies.

2. Thyroid Scans:

Scans show size and condition of goiter.

3. Ultrasound:

Produce image of Neck. the size of goiter and whether there are nodules. ultrasound can show change in the nodules.

4. Biopsy:

Taking small samples of thyroid tissue. Samples are sent to laboratory for test.

Treatment:

1. Medications:

(Corticosteroids) to reduce inflammation.

2. Surgery:

(Thyroidectomy) Surgical remove of thyroid.

3. Radiactive iodine:

(RAI) ingested orally and travels to thyroid through blood.

4. Home Care:

may need to increase or decrease iodine intake at home.

Q 5 - write a detail Note on
atelectasis, bronchiectasis and
Pneumonia.

Ans. 1 - Atelectasis -

- Partial or Complete Collapse of lungs
- may involve entire lung a Lob or a segment
- 5 mechanism of atelectasis.

Risk Factor -

Anesthesia. Foreign bodies in the airway. Lung disease.

Symptoms -

Trouble breathing
Pleurisy
Cough
fever.

Obstructive Atelectasis

- most Common Type
- Results from blockage of airway.
- Resorption occurs when an obstruction prevents air from reaching distal airways.
- Consequence of complete obstruction of the Airways.

Non obstructive atelectasis.

1. Passive
2. Compressive
3. Catrization
4. adhesive

1. Passive ATElectasis.

- 2nd most common form of atelectasis.
- Contact b/w parietal and visceral pleura is lost due to pleural effusion or pneumothorax.

2. Compressive atelectasis.

- Due to external compression of lung.
- May be caused by loculated collection of pleural fluid.
- Similar to relaxation atelectasis but collapse is local rather than generalized.

3: Cicatrization Atelectasis:

→ Secondary To Fibrosis of Lung Parenchyma with subsequent Lack of expansion.

4: adhesive atelectasis:

→ Cause by adherence of the alveolar wall surface in the setting of surfactant deficiency.

2: Bronchiectasis:

is the permanent dilation of bronch and bronchioles due to destruction of the muscle and elastic supporting tissue. Resulting from or associated with chronic harassing infection.

Etiology:

→ Long lasting bronchial obstruction. (due to ~~abnormal~~ bronchial tumors or foreign body).
→ ~~congenital~~ Congenital or hereditary condition.

Clinical Manifestations:

- Persistent or recurrent Cough with Purulent Sputum.
- Haemoptysis.
- Dyspnoea, wheezing - widespread bronchiectasis or underlying COPD.
- Episodic Fever.

Diagnosis:

- Clinical
- Radiology: Chest X-Ray
CT Scan
- Sputum culture.
- Lung function.
- Sweat test.
- Bronchoscopy.

Treatment:

- Eliminate Cause
- Improve tracheo bronchial clearance.
- Control infection
- Reverse air flow obstruction.
- Chest Physical Therapy.
- Bronchodilator.
- Antibiotics.

Pneumonia :-

- Pneumonia is an inflammation of the lung's Paranchyma of Infective.
- It is the most common Infectious cause of death
 - It usually characterized by consolidation
 - Consolidation is a pathological process in which the alveoli are filled with a mixture of inflammatory exudate, Bacteria and WBC.

Classification :-

1) Type 1 (Morphological classification)

- Lobar pneumonia
- Bronchopneumonia:-

2) Type 2 (Clinically classification)

- Community-acquired pneumonia.
- Hospital-acquired pneumonia.

⇒ The organisms which caused Lobar pneumonia are:

- Streptococcus pneumonia (More than 90% in cases)
- Staphylococcus aureus
- Gram negative bacteria such as H. Influenza, Klebsiella, pseudomonas, proteous and E. coli

Morphological Stages :->

-> These are four morphological stages in Lobar pneumonia.

- 1) Congestion
- 2) Red hepatization
- 3) Grey hepatization
- 4) Resolution.

Bronchopneumonia :->

-> Bronchopneumonia is infection of the terminal bronchioles that extends into the surrounding alveoli resulting in patchy consolidation of the lung.

-> Chest X-ray for Lobar pneumonia
-> Consolidation combined to one or more lobes of lungs

Clinical diagnosis :->

- > History
- + Signs and symptoms
- + chest X-ray.
- > CT.

Etiological Diagnosis:→

- Gram's Stain and culture of sputum
- Blood culture.
- Polymerase chain reaction.
- Serology
- Bronchoalveolar lavage
- Bronchoscopy.
- Bronchodilator
- Adequate hydration if necessary.
- Chest pain- analgesics.

Complication:→

- possible complications ~~not~~ include.
- Acute respiratory distress syndrome
- Fluid around the lung.
- Lung abscesses
- Respiratory ~~fail~~ failure
- Sepsis, which may lead to organ failure!

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