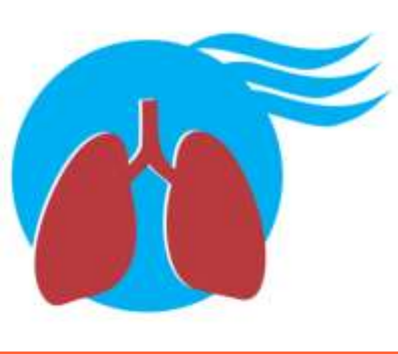

Case Presentations: Non Responding TB

Dr. Manoj Yadav

mbbs, dtcd, dnb (resp. dis.)

Consultant Pulmonologist

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Disclaimer

- The information, including but not limited to, text, graphics, images and other material contained in any presentation on this website are for informational purposes only.
- The case presentation are meant for qualified health professionals only.
- Since the uploaded presentation is converted from a ppt presentation, some of the points/aspects that are verbally communicated during ppt presentation will be missing.
- The clinical approach and treatment are tailored to individual patient. So it is not intended to be a substitute for one's own professional medical advice, diagnostic approach or treatment.
- Any questions/queries if any can be posted on my email . Kindly give adequate time to reply to the same.

World TB Day 24 March 2016

UNITE TO
END
TB

I
am
stopping
TB

What we all know

- Firm diagnosis of TB , esp. pulmonary TB, once suspected clinically is not difficult using common modalities like
  - Radiology
    - Chest X ray
    - HRCT Chest
  - Microbiology
    - Smear and Culture
  - PCR, Genexpert etc.

Common understanding

- TB not responding to 1st line AKT = Drug resistant TB
- 2nd Line drugs are usually started
- Though microbiological diagnosis should be attempted before labelling a case as MDR TB, it is not done by some doctors

Todays Talk

- 2 cases of Pulmonary TB
- Both started on treatment of MDR TB
  - Without basic investigations

Case 1.........

- 25 year old married lady
- 8 months gravida
- Dry Cough for 2 months
- Given symptomatic treatment at health center
- Post delivery had severe cough and breathlessness and went to SSGH

Reports

- Consulted private chest physician
- Admitted for 5 days (March 2014)
- Wt : 33 kg
- Sputum : AFB Negative

On discharge

- Tab Omnacortil 10 mg 1 bd
- Tab Akurit-4 : 1 tds
- Tab Moxiflox 400 mg 1 od
- Tab Ethionamide 250 mg 1 bd
- Tab Linezolid 600 mg 1 od
- Tab Clarithromycin 250 mg 1 bd
- Tab MV, Antacid etc

On follow up

- 18/04/2014
- Wt : 31 kg / SpO2 : 86%
- Tab Akurit-4 : 1 bd
- Tab Moxiflox 400 mg 1 od
- Tab Ethionamide 250 mg
  - –0---1--- ½
- Tab Linezolid 600 mg 1 od
- Tab Clarithromycin 250 mg 1 bd
- Tab DAN-P / Antacid / MV/ powder

- 28/04/2014
- Cough and fever
- Tab Akurit-4 : 1 bd
- Tab Omnacortil 10 mg 1BD
- Cough Suppresant Syp
- Tab DAN-P / Antacid / MV/ powder

27 April 2014

- Had giddiness at social function
- Admitted in ICU with altered sensorium
- Chest X ray : bilateral consolidation and pleural effusion

- Deranged LFT
- CT head s/o early communicating hydrocephalus
- CSF : Non conclusive

AP
29.4.14
2

Sputum report (3rd May 2014)

- AFB 3 day
  - NEGATIVE
  - AFB Culture put up

Line probe assay

- Mycobacterium Tuberculosis complex
  - DETECTED
  - ISONIAZID : SUSCEPTIBLE
  - RIFAMPICIN : SUSCEPTIBLE

Sputum G/S and C/S

SPECIMEN : SPUTUM

PUS CELLS : 5 - 10/lpf Epithelial cells : 20 - 25/lpf

SPUTUM SCORE : Negative

SMEAR : Moderate number of Gram positive cocci in short chains seen. Moderate number of Gram negative cocci seen. Few Gram negative bacilli & Gram positive rods seen.

ORGANISMS : E.coli (Moderate growth)

ANTIBIOGRAM

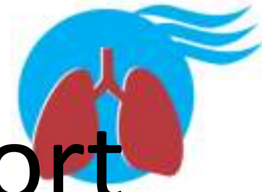
SENSITIVE	MODERATELY SENSITIVE	RESISTANT
Colistin		Amoxycillin+Clavulanic acid
Polymyxin B		Co-Trimoxazole
Imipenem		Cefuroxime
Meropenem		Cefixime
Tigecycline		Ceftriaxone
Amikacin		Ceftazidime
Gentamicin		Cefotaxime
Netilmicin		Ciprofloxacin
Chloramphenicol		Levofloxacin
Piperacillin+Tazobactam		
Cefoperazone+Sulbactam		
Cefepime+Tazobactam		

- Strain is ESBL producer.

Discharged on 7 May 2014

- Inj Streptomycin 750 mg IM alternate day
- Tab Isoniazid 200 mg
- Tab Etambutol 800 mg
- Tab Moxiflox 400 mg 1 od
- Eustochol / Levarecetam / Hepamerz/ Duphalac

AFB Culture and Sensitivity Report

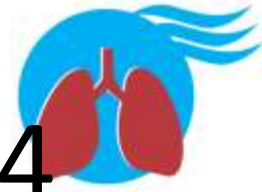


- (In 3 weeks)
- Culture Positive for MTB Complex

- 2 weeks later (after culture positive)
- AFB Sensitivity report

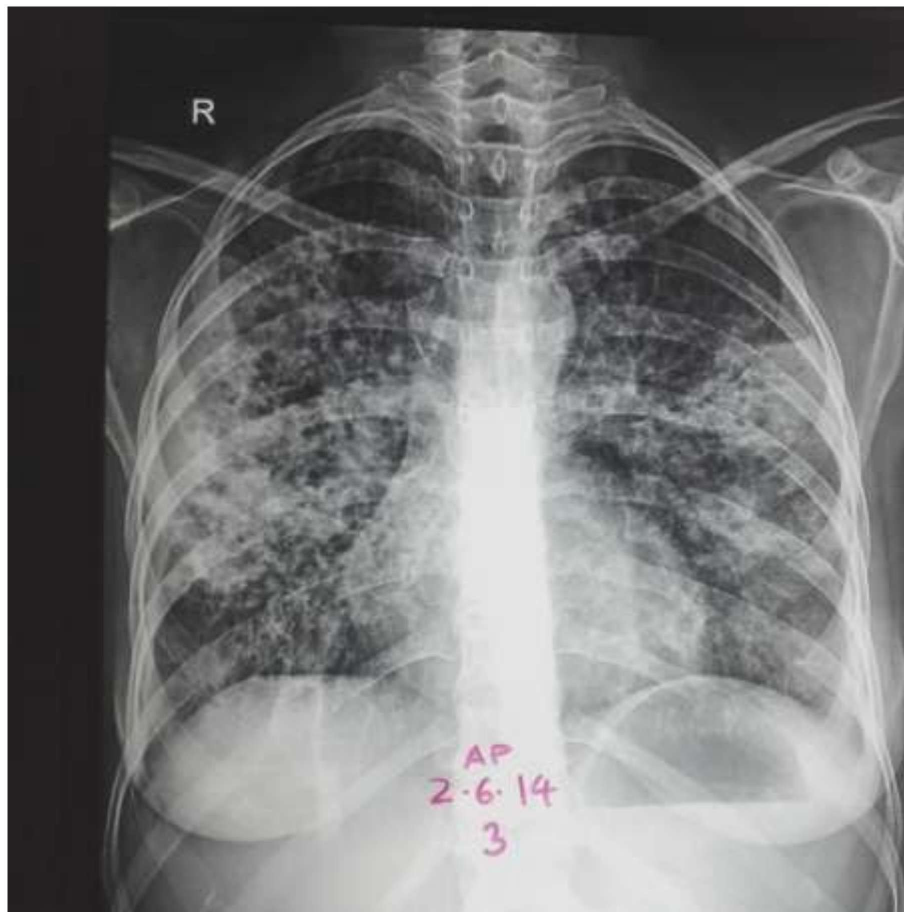
  AFB Sensitive to
  - ISONIZID
  - STREMPTOMYCIN
  - RIFAMPICIN
  - EHTAMBUTOL

OPD follow up : June- July 2014



- Wt : 29 kg
- INH : 300 & 150 alt day
- EMB : 600 mg
- RFM : 300 mg 1 od
- Moxi 400 mg 1 od
- Inj. SM .75 IM alt day
- Livfit/ Livogen/ Betonin/ Rabifine-D/ B-long

- 17-07-2014
- SM omitted
- No weight gain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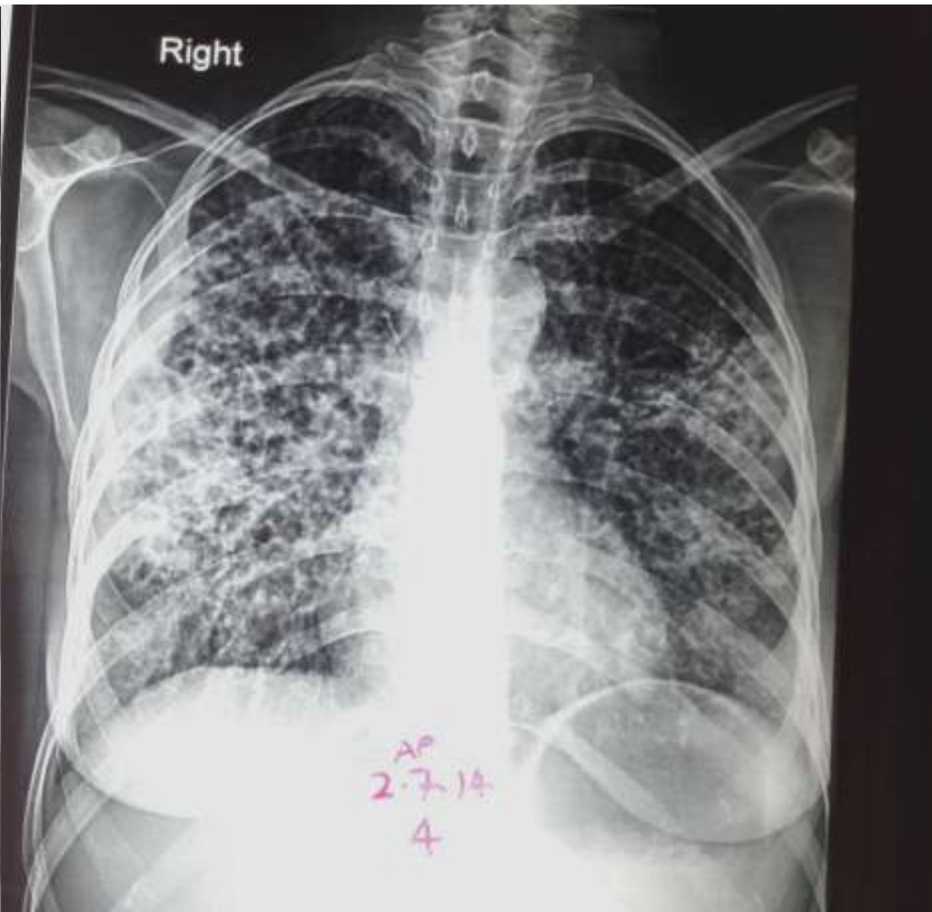
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4

First week of Aug 2014

- Sputum for AFB 3 days report

Specimen :	Coll.
Day 1	05/08/2014 08:00: Received at Lab
Day 2	06/08/2014 07:30: Received at Lab
Day 3	07/08/2014 07:30: Received at Lab
SPUTUM	05/08/2014 08:00: Received at Lab

Test Parameter	Result(s)
AFB Smear (3 days) - ZN stain	
*Specimen	Sputum
AFB Direct smear (Day 1)	Positive (12-15/entire smear
AFB Concentration (Day 1)	Positive
AFB Direct smear (Day 2)	Positive (3-4 /entire smear)
AFB Concentration (Day 2)	Positive
AFB Direct smear (Day 3)	Positive (3-4/ entire smear)
AFB Concentration (Day 3)	Positive

- G/S and C/S report

SPECIMEN : SPUTUM

PUS CELLS : 60 - 80/lpf

SPUTUM SCORE : POSITIVE

SMEAR : Moderate number of Gram positive cocci in short chains seen. Moderate number of Gram negative bacilli seen. Few Gram positive rods seen.

ORGANISMS : **Klebsiella pneumoniae (Moderate growth)**

ANTIBIOGRAM

SENSITIVE	MODERATELY SENSITIVE	RESISTANT
Colistin	Amoxycillin+Clavulanic acid	Co-Trimoxazole
Polymyxin B	Ciprofloxacin	Cefuroxime
Imipenem	Piperacillin+Tazobactam	Cefixime
Meropenem		Ceftriaxone
Tigecycline		Ceftazidime
Levofloxacin		Cefotaxime
Amikacin		Cefoperazone+Sulbactam
Gentamicin		
Netilmicin		
Chloramphenicol		
Cefepime+Tazobactam		

- Strain is ESBL producer.

SMEARS AND CULTURES.THIS IS BASED

Last week of August 2014

- By Now
- No weight gain
- AFB Positive
- Gram negative bacilli persist
- HRCT Chest Advice and patient referred to me

HRCT Chest
25-Aug-2014

- Seen the patient with all reports and reassessed
- Adviced routine hemogram and Ix for Immunodeficiency
- Also did Bronchoscopy

Investigated

Name : MS. AARZOOBANU PATHAN
Ref. by : DR. MANOJ YADAV
Reg. Date : 25/08/2014 13:15
Pt. Id :
Age / Sex : [illegible] / Female
Lab Ref No. : R124558

HAEMATOLOGY

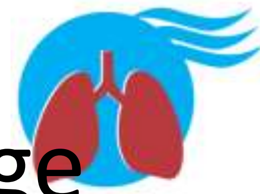
Specimen : WHOLE BLOOD EDTA
Coll. 25/08/2014 14:35: Hospital Visit

Test Parameter	Result(s)	Biological Reference Interval (Adult)
Hb Indices		
Hb	10.4 gm %	[illegible]
RBC	4.75 mill/cmm	[illegible]
P.C.V.	34.2 %	[illegible]
M.C.V.	72.0 fl	[illegible]
M.C.H.	21.9 pg	[illegible]
M.C.H.C.	30.4 %	[illegible]
RDW - SD	45.5 fl	[illegible]
Total W.B.C.	10460 per cu mm	[illegible]
ESR		
ESR	39 mm/hr	[illegible]
Platelets		
Platelets	524000 per cu mm	[illegible]
W.B.C. differential count		
Polymorphs %	83 %	[illegible]
Lymphocytes %	11 %	[illegible]
Eosinophil %	2 %	[illegible]
Monocytes %	4 %	[illegible]
Polymorphs (Abs. Value)	8682 per cumm	[illegible]
Lymphocytes (Abs. Value)	1151 per cumm	[illegible]
Eosinophil (Abs. Value)	209 per cumm	[illegible]
Monocytes (Abs. Value)	418 per cumm	[illegible]
Peripheral Smear		
P.S. (Overview)	Mild Microcytosis, Mild Hypochromia, Mild Absolute neutrophilia, Polymorphs show left shift, Mild thrombocytosis likely to be reactive.	
B.A.L Fluid examination		
Volume (Total)	40 mL	
Count - WBC	1500 /cmm	

BIOCHEMISTRY

Specimen : SERUM
Coll. 25/08/2014 14:35: Hospital Visit

Test Parameter	Result(s)	Biological Reference Interval (Adult)	
Serum Immunoglobulins			
Serum Ig G	1600 mg/dL	751 - 1560	(Immuno nephelometry)
Serum Ig M	69 mg/dL	46 - 304	(Immuno nephelometry)
Serum Ig A	173 mg/dL	82 - 453	(Immuno nephelometry)



Fiberoptic Bronchoscopy and lavage

BAL fluid sent

SPECIMEN : BAL FLUID

SMEAR : Fair number pus cells seen. Moderate number of Gram positiv seen. Few Gram negative bacilli seen.

ORGANISMS : **E.coli (Moderate growth)**

ANTIBIOGRAM

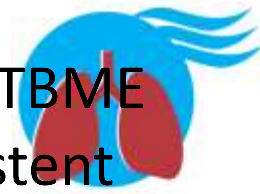
SENSITIVE	MODERATELY SENSITIVE	RESISTANT
Colistin	Levofloxacin	Co-Trimoxazole
Polymyxin B		Cefuroxime
Imipenem		Cefixime
Meropenem		Ceftriaxone
Tigecycline		Ceftazidime
Amoxycillin+Clavulanic acid		Cefotaxime
Amikacin		Ciprofloxacin
Gentamicin		
Netilmicin		
Chloramphenicol		
Piperacillin+Tazobactam		
Cefoperazone+Sulbactam		
Cefepime+Tazobactam		

- Strain is ESBL producer.

Microbiologial Smear Study....

TEST	RESULTS
Specimen	BAL FLUID
AFB Concentrartion (Day 1)	Positive(7 -8/entire smear)
Comment	AFB culture put up. Report follows on 15/09/2014.

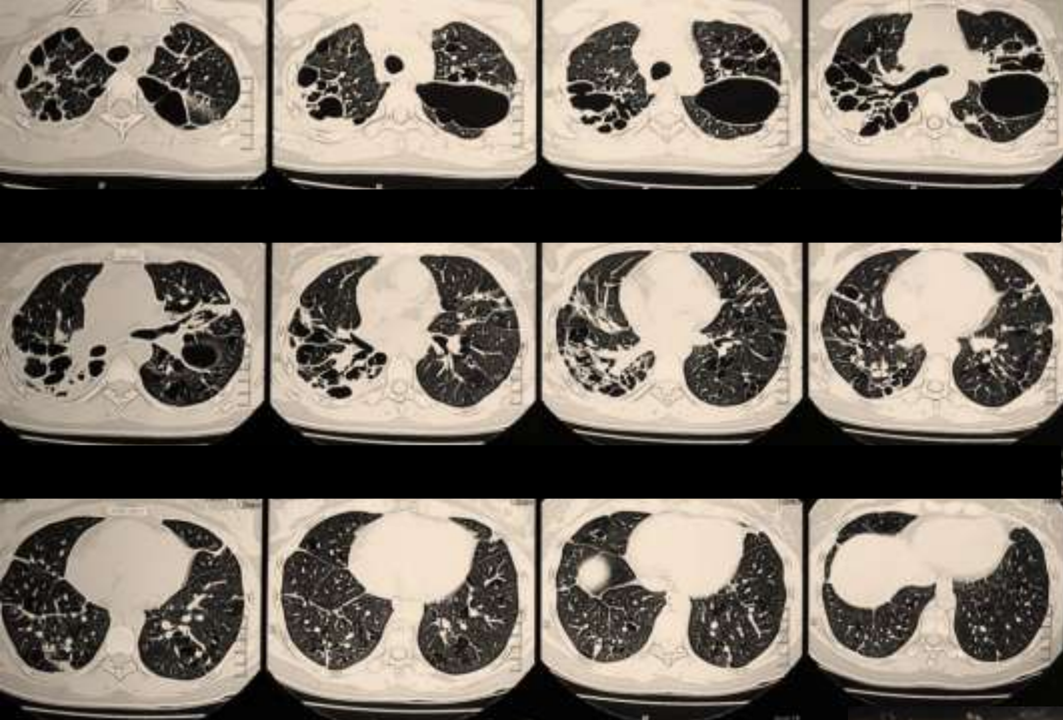
ANTI TB drugs given for 17 months as patient had possible TBME also apart from extensive PTB. Faropenem given for persistent E.Coli infection



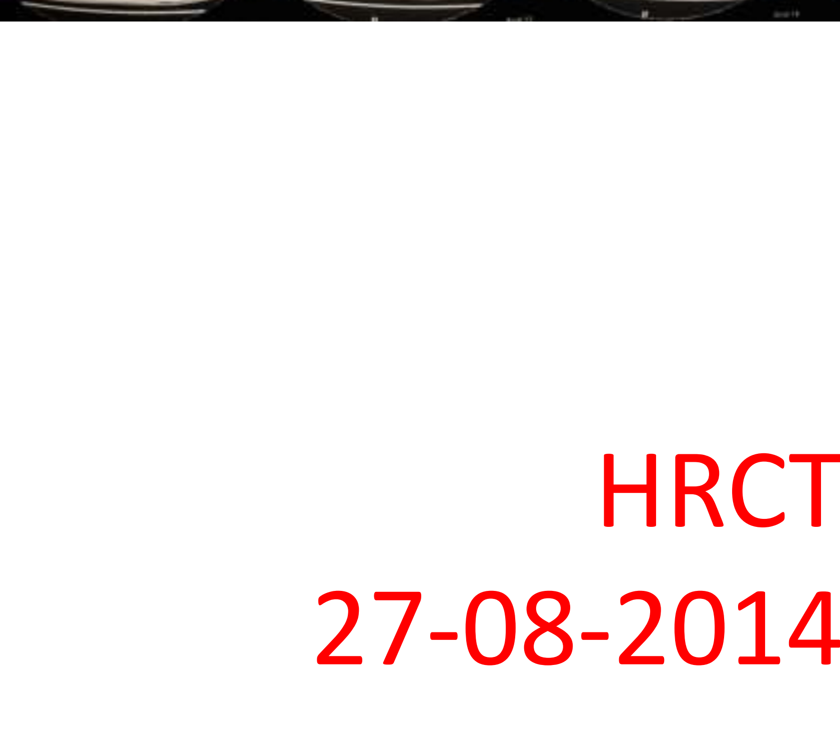
	28-08-14 To 01-11-14 2 months	01-11-14 to 29-01-15 3 months	29-01-15 to 18-06-15 5 months
Weight	34 ---→ 36	36 ---→ 40	40 --→ 44
INH	INH 300	INH 300	INH 300
RFM	RFM 300	RFM 450	RFM 450
EMB	EMB 600	EMB 800	EMB 800
Moxi	Moxi 400	Moxi	
Faropenem	Faropenem		

- AFB Culture : No growth
- HRCT chest advised in June 2015

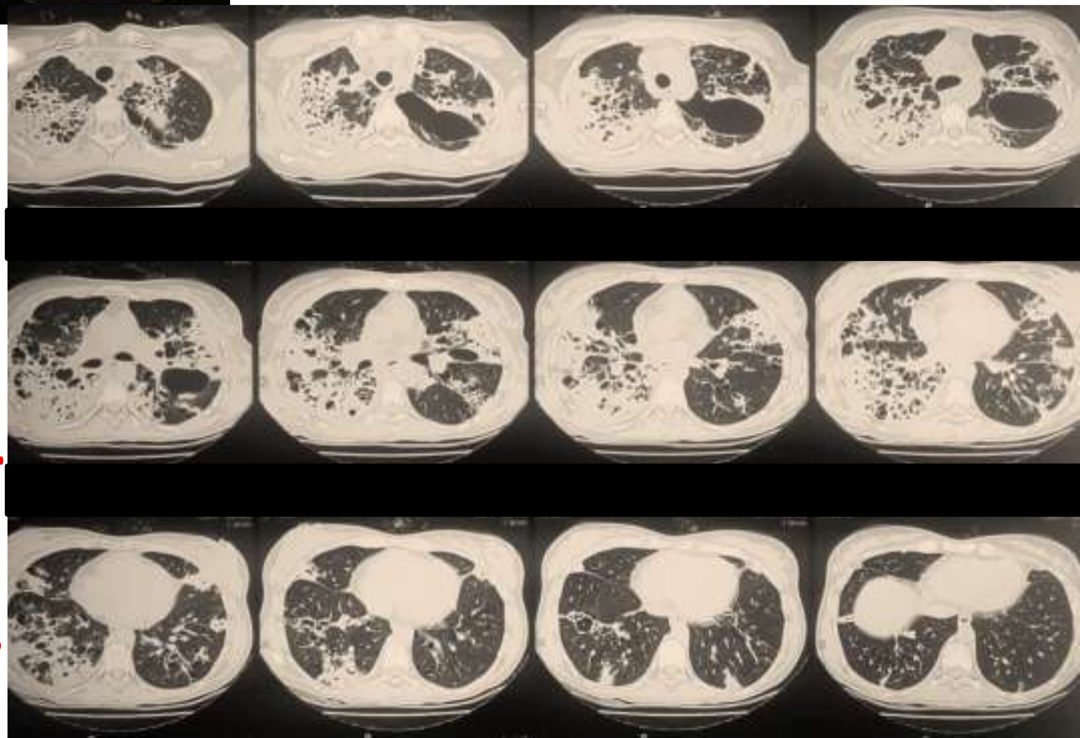
HRCT
18-06-2015

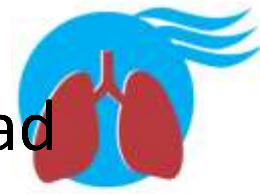


HRCT
18-06-2015



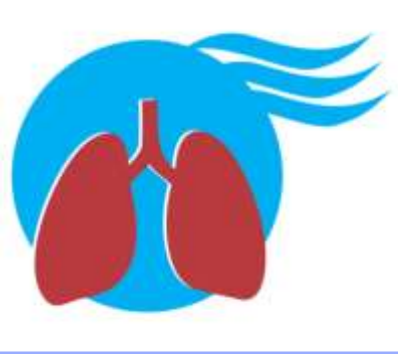
HRCT
27-08-2014





ANTI TB drugs given for 17 months as patient had possible TBME also apart from extensive PTB. Faropenem given for persistent E.Coli infection

	28-08-14 To 01-11-14 2 months	01-11-14 to 29-01-15 3 months	29-01-15 to 25-08-15 7 months	25-08-15 to 25-01-16 5 months	25-01-16
Weight	34 ---→ 36	36 ---→ 40	40 --→ 45	45 --→ 49	
INH	INH 300	INH 300	INH 300	INH 300	STOP AKT
RFM	RFM 300	RFM 450	RFM 450	RFM 450	
EMB	EMB 600	EMB 800	EMB 800	EMB 800	
Moxi	Moxi 400	Moxi			
Faropenem	Faropenem				

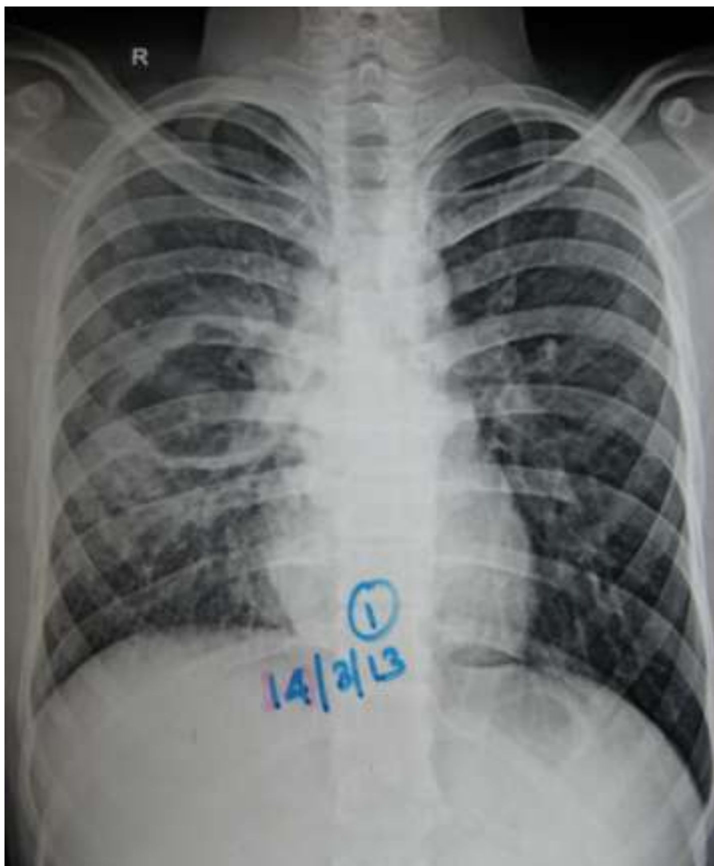


Case 2

Case 2:

- 18 year old boy
- Dry Cough for 2 months
- Associated Fever
- Chest pain while coughing
- On treatment from GP for last 25 days, for RTI with raised TC

- 14-03-2013
- Consulted Physician
- Pulse : 114
- BP : 130/80
- Weight : 54 kg
- R/S : AEBE
- Chest X ray advised



- Prescribed (Day 1)
- Tab Tetracox : 1---0---1
- Tab Levofloxacin 250
  1---0---1
- Tab PCM 500 : 1---0---1
- Tab Izra 20 : 1---0---1
- Liq Phensedyl : 1---1---1

2nd Visit (*Day 7*) :- 21-03 :

- PR : 134 ; SpO2 : 94%, BP : 120/80, Wt.: 52.7 kg
  - Tab Tetracox : 1 BD for 15 days
  - Levoflox OMITTED

3rd Visit (*Day 18*) :- 01- 04 : Fever with rigors , Wt : 51 kg

- Stopped Tetracox , Started AKT-3 : for 15 days
- Tab Ranidom, Liq. Elixir : for 15 days
- Inj. Kanamycin .75 mg alternate day for 7 days
- Tab Moxifloxacin 400 mg 1 od for 5 days

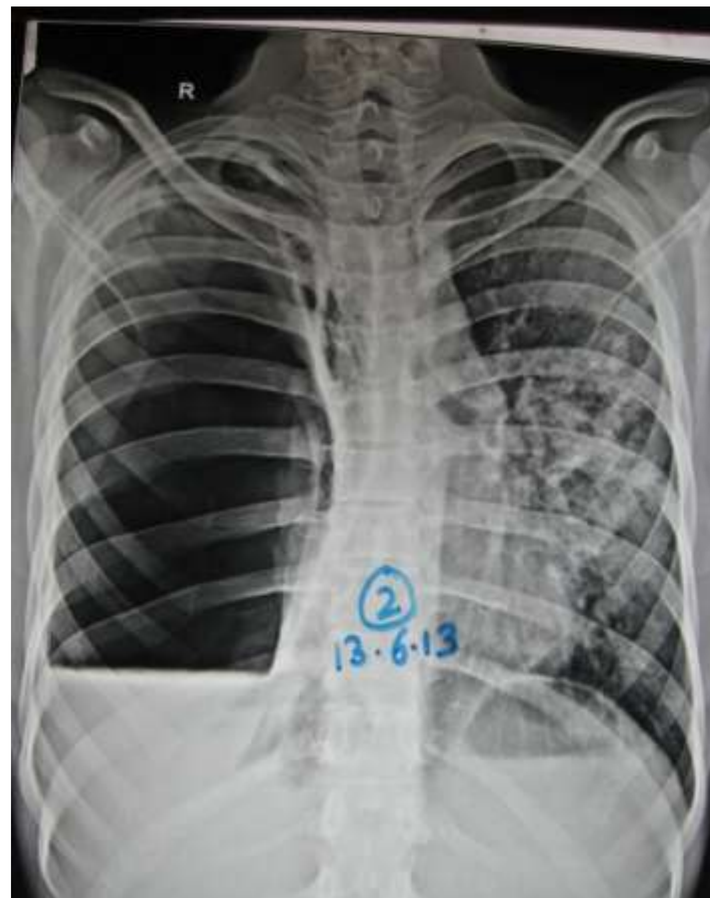
- 4th Visit (Day 28) 11-04: Wt. 50 kg
  - AKT-3 : for 20 days
  - Inj. Kanamycin 0.5 mg alt day for 7 doses

- 5th Visit (Day 46) 29-04 : Wt : 49 kg
  - AKT-3
  - Inj. Kanamycin 0.5 mg alt day
  - Tab Levofloxacin 250 mg 1 BD
  - Tab Ranidom, Tab PCM, Liq Elixir
  - Referred to DTC for possible MDR TB

June 2013

13-06-2013 (Day 60)

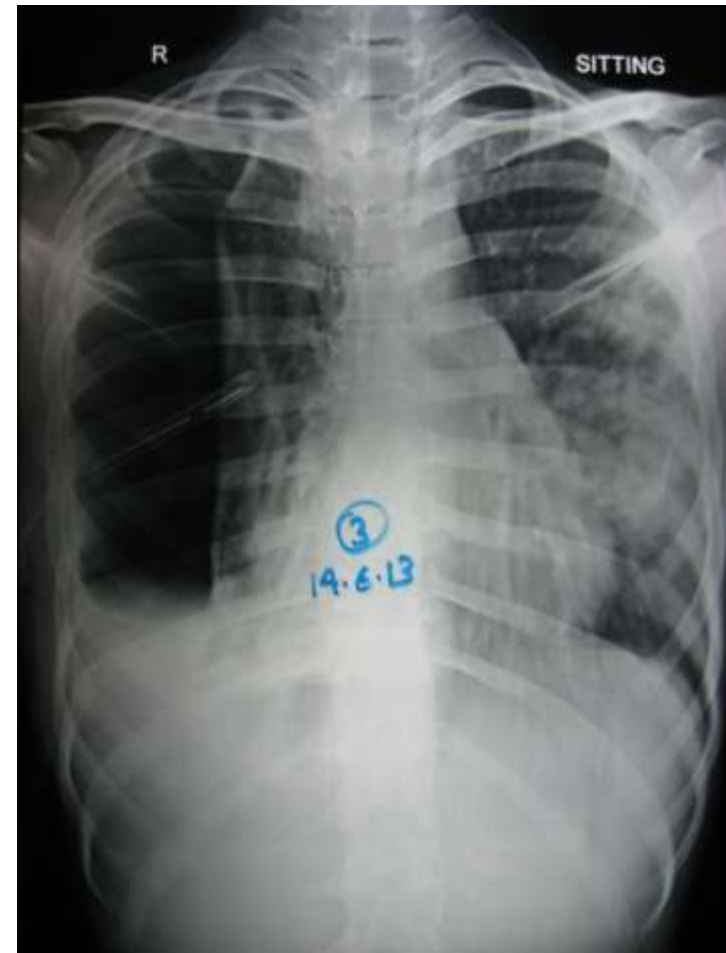
- Wt : 43.9 kg
- Acute onset right side chest pain and breathlessness
- Chest X ray : : Right HPT
- Adv: DTC reference and admission
- Patient went to Surat :

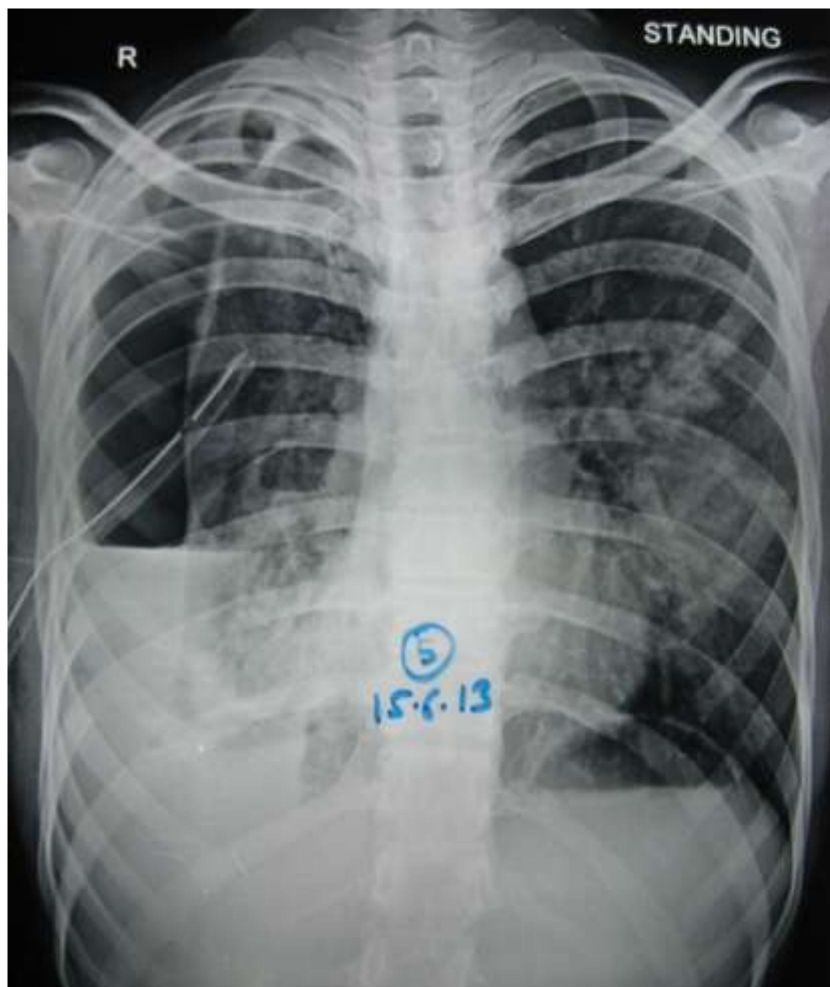


Serial Chest X ray at Surat

- Admitted from 14 Jun to 20 Jun in Surat
- ICD Tube was inserted and AKT and antibiotics given :

- Labelled as MDR TB

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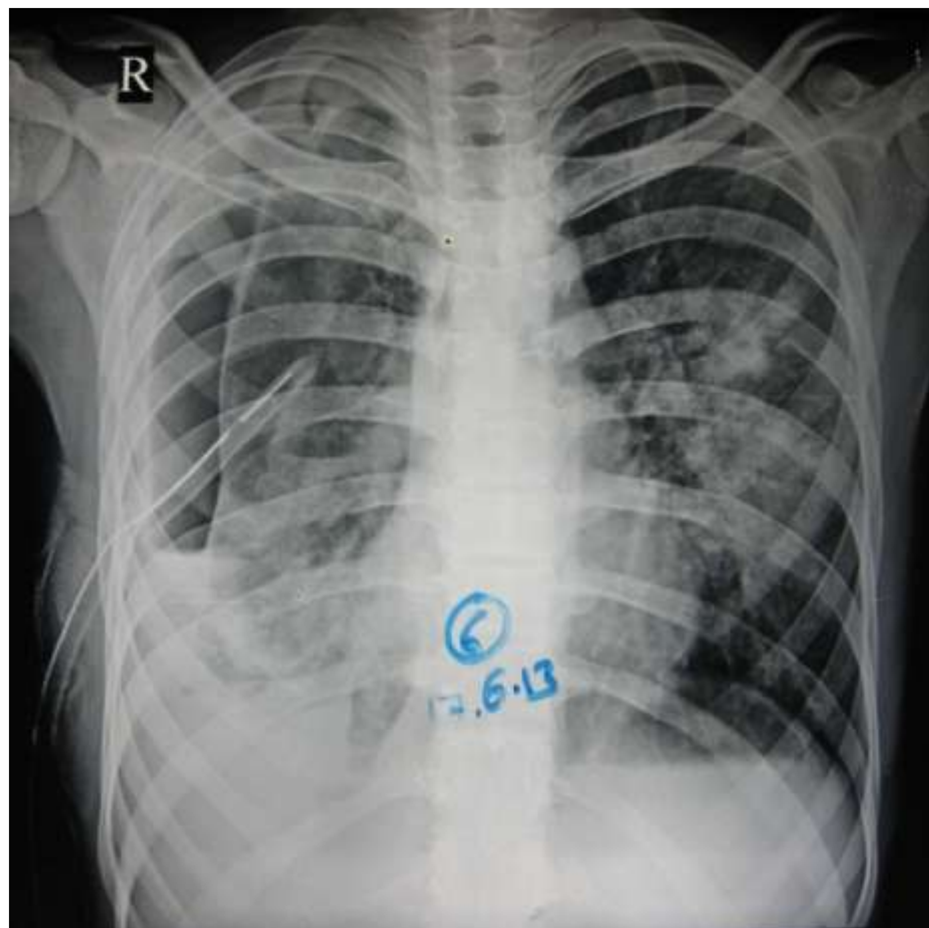
5
15.6.13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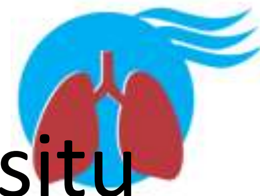
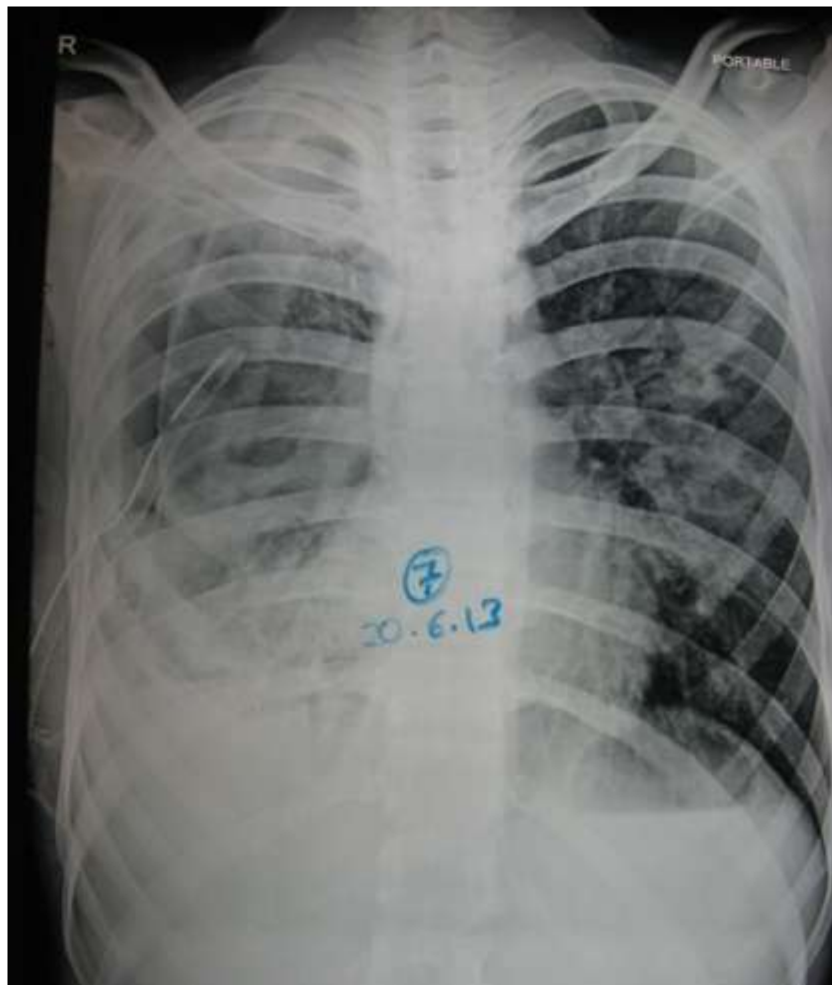
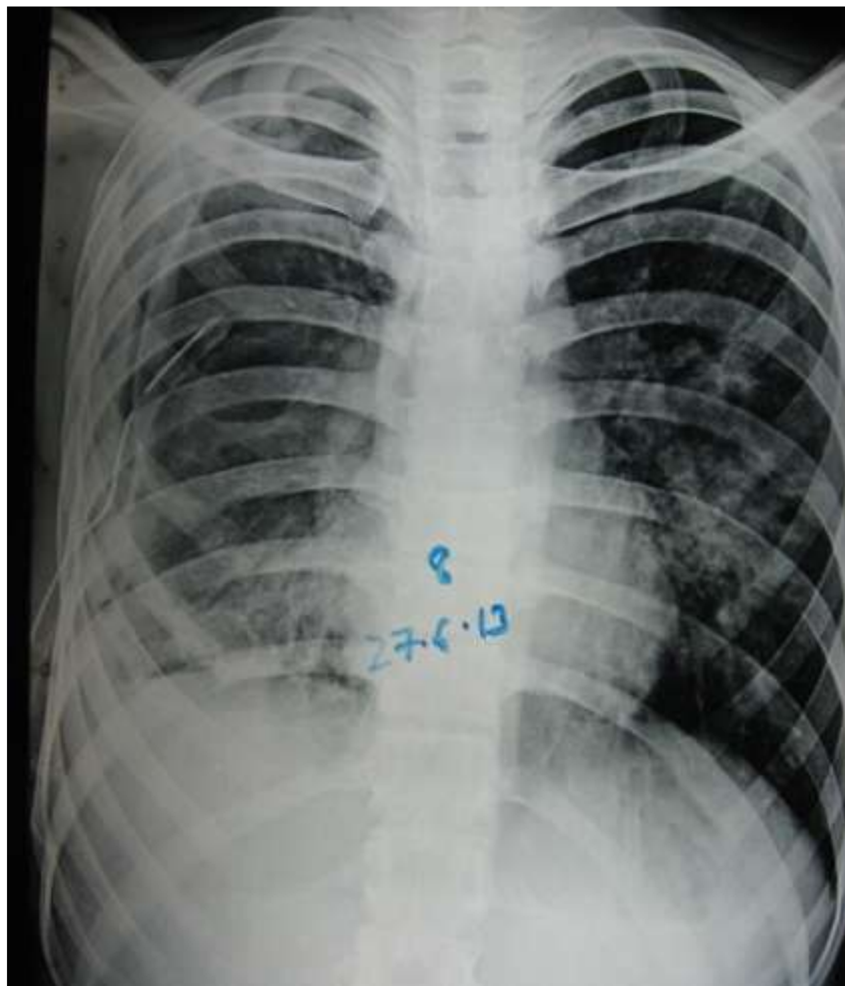


Discharged on 6th day with ICD Tube in situ



: Inj. Kanama(500 mg) IM OD	
Tab. B-Complex	1 - 0 - 0
Tab. Rablet D (20 mg)	1 - 0 - 0
Tab. Ethiomine (250 mg)	1 - 1 - 1
Tab. Levomac (750 mg)	1 - 0 - 0
Tab. Monopas (1 gm)	3 - 3 - 3
Tab. PZA CIBA (750 mg)	1 - 0 - 1
Tab. Dynapar	1 - 0 - 1
Tab. Ondem MD (4 mg)	1tab (SOS) IF Von
Tab. Dolo (650 mg)	1tab. (SOS) IF Fever

Follow up at 7 days



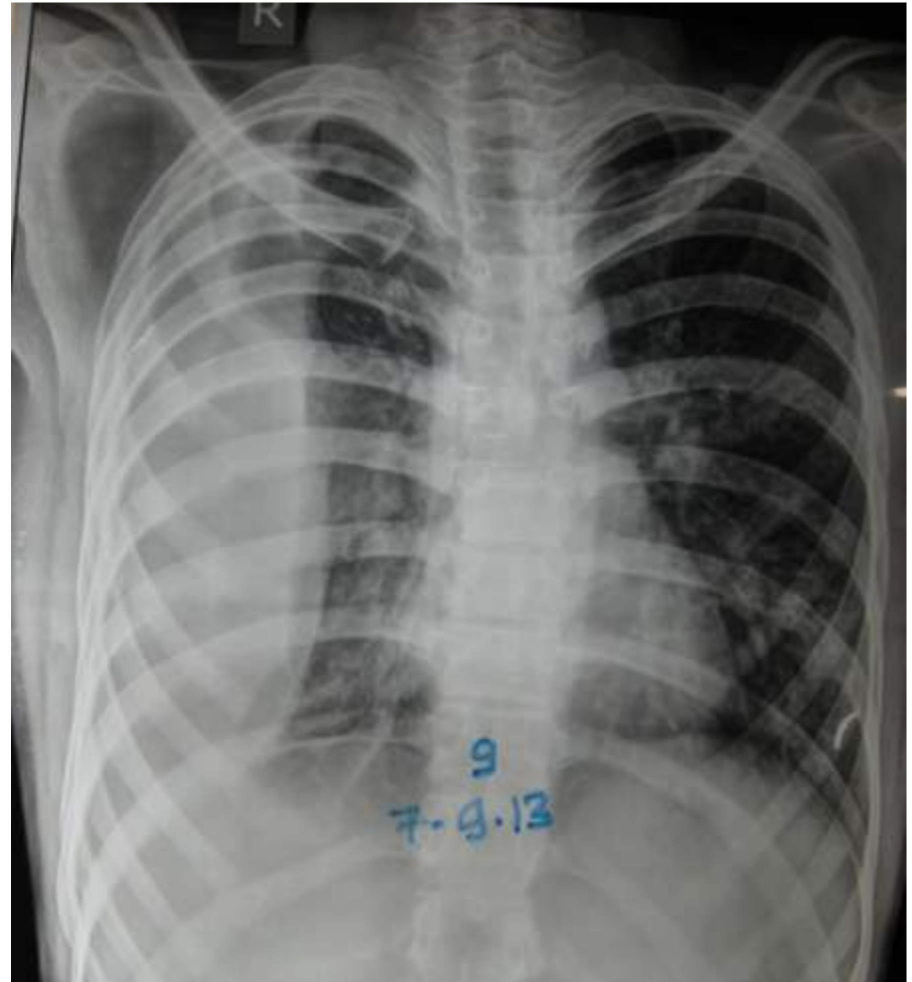
- ICD Tube removed

40 days after tube removal

- Chest X ray in September 2013

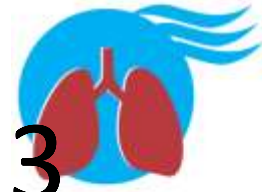
Hb : 12.7
WBC : 11,500
P-64; L-27; E-04; M-05
Platelet : 4,33,000

HRCT Chest advised

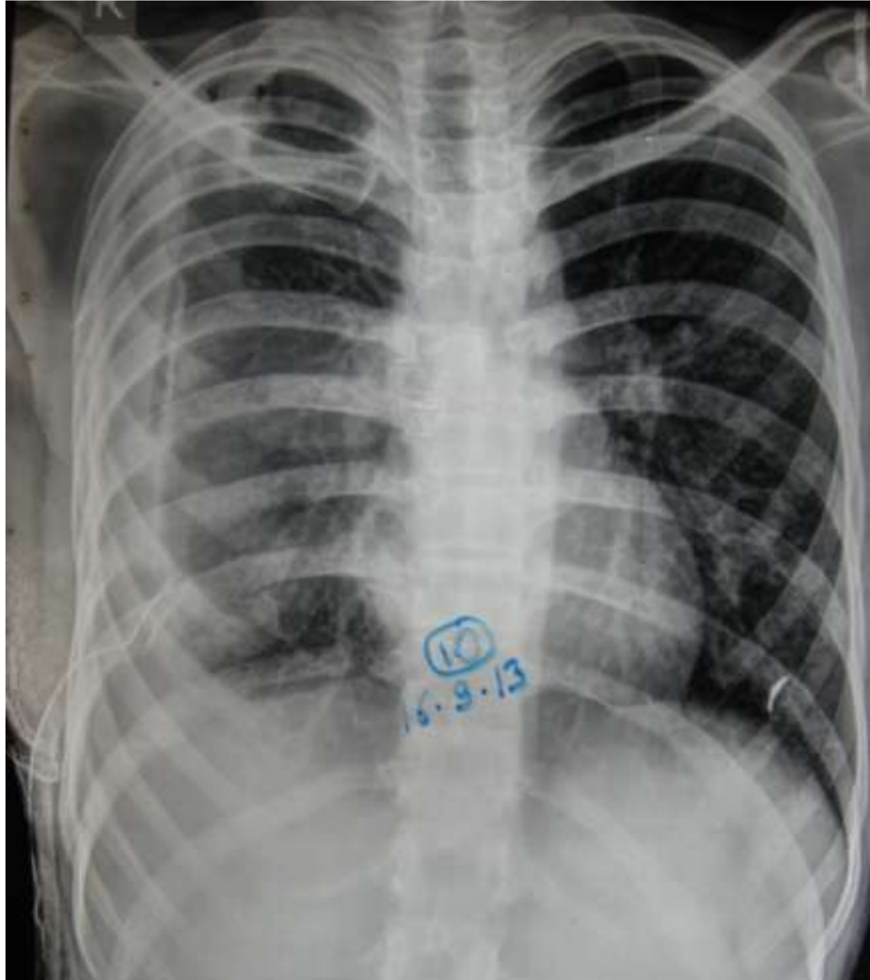


CT chest

- Moderate amount of free fluid noted in rt. Costophrenic recess with thickened visceral and parietal pleura, p/o loculated pleural effusion
- Ill defined branching centrilobular nodelurs in apicopost and ant seg of LUL, apical, anterobasal, lateral basal seg of LLL and post seg of RUL and apical and poster basal seg of RLL
- Collapse consolidated lateralbasal seg of RLL
- Few small LN in both axilla



ICD Tube Inserted : 14 Sep 2013

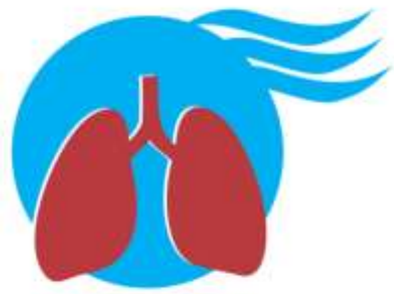


- Pleural Fluid :
  - Turbid
  - Protein: 5.4
  - Cells : Suppurative debris
  - No organisms detected
  - AFB Not detected

ICD Tube removed on 4th Day

<u>Treatment on Discharge (17th Sept 2013)</u>

- Inj. Kanamac 750 mg IM daily
- Tab Linezolid 600 mg 1 od
- Tab Ethionamide 250 mg 1 tds
- Tab Levofloxacin 750 mg 1 od
- Tab Coxerin 250 mg 1 bd
- Tab Pantoprazole 20 mg

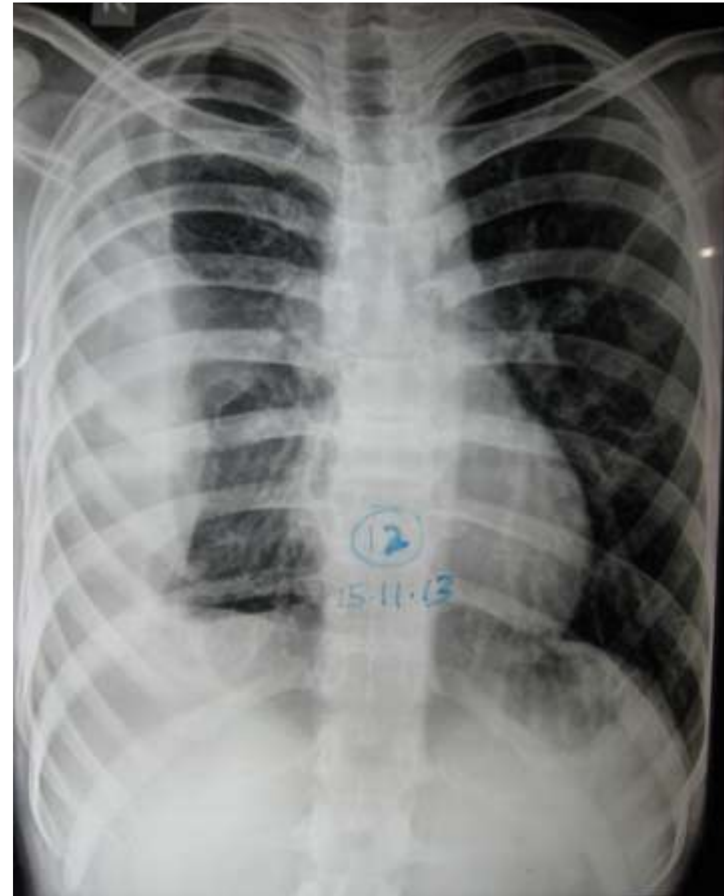


Nov 2013

15-11-2013

- Inj. Kanamac 750 mg IM daily
- Tab Linezolid 600 mg 1 od
- Tab Ethionamide 250 mg 1 tds
- Tab Levofloxacin 750 mg 1 od
- Tab Coxerin 250 mg 1 bd

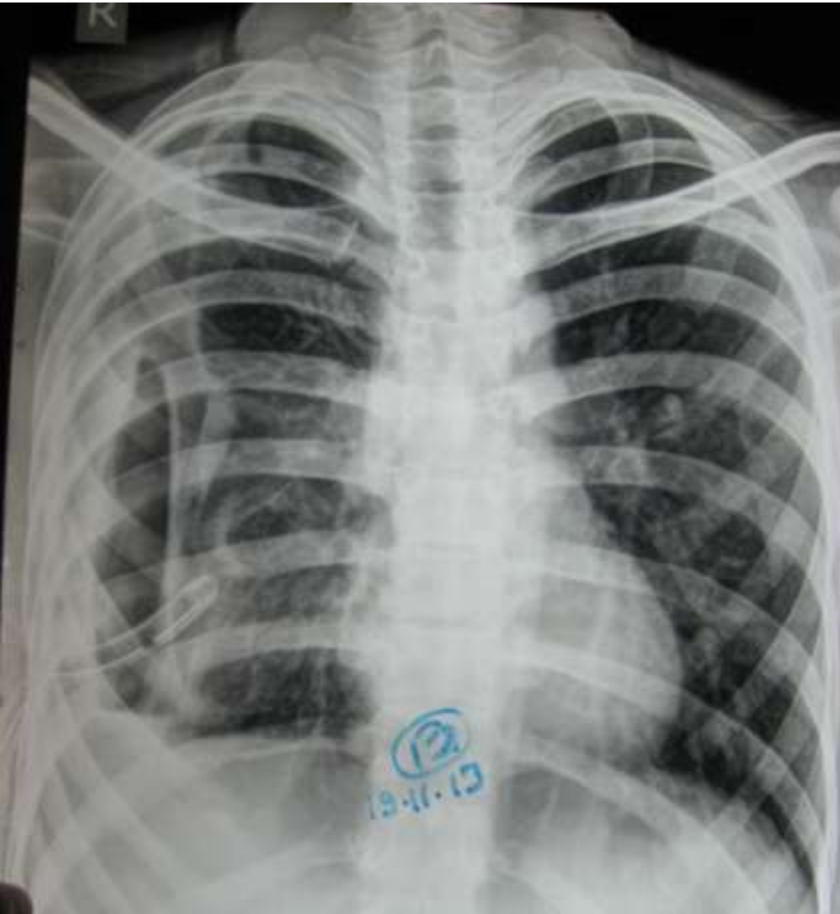
- CVTS Opinion for decortication adviced



- Hb : 10.3
- WBC : 8,300
- P-73; L-19; E-03; M-05
- Platelet : 4,34,000

- Pleural Fluid :
  - No Organism
  - No AFB
  - Debris
  - Predominantely Polymorphs
  - Protein 5.9
  - Sugar 13.6
  - Few RBC

5 days later ICD Tube removed



<u>On Discharge</u>

- Inj. Kanamycin 750m mg IM od
- Tab Linezolid 600 mg 1 od
- Tab Ethionamid 250 mg 1 tds
- Tab Moxifloxacin 400 mg 1 od
- Tab Ranitidine 1 bd
- Tab Esomeprazole 1bd
- Tab Dan –P 1 sos

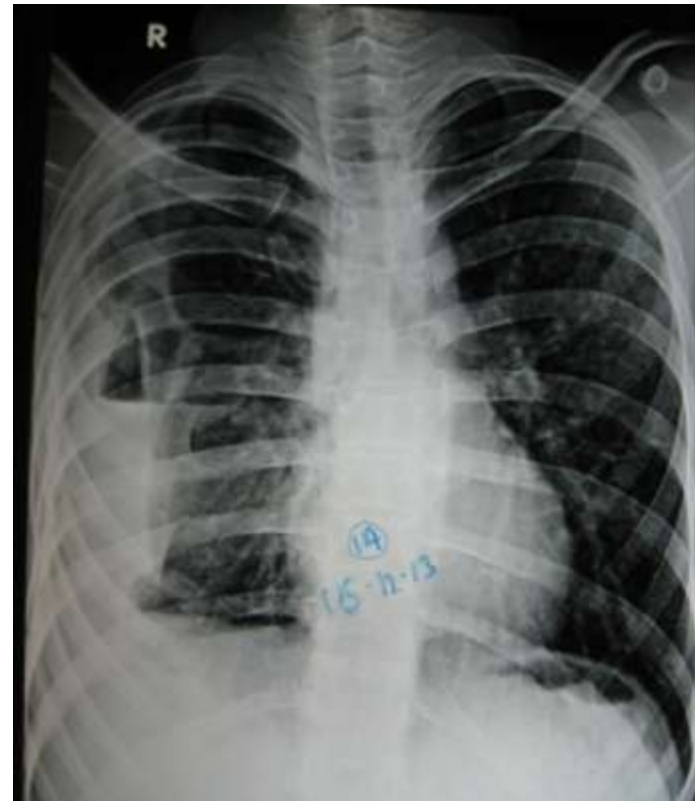
By Now

- 9 months of AKT
- In 2nd month: Diagnosed as MDR TB with empyema
  - (No report available for labelling MDR TB)
- Second line AKT for 7 months
  - Kanamycin, Ethionamide, Cycloserine, PAS, Quinolone
- ICD Tube inserted : 3 times
- AFB never was positive
- Pleural fluid : inconclusive
- Patient had severe gastritis and also depression with phobias of being attacked
- Advised CVTS opinion decortication
- Weight loss from 54 kg to 49 kg

Consulted me in Nov 2013

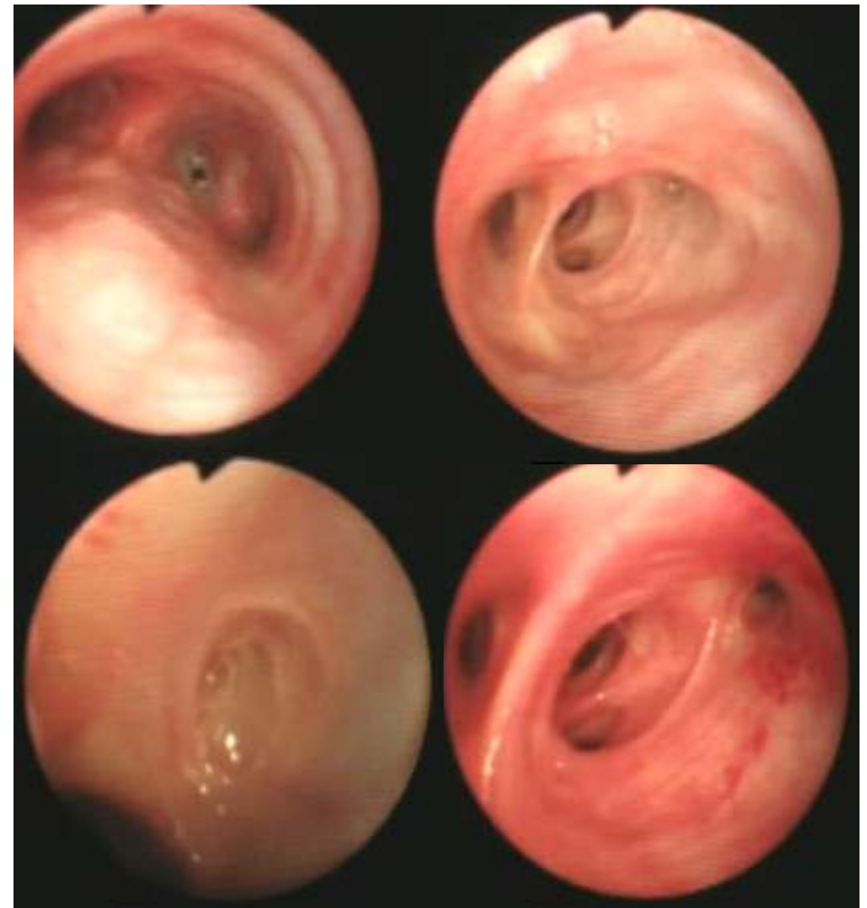
- Cough
- Epigastric tenderness
- Anorexia
- Fever

- Wt.: 49 kg



Got admitted from 19 to 24 Dec 2013

- Fiberoptic Bronchoscopy and bronchial lavage done
- Copious secretions in RLL , esp. apical segment



Bronchial Lavage

SPECIMEN : BAL FLUID

SMEAR : Moderate number of pus cells seen. Occasional Gram positive cocci seen. Few Gram negative bacilli seen.

ORGANISMS : Klebsiella pneumoniae (Moderate growth)

ANTIBIOGRAM

SENSITIVE	MODERATELY SENSITIVE	RESISTANT
Colistin	Tigecycline	Imipenem
Polymyxin B		Meropenem
Co-Trimoxazole		Amoxycillin + Clavulanic acid
Chloramphenicol		Cefuroxime
		Cefixime
		Ceftriaxone
		Ceftazidime
		Cephotaxime
		Ciprofloxacin
		Levofloxacin
		Amikacin
		Gentamicin
		Netilmicin
		Piperacillin + Tazobactam
		Cefoperazone + Sulbactam
		Cefepime + Tazobactam

Specimen.................................. **Bal fluid**

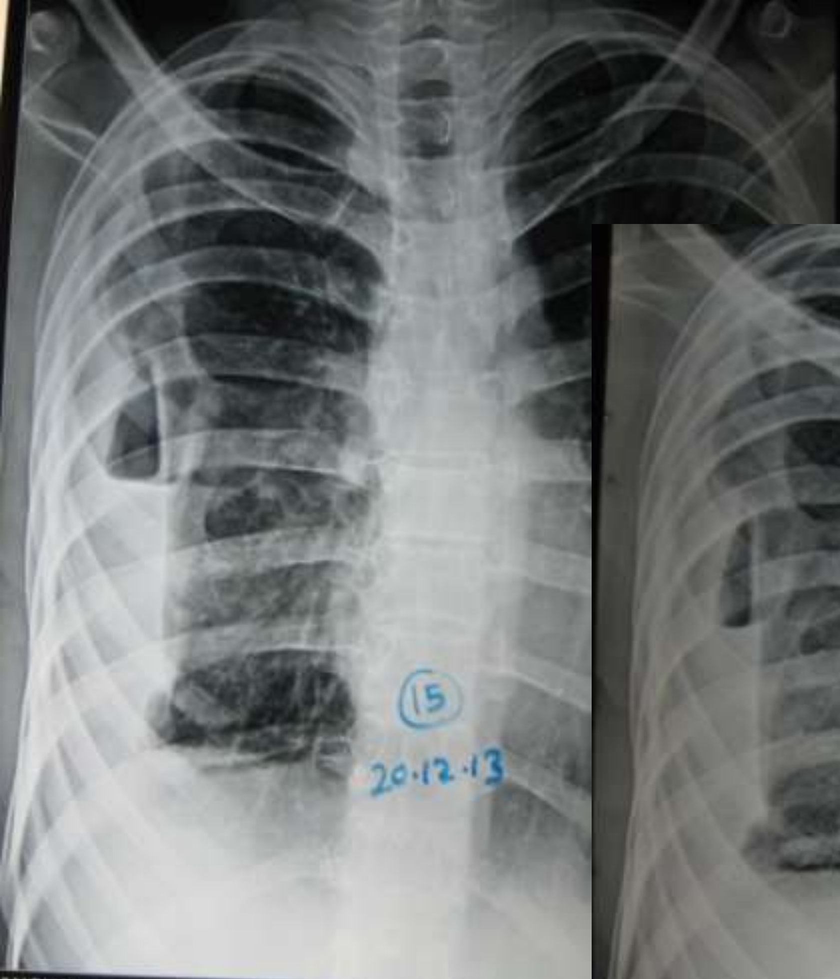
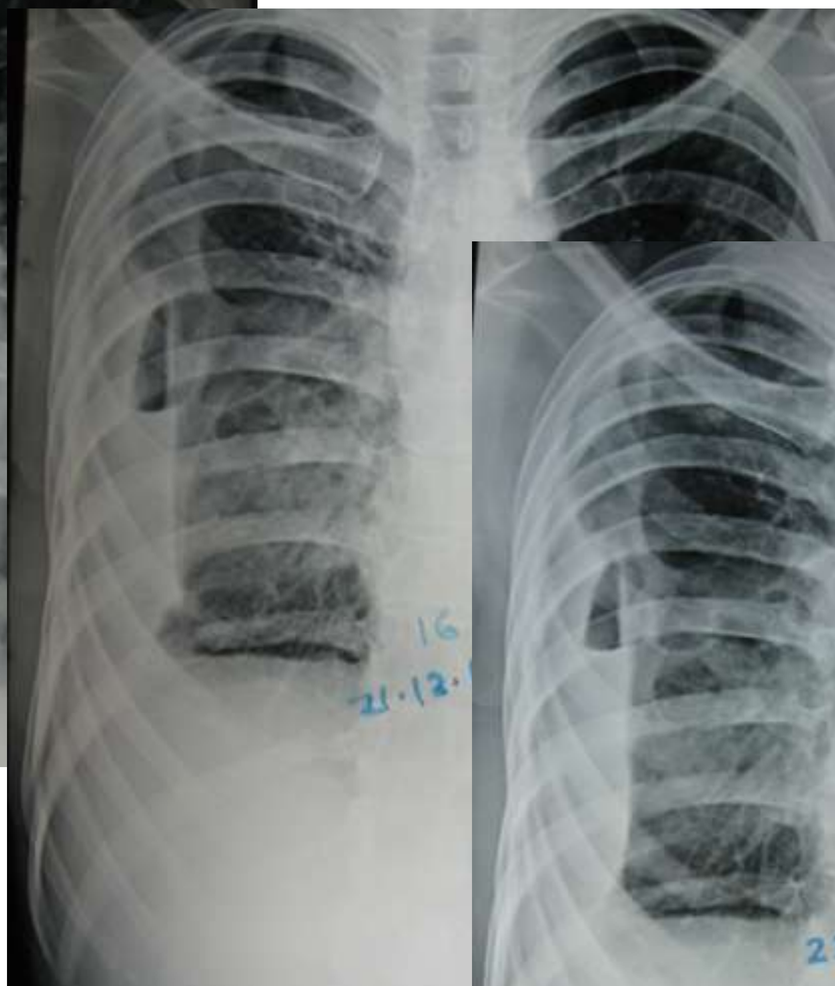
AFB Concentrartion (Day 1)..... **Positive(4-5/entire smear)**

Comment .... **AFB culture put up. Report follows on 10/01/2014.**

Pleural Fluid Report

- Next day : Pleural fluid aspirated 80 ml turbid

- No organisms
- No AFB by ZN stain
- No growth on culture


15
20.12.13

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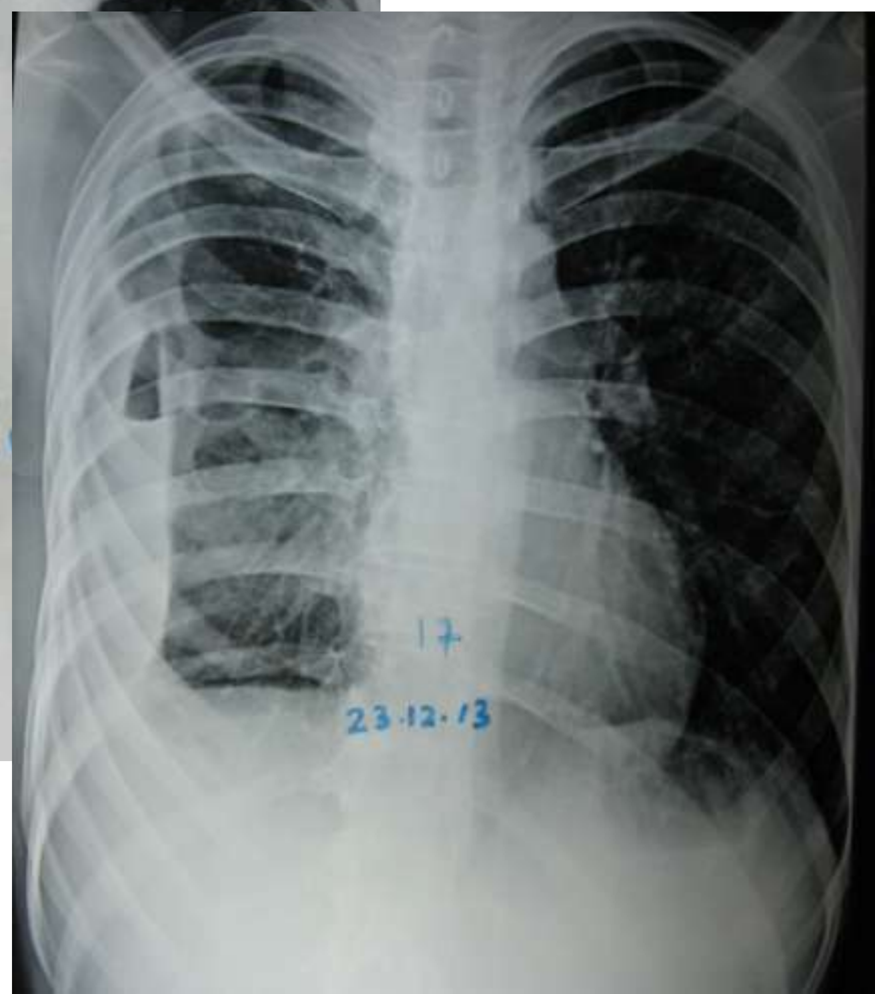
21.12.

17
23.12.13

Discharged on 6th day

- Treated with
  - HERZ
  - Inj. Amikacin
  - Inj. Piperacillin+Tazo
    - Switched to Inj. Tigycycline for 3 days
  - supportive treatment for gastritis

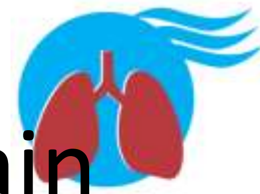
- On Discharge
  - HERZ
  - Tab Chloramphenicol
    - 500 mg tds
  - Supportive MV/BC

Follow up

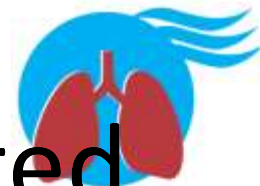
06-Jan-2014

Dr. Manoj Yadav

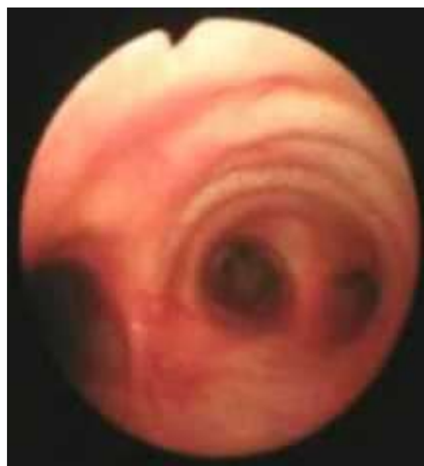
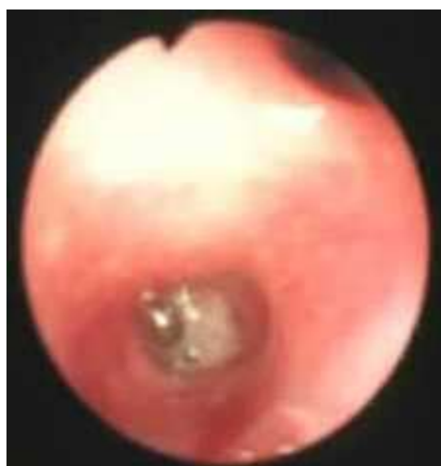
KAILASH hospital
centre for respiratory care



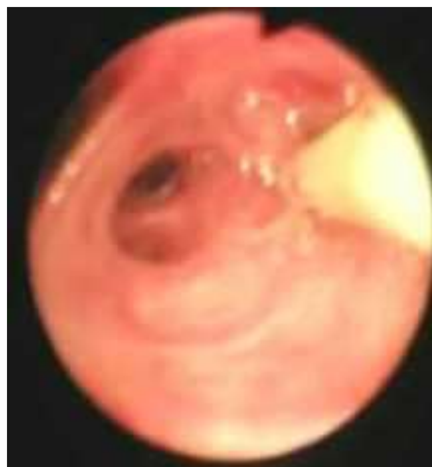
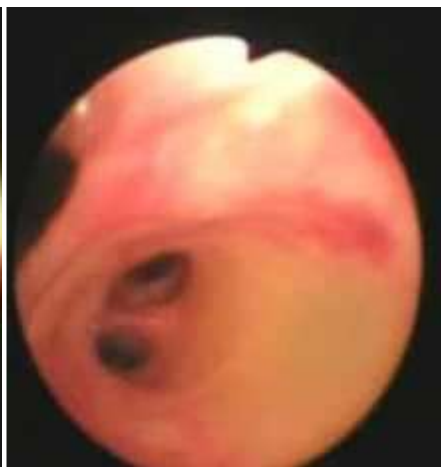
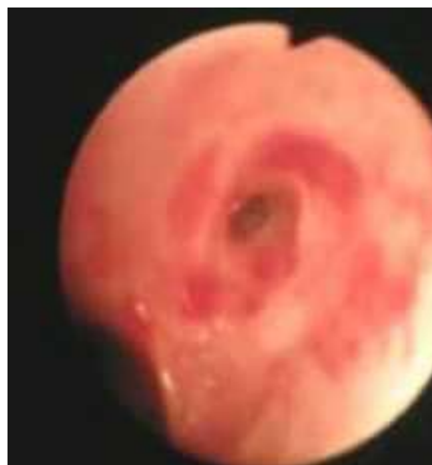
15 days later HRCT Chest done again

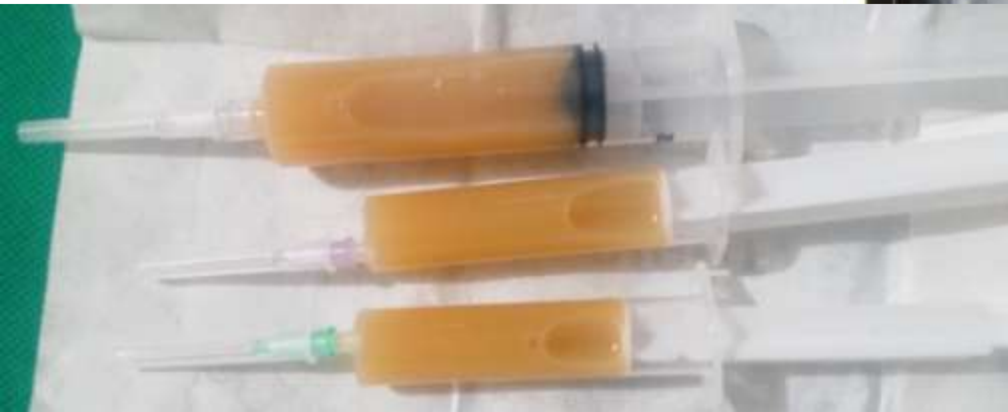


Fiberoptic Bronchoscopy repeated

- Apart from usual lavage, a catheter was inserted into the lower lobe segment and fluid aspirated



Continued treatment on OPD

- HERZ
- Tab Immumod
- Tab Esomeprazole
- Nutritious diet

- Rapid weight gain and good clinical improvement noted.

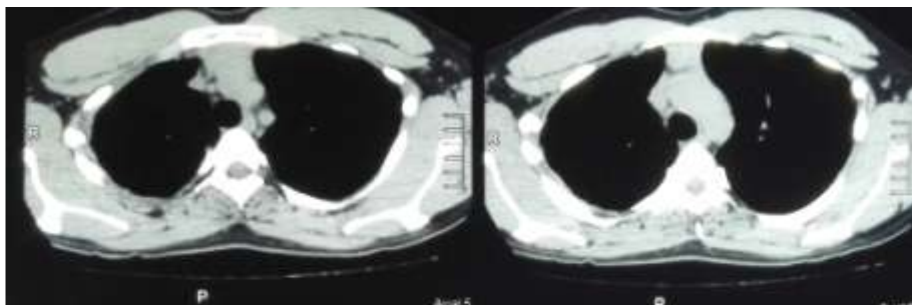
29

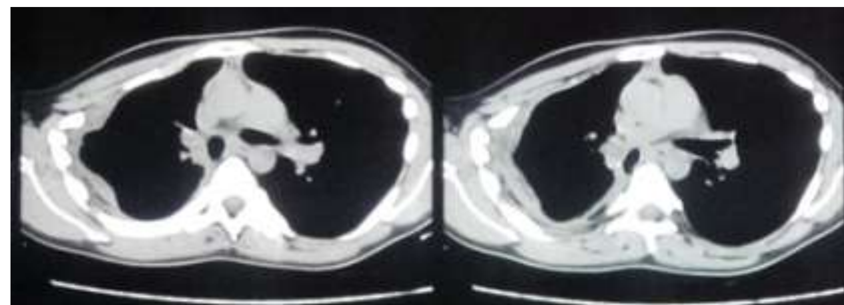
20.2.14

20

6.3.14

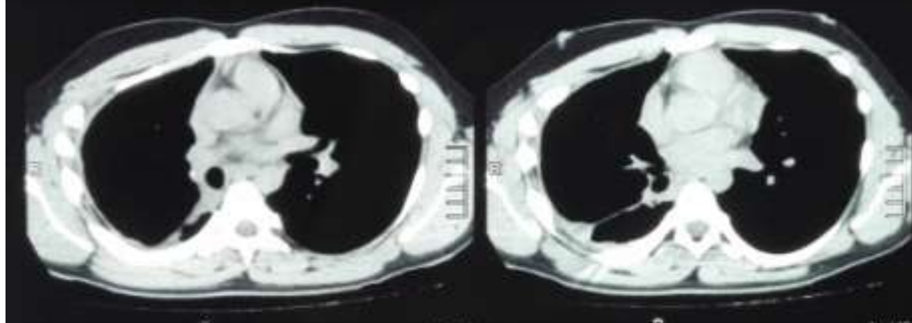
CT Chest in Oct 2014

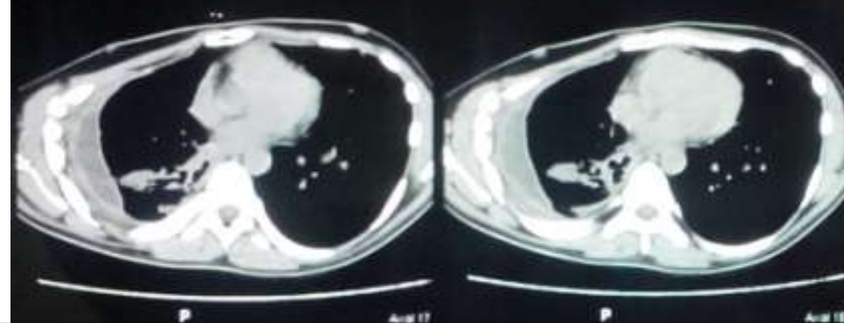




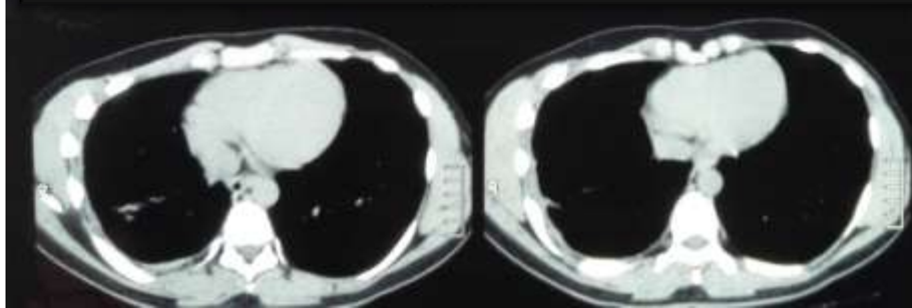
October 2104

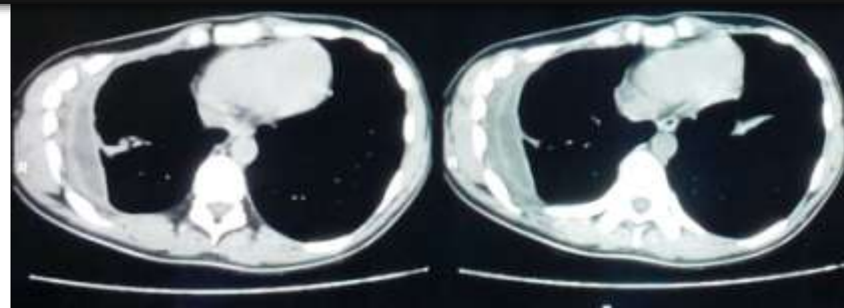
January 2014



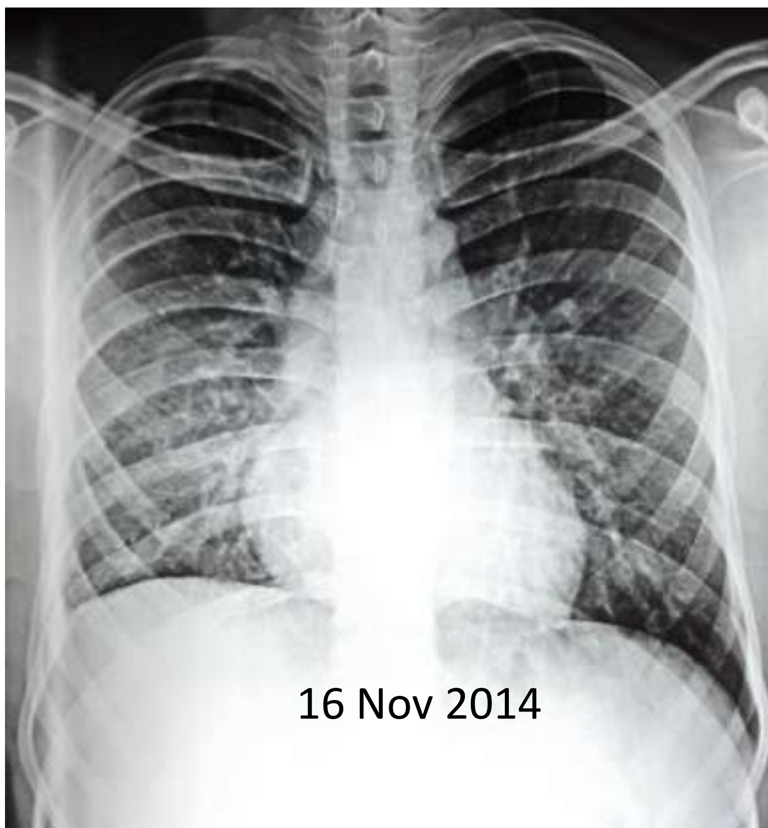


Pleural thickening GONE





Chest X ray taken before stopping AKT



- No pleural thickening
- No decortication was required.

Remarks

- Both cases were labelled as MDR TB without most basic investigations
- Both cases were complicated with gram negative bacilli.
- Both patients responded well to the first line AKT and other medications

Learning Points

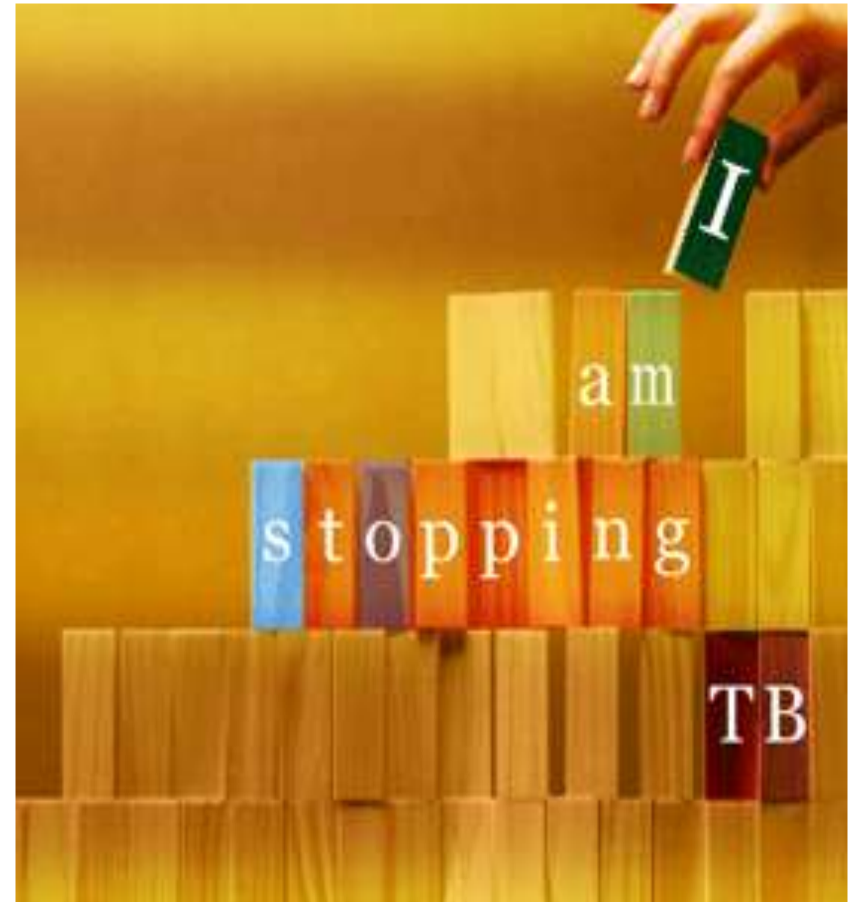
- A patient of Kochs not responding to AKT is not always MDR TB
- Try to rule out common pathogens
- Common pathogens too can be multidrug resistant
- Timely and Judicious use of interventional modalities can change the course of disease and patients life

In conclusion

Lets

Ask

Ourselves



UNITE TO

END

TB

Thank you for viewing

Your valuable comments can be emailed to

drmanojyadav@yahoo.com or click on