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Paper # Clinical
Medicine

Submitted to

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Q No (1)

Hydronephrosis

Definition:-

Hydronephrosis is the swelling of kidney due to build up of urine.

→ It occurs due to when urine cannot pass out from kidney to bladder from blockage or obstruction.

Explanation:-

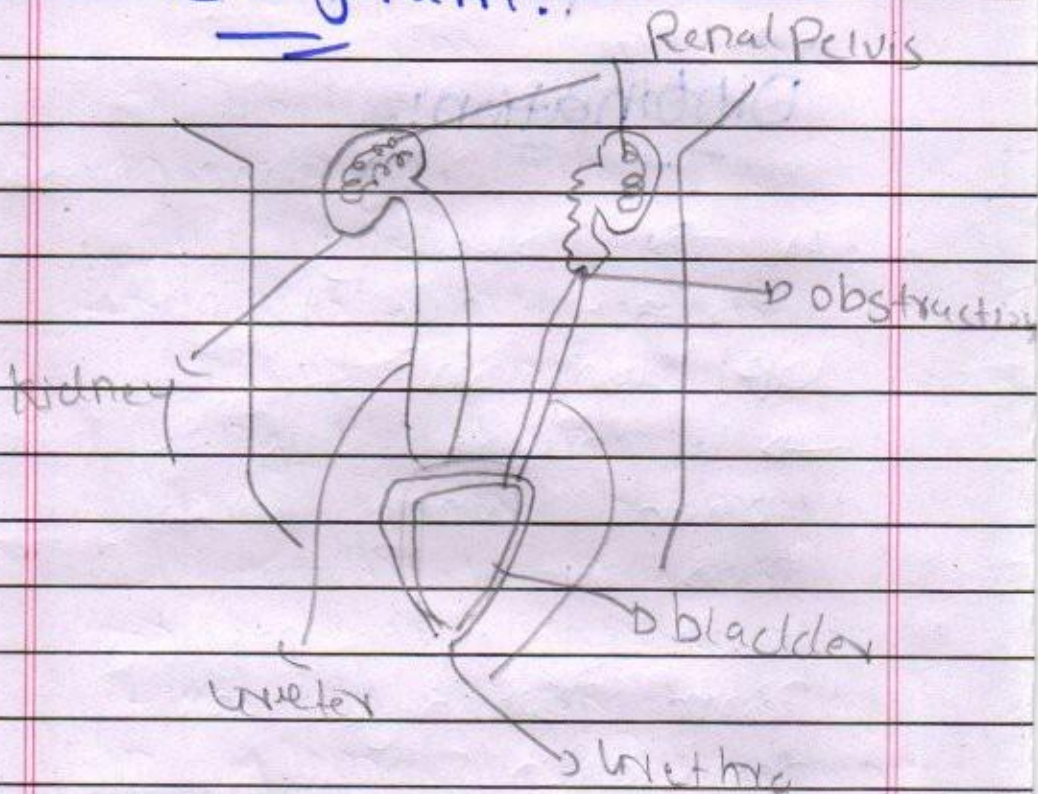
→ Hydronephrosis occurs in one or both kidneys.

→ In this type of hydronephrosis disease the kidney starts swelling.

→ Usually due to obstruction to out

Flow of urine

Diagram:



Causes:

The cause of hydronephrosis are following

- 1) Acute unilateral obstructive uropathy

Development of obstruction in one of your ureters which are tube that connect kidney to bladder

2) Kidney Stone

Kidney Stone is a common cause of blockage

3)

Enlarged prostate gland :-

→ which can be due to benign prostate hyperplasia or prostate (BPH)

(4) Tumor near ureter

(5) Pregnancy

Patho Physiology:-

→ Hydronephrosis can result from anatomic or functional process interrupting the flow of urine.

→ This interruption occurs anywhere along the urinary tract from kidney to urethral meatus.

→ Urethral pressure leads to marked changes in glomerular filtration. Dilatation of renal pelvis or calyces.

Types of Hydronephrosis:-

- Renal type
- Pelvic type
- Pelvic renal type

In the Pelvicrenal type
the Pelvis and Calyces
are dilated equally.

Diagnosis:-

- The following diagnosis
are given below.
- Ultra Sound
- RGP
- Cystoscopy
- Urine Culture
- Delayed empty
- Isotope renography
- IUV

Treatment:-

The treatment
of hydro nephrosis depends
upon the cause,
site, duration of
kidney damage

- U.T.I Antibiotic therapy
- Promot drainage
- Relief of lower
tract obstruction

- Corrected to Cause
- Insert Nephrostomy tube that allow the block urine to drain through back
- Insert a urethral stent which is a tube that allows the ureter to drain into bladder.



Insert stent

Q No 2:-

Tuberculosis (TB)

Ans:-

Definition:-

A highly contagious infection caused by the bacterium called Mycobacterium tuberculosis and Mycobacterium bovis.

OR

An infectious bacterial disease that is characterized by the growth of nodules (tubercle) in the tissue, especially the lungs. Tubercle are the characteristic findings in TB.

→ It can spread to other parts of body, like your brain and spine

→ It may be involve any organ and may infect anyone at any age.

spread:-

Tuberculosis caused by bacteria that spread through the air, just like cold or the flu. When someone who has it coughs, sneezes, talks, laughs, or sings, tiny droplets which contain the germ are released.

→ If you breathe in this germ you can get it.

→ It cannot spread through shaking hands or sharing food or drink.

classification of

TB:-

TB

Pulmonary TB

(Which affect Lungs)

Abdominal TB

Tubercular meningitis

- (iii) Skeletal TB
- (iv) Military TB
- (v) other less common form -

Tuberculosis Types:-

A TB infection does not mean that you will sick.

There are three forms of the disease.

(i) Active TB

(ii) Latent TB

(iii) Military TB

(i) Active TB:-

it is a ~~that~~ illness in the which

The bacteria ~~SPY~~ multiply rapidly and can make you sick. And cause symptom.

→ People with active bacterial TB can spread the infection.

→ It mostly affect the lungs. but also invade the other organ.

→ The risk is higher for weak immune system

→ older adults and young children.

LATENT TB :-

It is a type of TB in which a person can have TB bacteria ~~but~~ in their body but never develop symptom.

→ The bacteria present in the body but in small quantity. which

which does not develop a disease. Because they are under control of body immune system.

→ There is no risk of passing the on latent infection to another person.

→ When a person have HIV or other disease then there is a risk that latent TB convert into Active TB.

Miliary TB:

it is a rare form of active disease but however sometimes the bacteria spread get into your blood and spread throughout your body and grow in one

of several organ. This is called miliary TB.

→ it cause general active TB symptom in addition to other symptom depends upon the involvement body parts.

→ their names - comes from a distinctive pattern seen on a chest radiograph of many tiny spot throughout the lung field which appear like a miliary seed.

→ it can be fatal

Symptom ob TB

Even it depends upon type of TB.

- fever
- chills
- Night Sweet

- Cough
- Loss of APPetite
- Weight loss
- Blood in the sputum
- Loss of energy

this is for latent symptoms
it has usually TB symptoms
if it is active then

- Bad cough
- Pain in the chest
- Coughin of Blood

if there is extrapulmonary
TB then there is
other symptoms.

Patho physiology:-

Primary infection

Pathogenesis:-

First of all bacteria enter
through droplet nuclei



Then bacteria is transmitted
to the alveoli (ANSAC)
through air ways.



↓
then they deposit and multiply there.

↓
it a Bacilli bacteria so it also transport to other parts of body via blood stream and phagocytosis by neutrophils and macrophages.

Mycobacterium enter into pulmonary alveoli which is detected by Alveolar macrophage.

which engulf the bacteria. The microbacterium inhibits the macrophages to form phagolysosome and remain protected inside the macrophage.

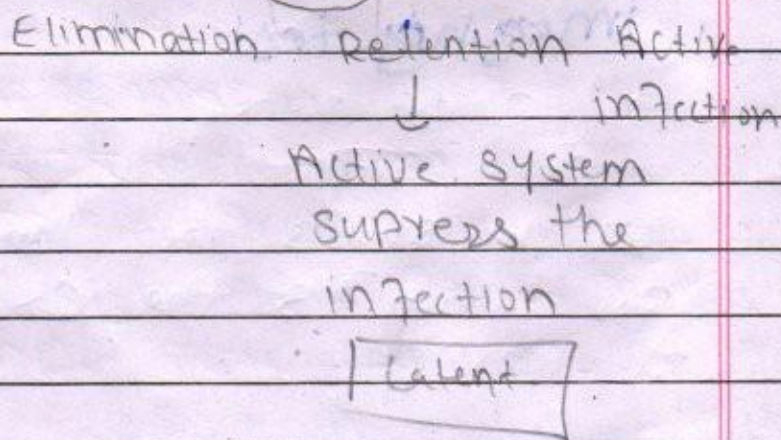
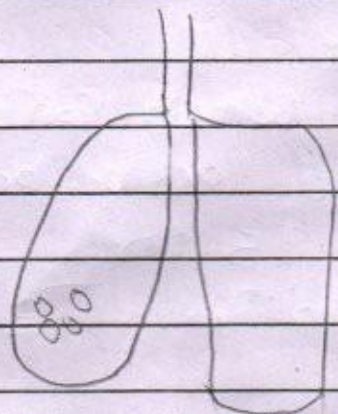
→ So it start replication inside the macrophage so primary infection starts.

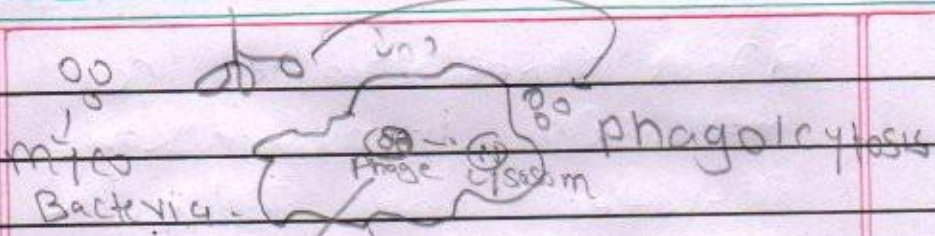
After three weeks cell mediated immunity get activated and forms granuloma. Which leads to Necrosis at infection site.

it also involve the lymph nodes.

And form calcification of case complex (Latent TB)

Diagram:-





Alveolar Macrophage
But in TB No Phagosome
will be formed.

Diagnosis:

There are different test which is used TB.

Blood test

which confirm

latent and active bacteria

↳ TSPOT TB test

↳ Quantiferon TB

imaging test

Chest x-ray

CT - scan

which shows the lung

for latent TB the CXR

is normal.

Sputum test:-

Sputum is a mucus which comes from cough.

Sample taken from it which shows TB-

Mantoux tuberculin

Skin test:-

It is a test in which some dead bacteria enter into skin through injection when it swells it shows TB.

Treatment:-

Antibiotic are the best treatment for both latent and active TB

- Isoniazid
- Rifampin
- Streptomycin

It is the first line drugs

- It is given for six months

MDR case → 18 to 24 months

with ofloxacin and other antibiotic

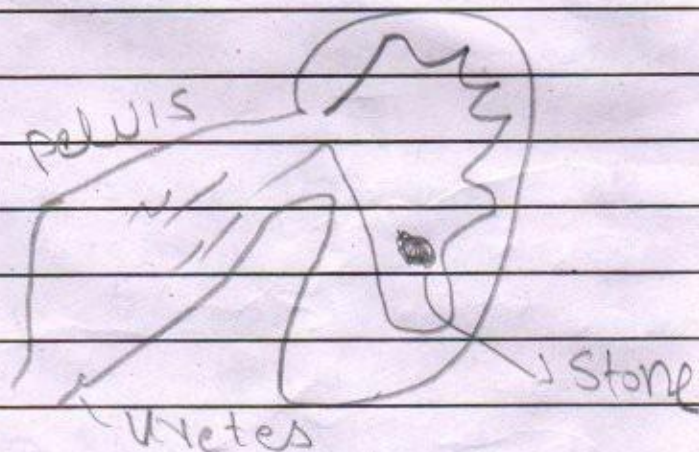
Q No 3

Renal stone

→ It is also called Nephrolithiasis

→ It is a condition in which hard masses form within the urinary tract.

→ It is a hard crystalline mineral formed within the kidney or urinary tract



Formation of kidney Stone :-

The urinary concentration of crystal forming substance like

Calcium oxalate, uric acid is high

→ fluid in your urine can dilute

→ At the same time urine may lack substance that prevent crystal from sticking together creating

ideal environment for kidney stone

→ kidney stone is approximately 13% for men and for women is 3%

→ In adult with kidney

is approximately 80% consist of Calcium oxalate or Calcium Phosphate

Types of Renal Stone:

- (1) Calcium oxalate
- (2) Calcium phosphate
- (3) Struvite Stone
- (4) Uric acid stone
- (5) Crystalline Stone

(1) Calcium oxalate

- Most common type of kidney stone
- These result where low level of citrate and high level of Calcium.
- Either oxalate or uric acid
- It link with food high in oxalate

Good inclusions

Beets, black tea, Chocolate etc -

2, Calcium Phosphate:-

→ it is caused by abnormalities in way of urinary system function.

→ It simultaneously with calcium oxalate stones

3, Struvite Stones:-

→ It is more common in women

→ when Struvite stone form as result of certain type of urinary tract infection.

→ These stone grows quickly

→ LA become large

→ some time Loss of kidney function

4, Uric acid Stone:

→ More Common in men

→ It occurs in those people who don't drink enough water

→ or it use high quantity of protein

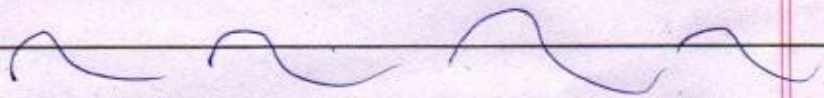
→ it occurs in people who have family history of this type of kidney stone.

5, Cystine Stone:

It is caused by hereditary genetic disorder called cystinuria

That can lead to
excessive of amino
acid Cystine.

collecting in urine
→ Result formation
of stone in kidney bladder,
ureter.



Q.3.
b

Diagnosis of Renal Stone from Radiological Procedure:

Ans The following
Radiological Procedure
are the most suitable
for diagnosis of Renal
stone.

CT Scan:-

CT Scan
is the best radiological
procedure to diagnosis
Renal Stone.

→ In CT Scan the
doctor may look
for stone in kidney
to determine their
size and exact
location.

→ And to elevate the anatomy of your urinary tract

(B) MRI Scan:

MRI is also the best to locate the stone in the kidney.

→ In MRI magnetic waves are used to create computerized two or three dimensional images.

→ In this procedure no radiation is used and safely diagnose the kidney in pregnant women.

→ And it is not typically used to elevate to kidney stone.

Q4:- Goiter

Ans:-

Goiter:-

- it is the swelling of Neck resulting from enlargement of the thyroid gland

→ A butterfly shape gland found in the neck which is called thyroid gland.

→ Thyroid gland secret hormones T_4 (tetraiodothyronine) and T_3 (triiodothyronine)

→ These hormone regulate the metabolic function of the body, (food into energy).

→ A condition that increase the size of

of thyroid gland. • • •

Called: Goiter.

→ Goiter can develop both in male and female but are more common in female.

Types of Goiter:-

There are many types of Goiter because of many different causes.

Colloidal Goiter (Endemic):-

This type of Goiter may develop to those who are iodine deficient, iodine is an important mineral for production of thyroid hormone.

Colloidal goiter can be seen in those who live in areas where

Iodine is not in present in proper amount.

→ If the iodine is deficient the thyroid gland stimulates and adapts to increase cells size and number due to increase work load.

Non toxic Goiter (Sporadic):

This type of Goiter is developed with unknown cause, the thyroid secretion and function is normal and healthy but some time medication like lithium can cause of non toxic Goiter.

Lithium is used to treat mood disorder.

- The nontoxic goiter is benign in nature
- The production hormones are also normal

Toxic Nature of

Multinodular Goiter:-

In this type of goiter one or more nodules are formed

- Each nodule forms and secret their own hormones in excess amount, causing hyperthyroidism
- It is generally formed as an extension of a simple goiter

Causes of Goiter:

Iodine: -

The deficiency of iodine caused Goiter because iodine is the mineral to help thyroid gland in producing thyroid hormones.

When iodine is not in proper amount. Its deficiency stimulate the thyroid stimulate the thyroid gland to grow larger in size.

Inflammation

When the thyroiditis develop that can cause goiter.

Noctules:-

A noncancerous solid or fluid containing cyst may develop on thyroid and cause it to swell

Thyroid Cancer:-

Malignant tumor develop one side of the thyroid gland and cause it to swell but it is not common as benign tumor

Pregnancy:-

During pregnancy some time iodine are deficient so it cause thyroid Croiter

Symptom:

Noticeable

Swelling in your
Neck

→ Dysphagia, Dysphnea

→ Coughing

→ Dizziness when

you rise your arm
above your head

→ hoarseness in your
voice.

Diagnosis:

The
doctor check for
neck swelling

Blood test:

Hormonal
changes detected and
increase in number of
antibody diagnose
goiter.

Thyroid scan:

it determine
the size of gland

Ultra Sound :-
 it determine size of Goiter and nodules with images after follow up.

Biopsy :-
 Small pieces of tissue are taken ~~from~~ for examination in lab.

Treatment :-
 Treatment depends upon the type, size and symptom of Goiter.

Medication :-
 For both hypothyroidism and hyperthyroidism medication are prescribe by a doctor to shrink Goiter. Corticosteroid are given to reduce inflammation.

Surgery:-

Thyroidectomy means (removal of thyroid) are performed if not treated with medicine.

Radioactive Iodine:-

These ^{131}I destroy the tissue in those who have multinodular goiter.

Home Care:-

• increase or decrease iodine intake accordingly.

—————+—————+—————

Q No (5)

Ans

Atelectasis:-

Definition:-

refers either incomplete expansion of lung

Neonatal atelectasis

Collapse of previously inflated lung producing areas of relatively airless pulmonary parenchyma.

Types of atelectasis:-

→ on the basis of underlying mechanism and distribution of alveolar collapse atelectasis is classified

into three form-

(1) Respiration:-

(2) Compression

(3) Contraction

Symptom of
Atelectasis:-

→ fever

→ Coughing

→ Breathing difficulty

→ Chest Pain

Risk Factor

foreign bodies in
air way

→ Lung disease

→ mucous plugging

of airway pressure

cause by mass of

fluid

→ Anesthesia

→ Prolonged Bed rest

Obstruction of

Atelactasis:-

→ it is the most common type.

→ which is a result of blockage of airways

→ It prevents air reaching distal airways

Non obstructive atelactasis:-

→ It is passive

→ Compressive

→ Caterization

→ Adhesive

Radiographic pattern of atelectasis:-

1) Right upper lobe atelectasis

- shift of the minor fissure superiorly
- shift of trachea towards side of collapse towards side.
- S-sign of Golden
- obstruction of bronchus

2) Right middle lobe Atelectasis:

- Silhouettes the right heart border of frontal view
- Elevation of diaphragm
- ~~Elevation~~
- density overlying the heart on lateral view

3) Right lower lobe

Atelectasis

→ Shift of major
down

→ Shift of Heart to
right.

Elevation of right
hemi diaphragm

(4) Left Upper lobe Atelectasis:

→ Hazy opacity
around left hilum

→ Elevation of left
hemi diaphragm

→ Shift to right
structure to left

Treatment:

Breathing or Coughing
Exercise

→ inhaled medication

→ surgery.

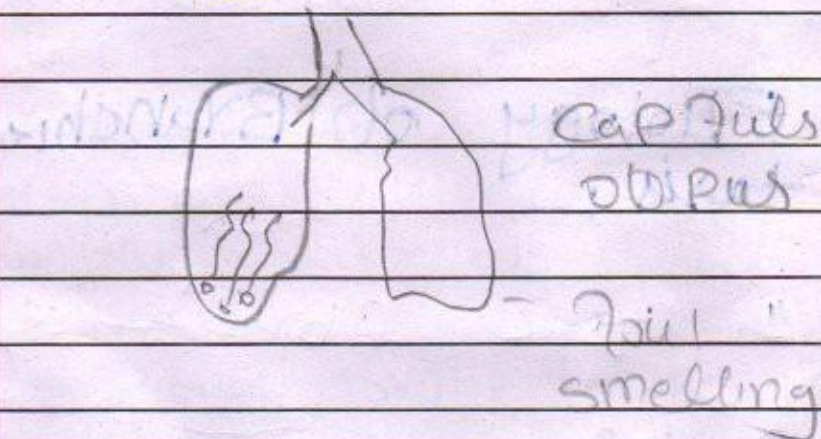
(2) Bronchiectasis:-

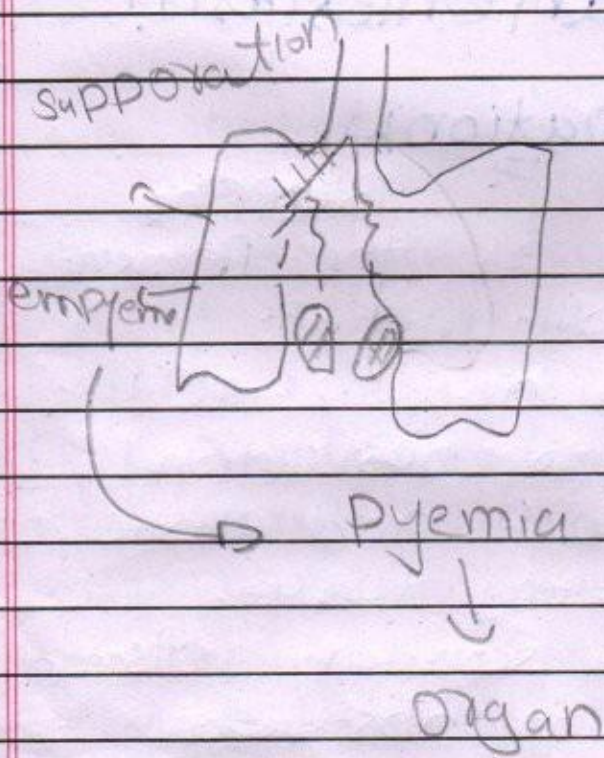
Dibbination!-

Bronchiectasis is the permanent dilatation of bronchi and bronchite due to obstruction of muscle and elastic supporting tissue.

→ It is secondary disease due to obstruction.

Diagram!-





Brain abscess

ETiology of Branchitis
taxis :-

(1) Cystic fibrosis (CF)

(2) Infection

→ TB

→ Severe Pneumonia

★ *Bordetella pertussis*

→ Immotile Ciliary
Syndrome: Kartagener

(2) ABPA → Airway



mucus
Impaction

(3) focal bronchial
obstruction

Diagnosis Branchitis:-

→ Chest x-ray

→ CT scan

→ Sputum culture

→ Pulmonary Function
Test

→ Purified Protein
derivation (PPD)-

Treatment:

- Antibiotics to treat and prevent infection
- Pulmonary Rehabilitation
- Broncho dilators
- Ventilation

(3) Pneumonia:

Definition:

Pneumonia is the inflammation of Lung Parenchyma

- Alveoli rather than bronchi
- it is most common infection

it is usually characterized by consolidation

Classification of Pneumonia

(b) Type 1

- morphological classification
- Broncho pneumonia
- Lobar pneumonia

Type 2

- clinically classification
- Community acquired pneumonia (CAP)

— morphological

Stages:-

four morphological stages of lobar pneumonia

- (1) Congestion
- (2) Red hepatization

3) Resolution

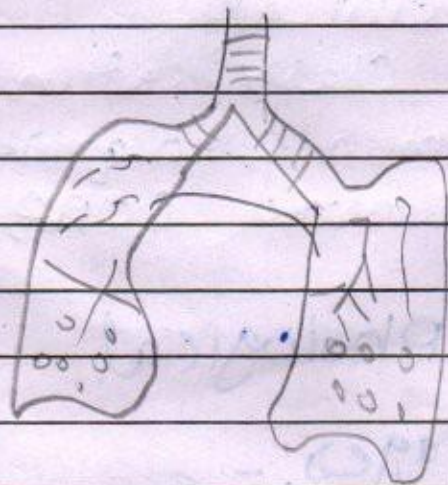
4) Grey hepatization

Broncho pneumonia:

It is the infection
of terminal bronchi

→ extend surrounding
alveoli

→ Reduce consolidation
of lung

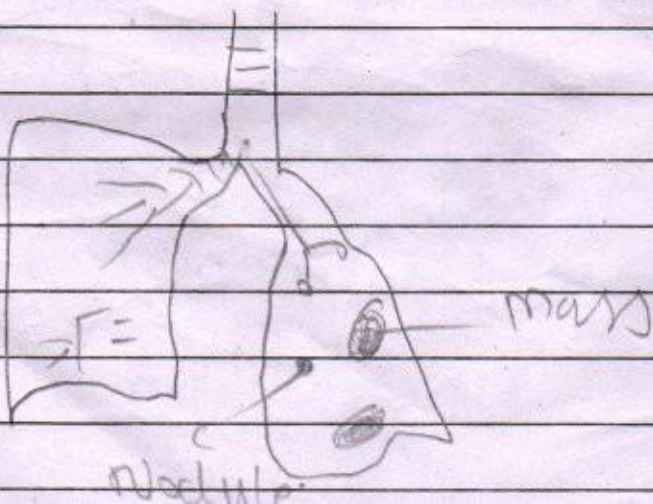


Complication:-

- Acute Respiratory distress syndrome
- Pleural effusion
- Lung abscesses
- Sepsis

Diagnosis:-

- Sign and symptom
- History
- CXR
- CT scan
- Serology
- Bronchoscopy
- Blood culture



Treatment of Pneumonia:-

→ Treatment of pneumonia involves curing that infection and preventing complication.

→ Antibiotics
To treat bacterial pneumonia

→ Cough medicine

→ Fever Reducer

→ Pain killer

~ ~ ~
The end
~ ~ ~