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Paper: Clinical Medicine.

Question-1

What is hydronephrosis?
write in detail its causes,
pathophysiology, diagnosis
and treatment?

Answer:

Hydronephrosis:

Hydronephrosis is a condition that typically occurs when a kidney swells due to urine failing to properly drain to the bladder. This swelling most commonly affects only one kidney, but it can involve both kidneys.

Causes of Hydronephrosis:

Acute unilateral obstructive uropathy:

This is the sudden development of an obstruction in one of your ureters, which are tubes that connect your kidneys to your bladder.

Kidney stone: The

most common cause for this blockage is a kidney stone but scarring and blood clots can also cause acute unilateral obstructive uropathy.

A blocked ureter cause urine to go back up into the kidney, which causes swelling.

Diagnosed of hydronephrosis:

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getting a diagnosis as early as possible is extremely important. your kidneys could be permanently damaged if your condition is left untreated for too long.

Your doctor will likely begin by getting an overall assessment of your health status and then focus on any urinary symptoms you might have.

Your doctor may use a catheter to drain some of the urine from your bladder.

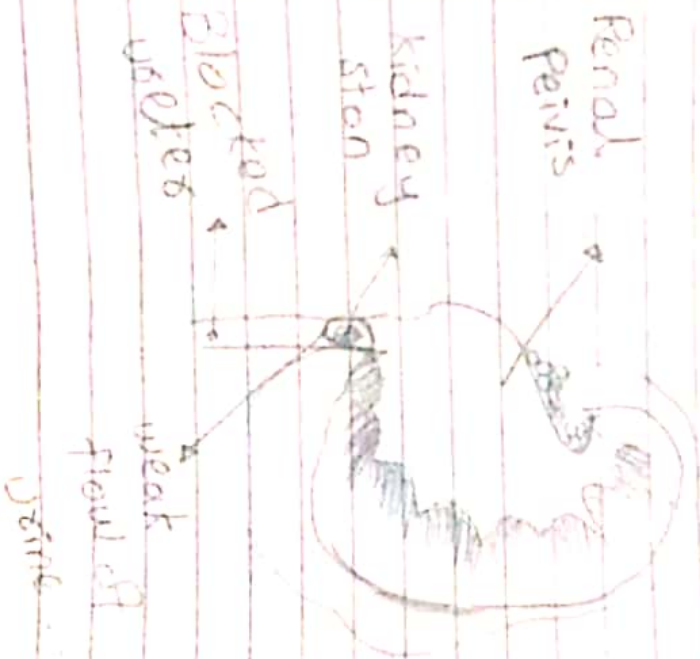
Treatment of hydronephrosis:

Treatment of hydronephrosis primarily focuses on getting rid of whatever is blocking the flow of urine.

The treatment option your doctor chooses for you will depend on the you cause of your obstruction.

Insert a ureteral stent, which is a tube that allows the ureter to drain into the bladder.

Diagram:



Question-2

Explain in detail the types, categories and pathophysiology of tuberculosis?

Answers :

TUBERCULOSIS : Tuberculosis is an infectious disease caused by a bacterium, called *Mycobacterium tuberculosis*.

It often affects the lungs, however, it may involve any organ and may infect anyone at any age.

Tuberculosis is a contagious/infectious disease which means that it spread from person to person, usually through the air, when a person with active disease coughs and sprays the bacteria into the air.

Types of Tuberculosis :

Tuberculosis lymphadenitis :

It is the most common type of extra-pulmonary TB and involves

the lymph nodes. It tends to affect the cervical lymph nodes, which are the lymph nodes in your neck. But any lymph node can be affected.

Genitourinary Tuberculosis:

Genitourinary TB is the second most common type of extrapulmonary TB. It can affect any part of the genitals or urinary tract, but the kidneys are the most common sites. It usually spreads to the areas from the lungs through the blood lymph nodes.

Abdominal Tuberculosis:

It is the type of TB that affects the gut, the peritoneum abdominal lymph nodes, and more rarely, the solid organs in the abdomen (liver, pancreas and spleen).

Tuberculous meningitis or

TB meningitis:

when the membranes surrounding the brain and spinal cord are infected by bacteria.

Skeletal Tuberculosis :

Skeletal TB or bone TB is the TB that spreads to your bones from your lungs or lymph nodes. It can affect any of your bones, including your spine and joints.

Categories of Tuberculosis :

- ⇒ Active TB
- ⇒ Latent TB
- ⇒ Miliary TB

Active Tuberculosis :

Active TB is an illness in which the TB bacteria are rapidly multiplying and invading different organs of the body.

A person with active pulmonary TB disease may spread TB to others by airborne transmission of infectious particles coughed

into the air.
Active TB is contagious and causes symptoms.
The most common form of active TB is lung disease, but it may invade other organs so-called extrapulmonary TB.

Latent Tuberculosis:

Latent TB occurs when a person has the TB bacteria within their body, but the bacteria are present in very small numbers and do not develop disease. They are kept under control by the body's immune system.

Latent TB doesn't cause symptoms and isn't contagious.

People with latent TB have a normal chest X-ray and a negative sputum test. It is often only known that someone has latent TB because they have had a TB test, such as the TB skin test.

However, there is an ongoing risk that the latent

Appearance similar to millet seeds - thus the term "miliary tuberculosis".
This form of TB can be rapidly fatal.

PATHOPHYSIOLOGY of

Tuberculosis :

- (Initial infection as primary infection).
↓
- Entry of micro organism through droplet nuclei.
↓
- Deposition and multiplication of bacteria.
↓
- Bacilli are also transported to other parts of the body via blood stream and phagocytosis by neutrophils and macrophages.
↓
- Mycobacterium.
↓
- Pulmonary alveoli
↓
- Immune system has lodged in (Alveolar Macrophages).
↓

infection may turn into active disease. The risk is increased by other illnesses such as HIV or medications which compromise the immune system.

Miliary Tuberculosis:

Miliary TB is a rare form of active disease that occurs when TB bacteria find their way into the bloodstream. In this form the bacteria quickly spread all over the body in tiny nodules and affect multiple organs at once.

Miliary TB causes general active TB symptoms in addition to other symptoms, depending on the body parts involved. For example if your bone marrow is affected you may have a low red blood cell count or a rash.

Its name comes from distinctive pattern seen on a chest radiograph of many tiny spots distributed throughout the lung fields with the

Question-3

How are renal stones formed and what are different type of renal stones? which radiological procedure is most suitable for diagnosing renal stones?

Answer :

Renal stones formed when urine contains more crystal-forming substance such as calcium, oxalate and Uric acids then the fluid in your urine can dilute. At the same time your ~~urine~~ urine may lack substances that prevent crystals from sticking together creating an ideal environment for kidney stones to form.

Types of Renal Stones :

Detects presence of pathogen and engulph the bacteria.

↓
Mycobacterium bacteria inhibits the Macrophages (phagosome + lysosome) to form phagolysosome and remains protected inside the macrophages.

↓
Starts replication inside macrophages

↓
Primary infection occurs.

↓
Cell mediated immunity gets activated, surrounds the cell to form granuloma.

↓
leads to necrosis of tissues at infection site.

↓
Involve nearby lymph nodes.

↓
Calcification of case complex.

Calcium Oxalate Stones :

The most common type of kidney stone is a calcium oxalate stone. These result when the urine contains low levels of citrate and high levels of calcium and either oxalate or uric acid. Calcium oxalate stones are linked with foods high in oxalate, which is naturally linked occurring substance in plants and animals. These include beets, black tea and spinach.

Calcium phosphate Stones :

Calcium phosphate kidney stones are caused by abnormalities in the way the urinary system functions. Your doctor may order a series of blood and urine tests to determine whether any urinary or kidney problems could be causing this type of stone, which often

history of this type of kidney stone, or in those who've had chemothecopy.

Cystine Stones :

Cystine stones are caused by a rare, inherited genetic disorder called cystinuria that can lead to excessive amounts of amino acid cystine collecting in the urine. This can result in formation of stones in the kidneys, bladder and ureters, which transport urine from the kidneys to the bladder.

Diagnosing Renal

Stones :

1. **Blood Tests :** During your initial exam your doctor may collect a small amount of blood in order to assess your kidney function, look for signs of infection, and test for factors that can contribute to formation of kidney

occurs simultaneously with calcium oxalate stones.

Struvite Stones:

More common in women
struvite stones form as
a result of certain type
of urinary tract infections.
These stones tend to grow
quickly and become
large, sometimes occupying
the entire kidney. Left
untreated they can
cause frequent and
sometimes severe urinary
tract infection and
loss of kidney function.

Uric Acid Stones:

Most common in men, uric
acid stones tend to occur
in people who don't
drink enough water or
have a diet high in
animal protein. They
are also more likely
to occur in people who
have gout or a family

stones, such as high calcium level, parathyroid hormone, and uric acid.

2. Urine Tests: Your doctor may analyze a sample of your ~~urine~~ urine in order to check for crystals which can lead to the formation of kidney stones and order a urine culture to determine if you have a urinary tract infection.

3. Ultrasound: An ultrasound scan to evaluate your kidneys, bladder and ureters, which are the tubes that carry urine from the kidneys to the bladder. This helps your doctor to check for stones that haven't passed to monitor the growth of stone and to screen for recurrence. In this fact test a handheld device called a transducer is placed on the abdomen and used to produce sound waves that create

usually live in areas where iodine is scarce.

Nontoxic (sporadic):

This cause usually be caused through if may lithium. Lithium is used such as mood disorders don't affect thyroid function is healthy.

Toxic Nodular or Multinodular

Goiter :

This type of goiter forms one or more small nodules as it enlarges. nodules produce their own thyroid hormone causing hyperthyroidism. It generally forms as an extension of a simple goiter.

CASES of goiter :

Iodine deficiency is the main cause of goiter. Iodine is essential for helping your thyroid produce thyroid hormones.

Grave's Disease :

Occurs when your thyroid produces more thyroid hormone than normal, which is known as hyperthyroidism. The excessive production of hormones makes the thyroid increase in size.

Hashimoto's Disease :

When you have Hashimoto's disease the thyroid doesn't produce enough thyroid hormone causing hypothyroidism. The low thyroid hormone causes the pituitary gland to make more thyroid-stimulating hormone which causes the thyroid to swell.

images of the pelvic organs -

- 4. Intravenous pyelogram
- 5. Retrograde pyelogram

Question-4

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

Answer:

Goiter: A condition that increase the size of thyroid is called a goiter.

Types of Goiter:

Colloid Goiter (Endemic)

A Colloid goiter develops from lack of iodine a mineral essential to the production of thyroid hormones. People who get this type of goiter

Inflammation: Some people develop thyroiditis an inflammation of the thyroid that can cause a goiter.

Nodules: Solid or fluid-containing cysts may appear on the thyroid and cause to swell. These nodules are often noncancerous.

Thyroid Cancer: Cancer may affect the thyroid, which causes swelling on one side of the gland. Thyroid cancer is not as common as the formation of benign nodules.

DIAGNOSIS

Blood tests: Blood tests can detect changes in hormone levels and can increase production of antibodies, which are produced in response to

Symptoms of Bronchiectasis:

- Coughing up yellow or green mucus daily.
 - Shortness of breath.
 - Fatigue, feeling run-down or tired.
 - Fevers and/or chills.
-

fluid, prolonged bed rest.

Symptoms:

Trouble breathing.
Pleurisy.
Cough.
fever.

Obstructive Atelectasis:

- Most common type.
- Results from blockage of airway.
- Respiration atelectasis occurs when an obstruction prevents air from reaching distal airway.

Non obstructive Atelectasis:

- 1) Passive.
- 2) Compressive.
- 3) Contracture.
- 4) Adhesive.

Pneumonia:

Pneumonia is an inflammation of the lung parenchyma

respond to medication therapy.

Radioactive Iodine: In people with toxic multinodular goiters. RAI may be necessary. The RAI is ingested orally and then travels to your thyroid through your blood. When it destroys the excess tissue.

Home Care: Depending on your type of goiter you may need to increase or decrease your iodine intake at home. If a goiter is a small doesn't cause any problem you may not require any treatment at all.

- (i.e. alveoli rather than the bronchi) -
- it is the most common infection cause of death.

Symptoms of Pneumonia:

Cough

Fever

Shortness of breath.

Rapid, shallow breathing.

Loss of appetite.

Bronchiectasis:

Bronchiectasis is the permanent dilation of bronchi and bronchioles due to destruction of elastic supporting tissue, resulting from chronic necrotizing infection.

Question. 5

Write a detail note on bronchiectasis, atelectasis and pneumonia?

Answer.

Atelectasis :

- Partial or complete of lungs is called atelectasis.
- May involve entire lung, a lobe, or segment or be subsegmental.
- There are 5 mechanisms of atelectasis.
- obstructive.
- Non obstructive.

Risk factors.

Anesthesia, foreign bodies in the airway, lung disease, mucus plugging of the airway, pressure caused by mass or

an infection or injury.

Thyroid Scan: These scan show the size and condition of your goiter.

Ultrasound: An ultrasound produces images of your neck the size of your goiter and whether there are nodules. Over time, an ultrasound can show changes in those nodules and the goiter.

TREATMENT of goiter.

Medications. If you have hypothyroidism or hyperthyroidism medications to treat these conditions may be enough to shrink a goiter. Medications to reduce your inflammation may be used if you have thyroiditis.

Surgeries: Surgical removal of your thyroid known as thyroidectomy is an option if your goiter is too large or doesn't