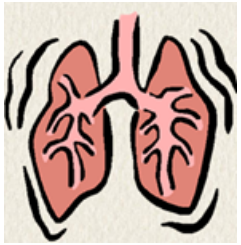
Pediatric Respiratory cases

Dr Enas Al Zayadneh

Pediatric Pulmonologist

Case 1



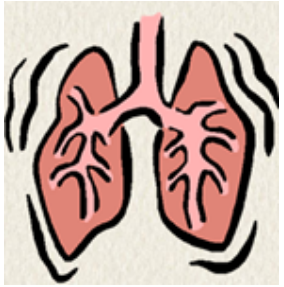
Hx

Mohammad ,

4 month old infant ,presented with cough ,wheeze for 3 days .

Hx of URTI 2 days prior to onset of symptoms .

Question 1



1-What are important questions you should ask in history ?

Mention anything relevant in :HOI,ROS,Past medical ,Birth ,Social , Vaccination, drug hx

Q 1: Answer and discussion

See notes below

Question 2

-What are important findings you should look for in Physical Examination ?

Please observe the findings in video below

https://www.youtube.com/watch?v=QNrsjDzD0QM-

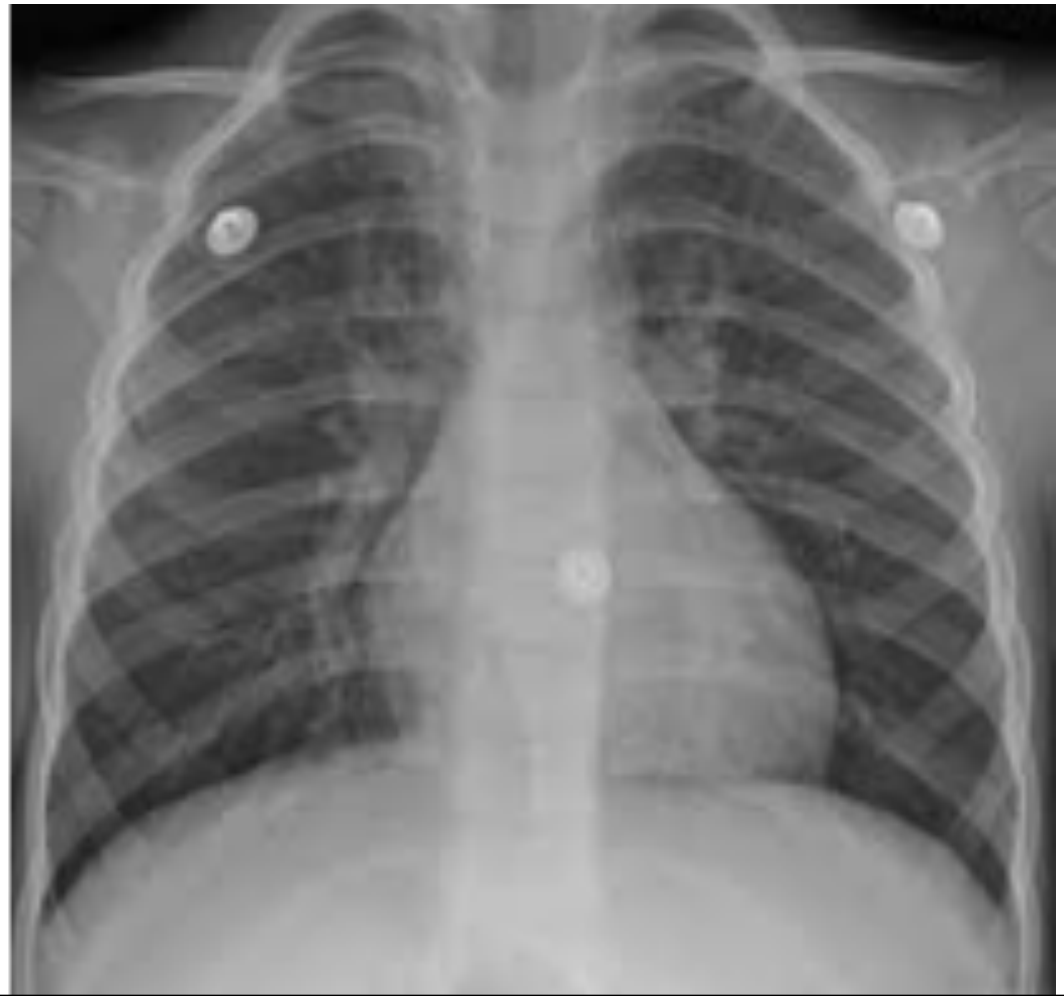
Kindly 0bserve notes below

Question 3

What important investigations should be performed for this child ?

Kindly observe notes below

Q 4 :what is your interpretation ?



What is your DDx
likely diagnosis

Acute viral bronchiolitis

Viral bronchopneumonia

Bacterial pneumonia

Reactive airway disease

Aspiration Pneumonia

What is your diagnosis ?

Acute viral bronchiolitis

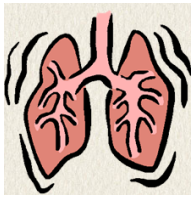
ACUTE Viral BRONCHIOLITIS

- Common disease of the lower respiratory tracr in infants.usually most cases < 2 years.
- Inflammatory obstruction of small airways.
- Severe disease more in infants 1-3 months of age.
- Seasonal peak in winter-early spring.
- Most common virus ; RSV

Treatment

- Primarily supportive
- Hospitalization ,for children with respiratory distress
- If hypoxic (cool humidified oxygen).child sitting with head and chest elevated 30 degree angle with neck extended .
- Hydration : IVF , NG feeds
- Symptomatic Tx : nebulization with Normal saline/Hypertonic saline
- If worsening respiratory distress,persistent hypoxemia ;consider positive pressure ventilation CPAP
- For pending respiratory failure,respiratory failure with acidosis m apnea : consider intuabtion and assisted ventilation

Case 2



Hx :

6 years old ,previously healthy .

Presented to clinic with **fever** for 5 days, reaching **39.5** C.

Associated with cough intermittent.

His mother noted **rapid breathing** and dyspnea worsening with time .Had hx of URTI 1 week ago.

His appetite and activity decreased.Vomited twice

P/E :

General : looks unwell, has increased WOB .(RR 40 b/m,PR 110 ,temp 39).

subcostal and intercostal retractions .

Chest :

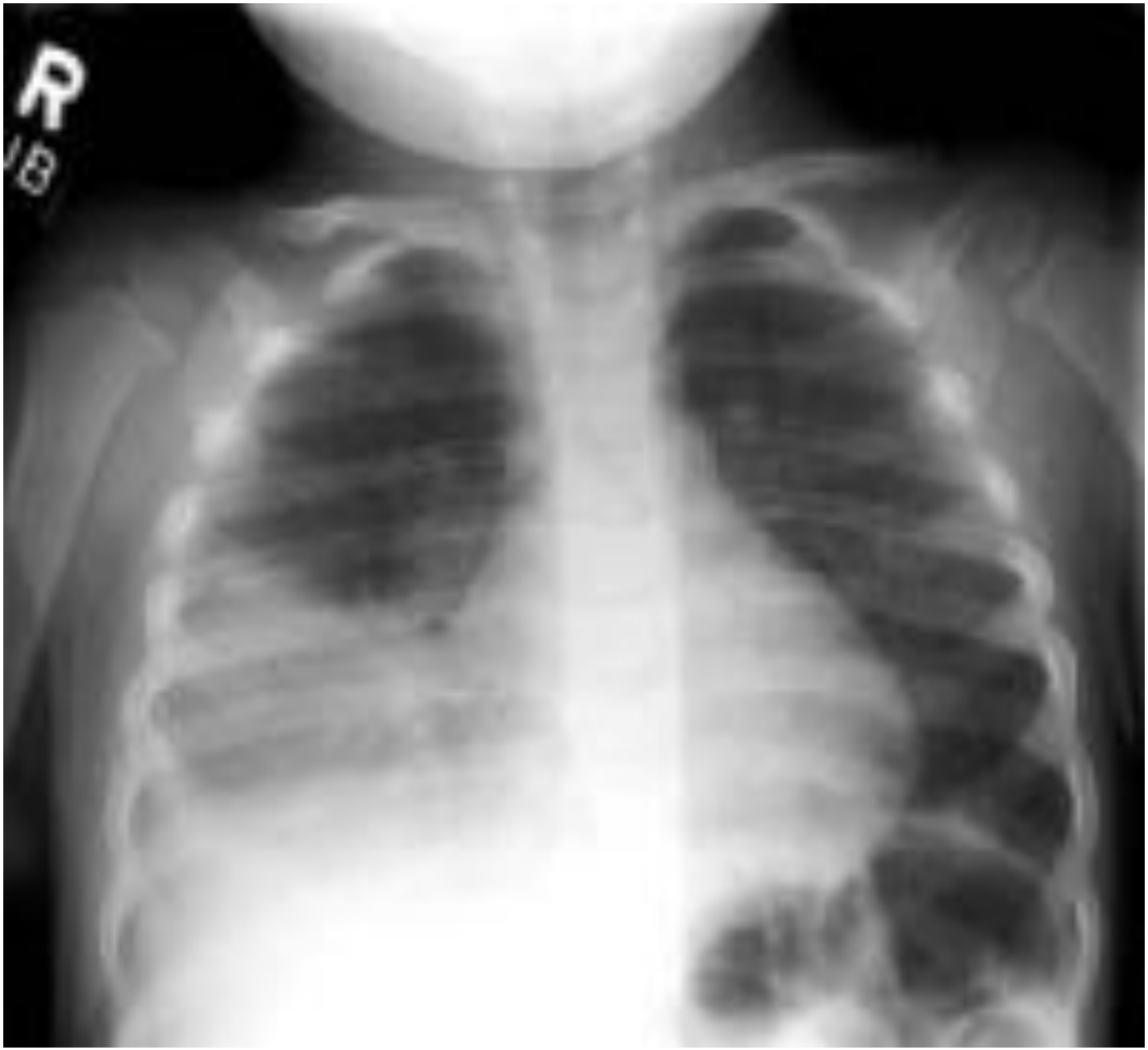
Auscultation : decreased air entry on Rt lower side.Bronchial breathing ,increased tactile vocal fremitus ,few inspiratory crackles Rt side.

Percussion : : dull to percussion

What are Clinical Investigations needed ?

CXR

CBC ,Blood culture ,inflammatory markers ,…etc


R

What is your diagnosis ?

Pneumonia

specific : (lobar ,bacterial)

Pneumonia

Definition

Inflammation of the parynchyma of the lungs.
(alveoli and terminal airspaces in response to invasion by an infectious agent introduced into the lungs through hematogenous spread or inhalation)

Causes :

Infectious ,mostly (Strept Pneumonia ,staph aureus , Mycoplasma p.
Noninfectious :

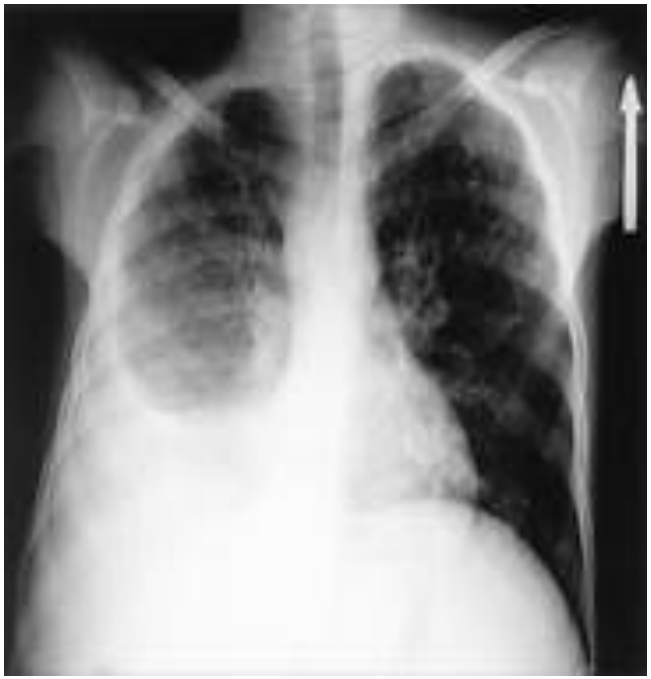
- **aspiration of food or gastric juice**
- **hypersensitivity reactions**
- **foreign bodies**
- **Hydrocarbons and lipoid substances**
- **radiation induced pneumonitis**

COMPLICATIONS

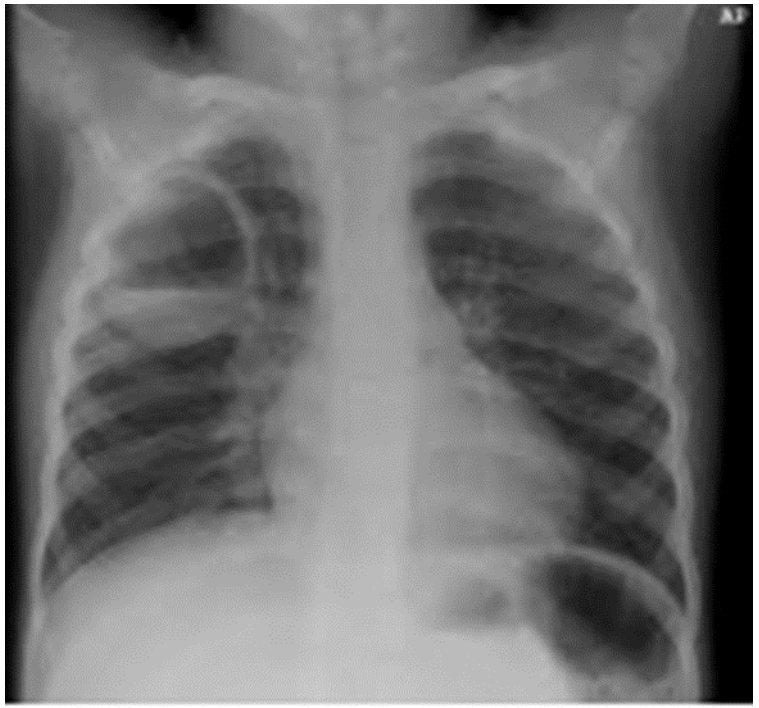
- **Pleural effusion**
- **Direct invasion: Empyema,pericarditis**
- **Hematogenous spread: Meningitis ,supporative arthritis and osteomyelitis (rare) .**

Complicated pneumonia

Pleural effusion



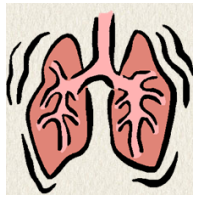
Necrotizing pneumonia : cavitaion



TREATMENT

- **Bacterial pneumoniea ;mild ,out-patient Mx :oral amoxicillin ,cefuroxime, amoxicillin/clav.**
- **School-aged children (Mycolpasma pneumoniea) macrolide like azithromycin.**
- **Sick ,hospitalised patients ;parenteral cefuroxime .if staph. aureus suspected (pneumatocele ,empyema) clindamycin or vancomycin .**
- **Viral pneumoniea ,if mild no respitatory disress no need for AB therapy , 30% of cases have co-existing bacterial infx. Clinical status to decide use of AB for superimposed bacterial infx,**

Case 3



- **Hx:**

- 12 year old child ,presented to the clinic with hx of cough for 7 days duration .Cough (dry ,worse at night and post exercise ,ass with whistling sound) ,symptoms started following a recent URTI).it worsened over last 2 days with dyspnea at times.
- Past Hx : previous episodes occurring mostly during winter , has hay fever ,had eczema during early childhood. Positive family hx of similar condition.

P/E :

Afebrile ,RR 35 (20-30) ,

Pulse rate 100 .

SPO2 89%.

ENT :Hyperemic throat.

Intercostal and subcostal retractions .

Chest :

diffuse Expiratory wheeze,prolonged expiratory phase with decreased air entry .

CVS :normal ,liver not palpable ,

hands : no finger clubbing .

Question 1

1-What are important questions you should ask in history ?

Mention anything relevant in :HOI,ROS,Past medical ,Birth ,Social , Vaccination, drug hx

For discussion see notes below

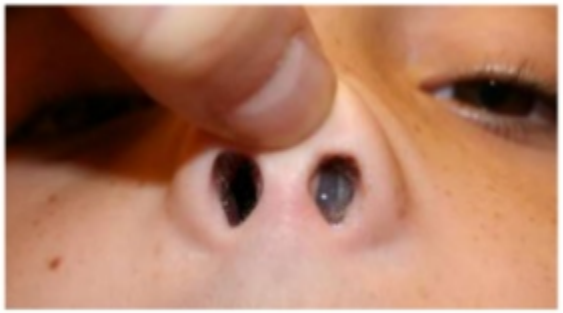
Question 2

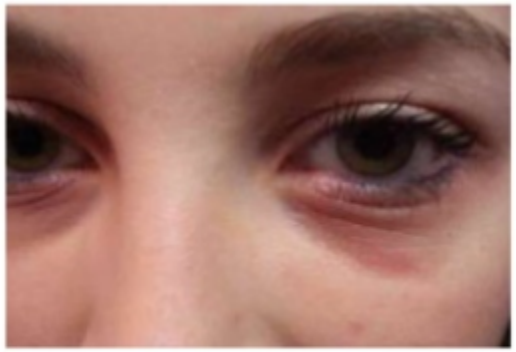
-What are important findings you should look for in Physical Examination ?

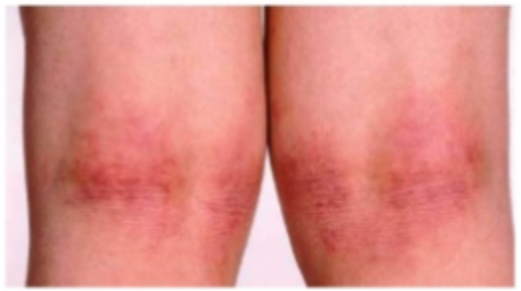
Please observe video below ,

https://www.bing.com/videos/search?q=video+physical+examination+for+a+child+with+asthma&&view=detail&mid=1716B617D91DA36B8E271716B617D91DA36B8E27&rvsmid=25C76EB9BD41A07D6EE925C76EB9BD41A07D6EE9&FORM=VDRVRV

The following are signs found in this child can you comment ?







Q 3 : what is you DDX

What is your DDX

What is the most likely Dx

Explain ,discuss

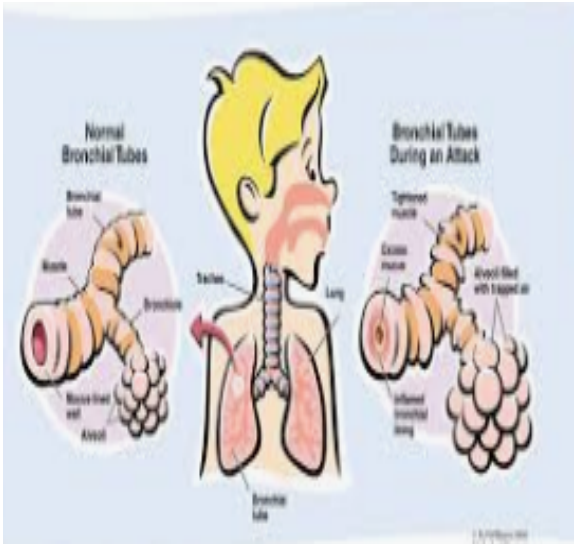
See notes ,discussion below

DDX

Bronchial asthma
Cystic Fibrosis
Primary ciliary dyskinesia
GERD
Foreign body aspiration

What is your diagnosis ?

Bronchial Asthma



Why Asthma

Typical signs and symptoms
,repeated previous episodes ,
seasonal variation ,
presence of atopy and family history

spiromerty ,chest xray findings …etc

Question 3

What important investigation should be performed for this child ?

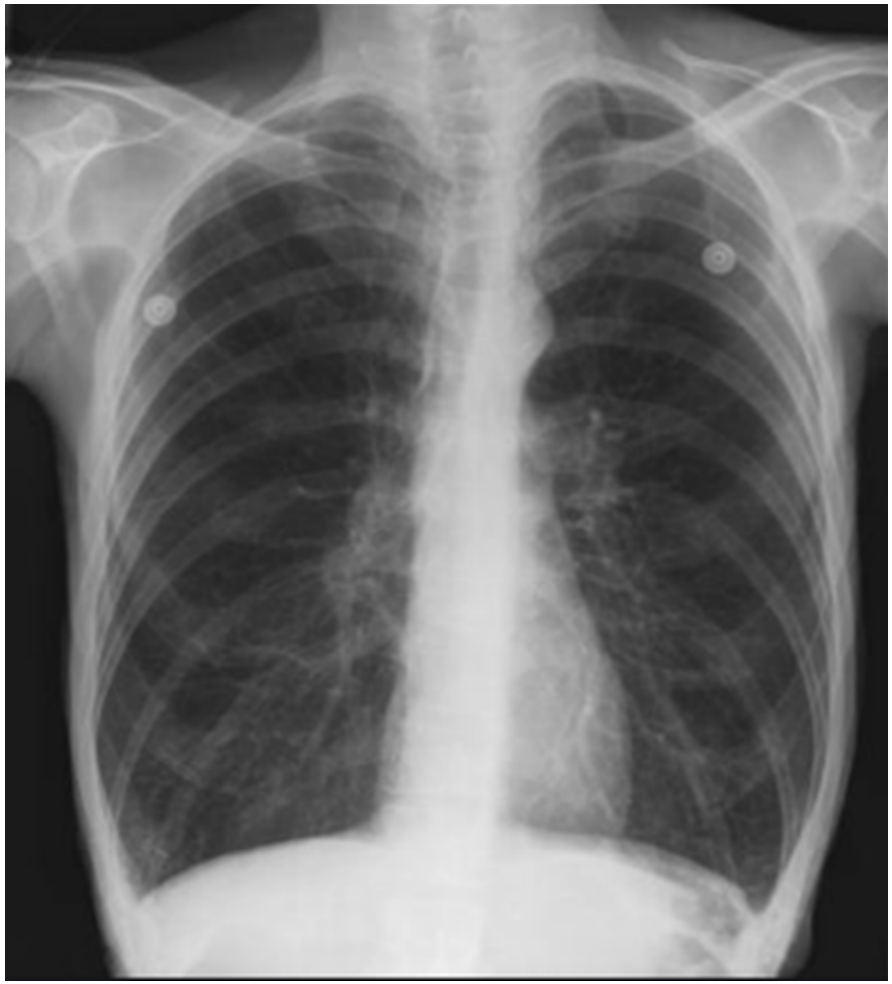
See notes/discussion below

CXR

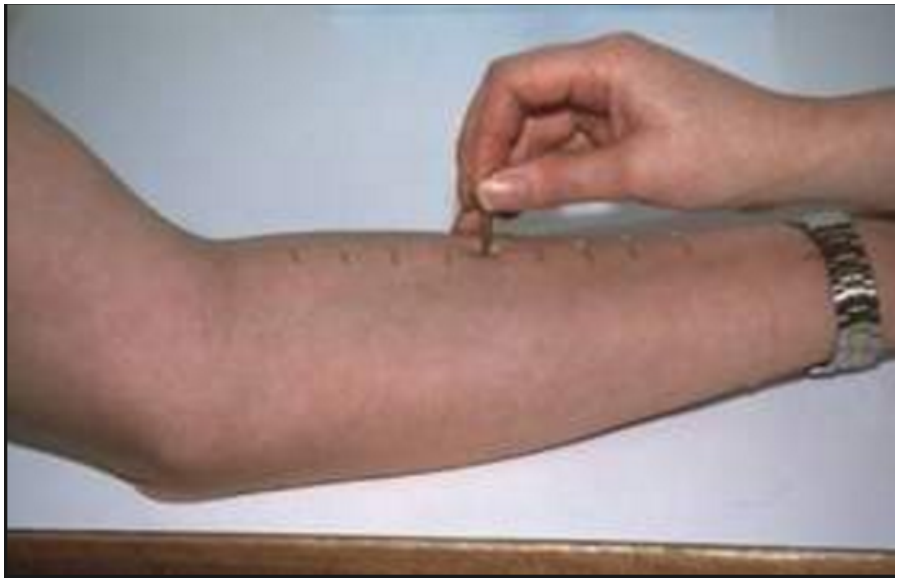
- Usually non is needed , to review old chart and previous imaging if available .

- If child in severe distress, suspect complication or other DDx needs to be excluded .

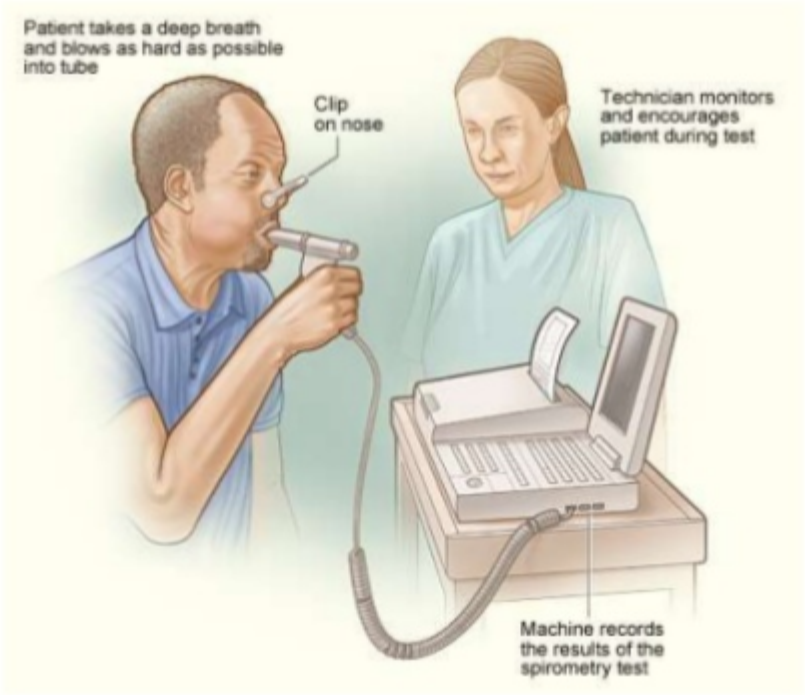
This is the child's CXR ,what is your interpretation ?



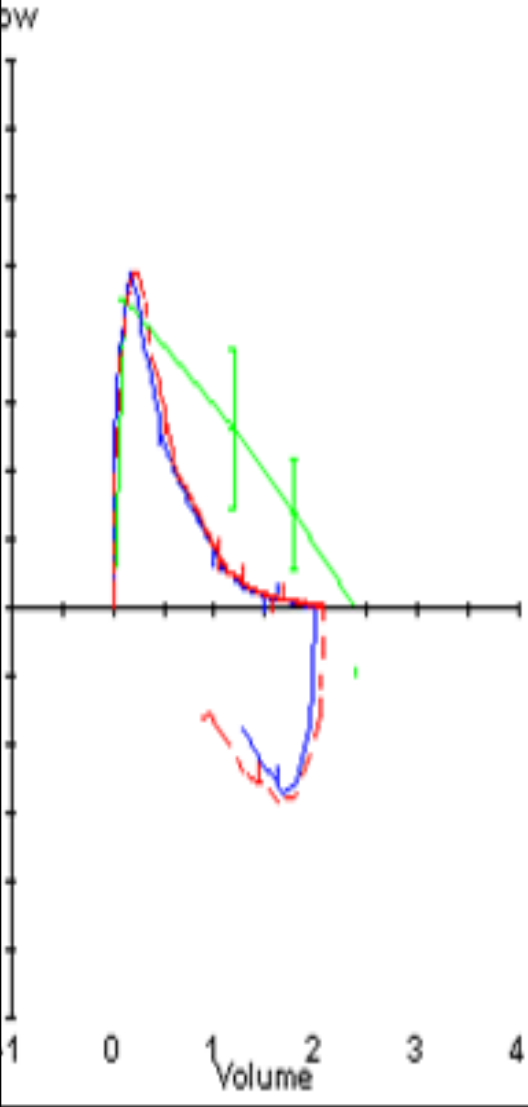
SPT to common inhaled allergens



Spirometry


Patient takes a deep breath and blows as hard as possible into tube
Clip on nose
Technician monitors and encourages patient during test
Machine records the results of the spirometry test

This is a flow volume loop for this child ,what is your interpretation ?



Spirometry

		Ref	Pre Meas	Pre % Ref	Post Meas	Post % Ref	Post % Chg
FVC	Liters	2.40	1.99	83	2.09	87	5
FEV1	Liters	2.25	1.28	57	1.31	58	3
FEV1/FVC	%	86	64		63		
FEF25-75%	L/sec	2.64	0.57	22	0.54	20	-5
FEF50%	L/sec	2.58	0.87	34	0.79	31	-9
PEF	L/sec	4.50	4.87	108	4.90	109	1

Question 4

- What treatment should this child receive ?
- Discuss

See notes below

Teratment

1-Acute settings :

O2 100 %for hypoxemia and respiratory distress

Rapid-acting beta2-agonists as needed for symptoms

Short course of systemic steroids

Ipratropium Bromide nebulized

Treatment

2-For control ,and prevention of future episodes :

1. ICS inhaled corticosteroids : first choice in children
2. LTRA leukotreine receptor antagonists
3. Combination LABA/ICS Long -acting b agonists
4. Cromolyn/Nedocromil
5. Methylxanthines:Theophylline
6. Syetemic steroids

Methods of inhaled medications delivery options

THANK YOU